School District of Manawa

Board of Education Agenda
February 18, 2019

1. Call to Order – President Johnson – **7:00 p.m.** – MES Boardroom, 800 Beech Street
2. Pledge of Allegiance
3. Roll Call
4. Verify Publication of Meeting
5. Presentations:
    a. Q12 Survey Strategies - Administrative Team
    b. Screening Data - Administrative Team
6. Announcements:
    a. Contributions to the District
    b. Other Contributions
7. Consent Agenda
    a. Approve Minutes of January 16, 21, 29 and February 13, 2019 Board Meetings
    b. Treasurer's Report/Approve Expenditures & Receipts
    c. Donations:
        i. City of Manawa Cold-Patched a Pot Hole in the HS Driveway Jan. 18th
        ii. Anonymous Donation for Washington DC Trip $1,100.00
        iii. Table, Two Leaves and Chairs for Paving the Way from Everett & Rita Schefelker, Manawa
    d. Consider Acceptance of Educator Effectiveness Grant Award as Presented
    e. Consider Approval of Updated District Fundraiser List for SY1819 Updates as Presented
    f. Consider Approval of Football Coaching Staff for SY1920 as Presented
8. Any Item Removed from Consent Agenda
    a.
    b.
9. Public Comments (Register to Speak Prior to Start of Meeting / Guidelines Listed Below Agenda)
10. Correspondence:
    a. Correspondence - None this month
11. Board Recognition:
    a. Olivia Balthazor - North Central Vice President Award at the Regional Youth Art Month Art Show
    b. National FFA Week February 16-23, 2019
    c. National School Breakfast Week March 4-8, 2019
12. District Administrator's Report:
    a. Student Council Representative - Kyle Kons
    b. Legislative Update
    c. Monthly Enrollment Update & Membership Reports
    d. Academic Updates
13. School Operations Reports:
    a. ES Principal: Highlights - Included in Board Packet
    b. HS Principal: Highlights - Included in Board Packet

14. Business Related Reports:
    a. Highlights - Included in Board Packet
    b. Kobussen Transportation Report
15. Director's Reports:
    a. Curriculum / Special Education Director Highlights
    b. Technology Director Highlights
16. Board Comments:
    a. President Johnson - WASB Convention
    b. Discussion: Fund 80
    c. Discussion: Makeup for Inclement Weather Days Plan SY1819
17. Committee Reports:
    a. Curriculum Committee
        i. Science Curriculum Mapping Gr. K-8
        ii. Financial Literacy Curriculum Map
        iii. Business and Personal Law Curriculum Map
    b. Finance Committee
        i. Budget Forecasting Presentation
        ii. Consider Endorsement of Staff and Program Change Proposal for SY1920
        iii. Budgeting Plan for Fund 46 Sustainability
        iv. Analysis of Fund 80 - Community Fund
            1. STEP
            2. Middle School Sports
            3. Congregate Dining/Meals-on-Wheels Programs
            4. Police Liaison Officer
            5. Mental Health Services
            6. Other
        v. Fitness Center Usage Guidelines
        vi. Inclement Weather Budget Implications
18. Unfinished Business:
    a. Consider Approval of the Revised Bid Process Policy 6320 as Presented
19. New Business:
    a. Consider Approval of Calendar SY1920 with Commencement on the Morning of May 23, 2020
    b. Consider Approval of the Science Curriculum Mapping Gr. K-8 as Presented
    c. Consider Approval of the Financial Literacy Curriculum Map as Presented
    d. Consider Approval of the Business and Personal Law Curriculum Map as Presented
    e. Consider Approval of the Staff and Program Change Proposal for SY1920 as Presented
    f. Consider Approval of Fund 80 Community Fund Recommendation as Presented (refer to 16b)
    g. Consider Approval of Makeup for Inclement Weather Days Plan for SY1819 as Presented (refer to 16c and 16ci)
    h. Consider Approval of Support Staff Handbook Change for SY1819 as Presented
20. Next Meeting Dates:
    a. Mar. 5, 2019 - Curriculum Committee Mtg - 5:30 p.m. - MES Board Room
    b. Mar. 5, 2019 - Finance Committee Mtg - Immediately Following the Curriculum Comm Mtg
    c. Mar. 6, 2019 - Buildings & Grounds Committee Mtg – 6:00 p.m. – MES Board Room
    d. Mar. _____ - Set Policy & Human Resources Committee Meeting

e. Mar. 13, 2019 - Special BOE Mtg - Hoffman Update - 5:30 p.m. - MES Board Room
f. Mar. 18, 2019 - BOE Mtg - 6:30 p.m. Rapid Improvement Study - 7:00 p.m. Open Session Begins- MES Board Room

21. Adjourn

PLEASE NOTE: Any person with a qualifying disability under the Americans with Disabilities Act that requires the meeting or material to be in accessible format, please contact the District Administrator to request reasonable accommodation. The meeting room is wheelchair accessible.

Public Participation at Board Meetings (Bylaws 0167.3)
The Board of Education recognizes the value of public comment on educational issues and the importance of allowing members of the public to express themselves on District matters.

Agenda Item

Any person or group wishing to place an item on the agenda shall register their intent with the District Administrator no later than fifteen (15) days prior to the meeting and include:

A. name and address of the participant;
B. group affiliation, if and when appropriate;
C. topic to be addressed.

Such requests shall be subject to the approval of the District Administrator and the Board President.

Public-Participation Section of the Meeting

To permit fair and orderly public expression, the Board shall provide a period for public participation at every regular meeting of the Board and publish rules to govern such participation in Board meetings.

The presiding officer of each Board meeting at which public participation is permitted shall administer the rules of the Board for its conduct.

The presiding officer shall be guided by the following rules:

A. Public participation shall be permitted as indicated on the order of business, at the discretion of the presiding officer, and for individuals who live or work within the District and parents/guardians of students enrolled in the District.
B. Attendees must register their intention to participate in the public portion of the meeting upon their arrival at the meeting.
C. Participants must be recognized by the presiding officer and will be requested to preface their comments by an announcement of their name; address; and group affiliation, if and when appropriate.
D. Each statement made by a participant shall be limited to three (3) minutes duration.
E. No participant may speak more than once on the same topic unless all others who wish to speak on that topic have been heard.
F. Participants shall direct all comments to the Board and not to staff or other participants.
G. All statements shall be directed to the presiding officer; no person may address or question Board members individually.
H. The presiding officer may:
    a. interrupt, warn, or terminate a participant's statement when the statement is too lengthy, personally directed, abusive, obscene, or irrelevant;
    b. request any individual to leave the meeting when that person does not observe reasonable decorum;

c. request the assistance of law enforcement officers in the removal of a disorderly person when that person's conduct interferes with the orderly progress of the meeting;
d. call for a recess or an adjournment to another time when the lack of public decorum so interferes with the orderly conduct of the meeting as to warrant such action;
e. waive these rules with the approval of the Board when necessary for the protection of privacy or the administration of the Board's business.

I. The portion of the meeting during which the participation of the public is invited shall be limited to fifteen (15) minutes, unless extended by a vote of the Board.

J. Recording, filming, or photographing the Board's open meetings is permitted. Recording, filming, or photographing the Board's closed session is only permitted pursuant to Bylaw 0167.2 – Closed Session. The person operating the equipment should contact the District Administrator prior to the Board meeting to review possible placement of the equipment, and must agree to abide by the following conditions:
a. No obstructions are created between the Board and the audience.
b. No interviews are conducted in the meeting room while the Board is in session.
c. No commentary, adjustment of equipment, or positioning of operators is made that would distract either the Board or members of the audience or otherwise disrupt the meeting while the Board is in session.

19.90, Wis. Stats.

Minutes of the January 16, 2019 Special Board of Education Meeting

Call to Order – President Johnson – 5:30 p.m. – MES Board Room, 800 Beech Street
Pledge of Allegiance
Roll Call: Scheller, Forbes, Hollman, Pohl, Pethke, R. Johnson, and J. Johnson.
Verify Publication of Meeting by Dr. Oppor

Approved by Consent: Approval of Special Education Paraprofessional Hire for Remainder of SY1819 as Presented, Approval of MS Wrestling Coaches Hire for SY1819 as Presented.

New Business:
Presentation of the Results of the District-wide Survey, by Bill Foster, School Perceptions
Bill Foster, School Perceptions attended via teleconference to review the district-wide survey December 2018/January 2019. Participation rate 27%, Expanding and remodeling of fine arts area and gym space. Option 1: competition gym, Option 2: full size gym, Option 3: smaller gym, Option 2 had the most support followed by Option 1, Option 3.

Cost to put on ballot estimates: $1,750 machine coding, $135 Waupaca post, $115 Waupaca Post sample ballot, $303 bulk mailing, $3,200 printed materials, $5,503 approximate cost, $2,500-3,000 is estimated for the informational campaign.

Motion by Hollman / Forbes to include Referendum Option 2 and Fitness Center as appeared on survey in the April election. Motion carried.

Hoffman Planning, Design & Construction, Inc. - Progress Update by Jody Andres: MES-Meeting with MES staff on the Early Childhood/4-K area, special education, remodel. The remainder would be the carpet replacement, removing carpeting in some areas and replacement with vinyl flooring, roof and items from the maintenance list. Layout of the outdoor space behind the school/driveway.
Little Wolf Jr./Sr. High School Tech Ed area-involved in discussion. STEM, Metals and Ag shop. Vinyl flooring and ceiling tile replacement throughout the school d/t abatement of asbestos band/choir/stage update. Update the sound system, lighting; wheelchair accessibility to the stage area. Meeting with food service staff this week as this is adjoining shared space with the stage area. Science lab and biology lab infrastructure update. Middle school-flexible and collaboration space and discussion of natural lighting. Entrance, administration/foyer area update. Special needs area update-shared space with kitchenette, laundry; family education; Fitness area update-addition of the elevator. Overview of schedule for summer of 2019 and 2020 projects by Matt McGregor; Continued discussion regarding demolition of the vacant school.

Next Meeting Dates:
Jan. 21, 2019 – Regular BOE Meeting 6:30 p.m. Rapid Improvement Process Study; 7:00 p.m. Regular Meeting MES Board Room, Jan. 29, 2019 – Special Board Meeting - Audit Review 6:00 p.m. MES Board Room, Feb. 5, 2019 – Finance Committee Meeting – 6:00 p.m. MES Board Room, Feb. 6, 2019 Tentative Buildings & Grounds Committee Meeting 6:30 p.m. MES Board Room, Feb. 11, 2019 – Policy & Human Resources Committee Meeting 5:00 p.m. MES Board Room, Feb. 13, 2019 Spec BOE Meeting 5:30 p.m. Hoffman Update MES Board Room, Feb. 18, 2019 Regular BOE Meeting 6:30 p.m. Rapid Improvement Process Study, 7:00 p.m. Regular Meeting MES Board Room

Motion by Hollman / Scheller to adjourn at 7:06 p.m. Motion carried.

Bobbi Jo Pethke, Clerk

Minutes of the January 21, 2019 Board of Education Meeting

Call to Order – President Johnson – 6:30 p.m. in the MES Board Room
Pledge of Allegiance - 7:00 p.m. - lead by President Johnson
Roll Call - Scheller, Forbes, Hollman, Pethke, Pohl, R. Johnson and J. Johnson
Verify Publication of Meeting - by Dr. Oppor

Presentation: Q12 Survey Strategies - Administrative Team - shared overall strategies from the results received after staff completed survey in the fall 2018. At the 11th national percentile in staff engagement. Goal - 50th percentile next fall. Need to do: engagement groups to explore three themes, micromanaging, trust and value of time. Gallup gives you information of where to look; does not tell you how to fix it. Find out the (issues) and then plan, act, study, do to work towards building relationships. Dr. Oppor - analyzing information on a personal level. Will update on this subject monthly.

Announcements: President Johnson thanked the following for Contributions to the District: Donations: Manawa Chamber of Commerce Donated $200 to LWHS Band for Participation in Miracle on Bridge St., Fire On Ice Inc., Weyauwega Donated $75 to Manawa FFA, Dr. Melanie Oppor $100 Compensation from Service on Public Library Board to Title I Reading Program, Sturm Foods $200 for Bowling Team, Tom Abraham, New London - a Flute Valued at $400 to Band Department, Helene Pohl, Ogdensburg - a Cornet Valued at $250 to Band Department, Linda Trepasso, Iola - a Cornet Valued at $50 to Band Department, Kobussen Donated the Buses for Band Students to March in Miracle on Bridge Street Parade, Manawa Chamber of Commerce Donated $528.88 to School District Urgent Needs Fund, Bonikowske Farms Donated $300 to the Washington DC Trip, Anonymous Donation of $100 to the Washington DC Trip

Other Contributions: None this month

Approved by Consent: Approve Minutes of December 17, 2018 and January 16, 2019 Board Meetings, Treasurer's Report/Approve Expenditures ($1,360,205.97) & Receipts (36,057.09); Donations: Manawa Chamber of Commerce Donated $200 to LWHS Band for Participation in Miracle on Bridge St., Fire On Ice Inc., Weyauwega Donated $75 to Manawa FFA, Dr. Melanie Oppor $100 Compensation from Service on Public Library Board to Title I Reading Program, Sturm Foods $200 for Bowling Team, Tom Abraham, New London - a Flute Valued at $400 to Band Department, Helene Pohl, Ogdensburg - a Cornet Valued at $250 to Band Department, Linda Trepasso, Iola - a Cornet Valued at $50 to Band Department, Kobussen Donated the Buses for Band Students to March in Miracle on Bridge Street Parade, Manawa Chamber of Commerce Donated $528.88 to School District Urgent Needs Fund, Bonikowske Farms Donated $300 to the Washington DC Trip, Anonymous Donation of $100 to the Washington DC Trip, approved the Updated Fundraiser List for SY1819 as presented, accepted WTI Round 13 Grant in the Amount of $18,820 plus the cost of training to launch a Makerspace at the Manawa Elementary School, approved a Foreign Exchange Student for the SY1920 as presented, approved the Recommended Changes to Food Service Manager Position as presented

Any Item Removed from Consent Agenda - Nothing this month

Public Comments (Register to Speak Prior to Start of Meeting / Guidelines Listed Below Agenda)
Correspondence: Thank you From Melissa Tassone for Memorial for Alice Oleson

Board Recognition: Brett Zielke - Gr. 11 - for placing 19th on World Leaderboard for Small Business Simulation Game. (Scored one of the highest scores ever seen)

District Administrator's Report:
Student Council Representative - Madalyn Nienhaus - Jr. also part of art team, art club. NO questions with board tonight. Meeting re bleachers went well. Upcoming hosting the state student council in GB this year: and in charge of set up. Homecoming Handbook being worked on to keep everything consistent.
President Johnson was approached about the parking lot: has student council discussed the parking lot? how to be more polite in the parking lot. Maddy said no they had not discussed. Great way to help solve problems. Mr. Wolfgram stated it's a great way for students to find out there is a process; how to fix a problem.
Gallery Walk coming up on Jan. 28th.

District Administrator's Report: Legislative Update: Channel 2 was in town today at 3:30. Dr. Oppor met with them and Mayor Smith regarding the Dark Store Loophole issue. Large packet Blue Ribbon Commission on School Funding; state aid payments structure; Monthly Enrollment Update - 714 students overall; School Board Election Update - Sample Ballot Russell J. Johnson for Zone 6 (Lebanon / Bear Creek) and Joanne L. Johnson for Full District both running unopposed. School Operations Reports: Included in packet - ES Principal and HS Principal Highlights

Business Related Reports: Highlights - Included in Board Packet, Food Service Audit Report, Kobussen Transportation Report, IRS Mileage Reimbursement Rate 2019, Salary Advancement Model was reviewed - how it is affecting staff. Increased base wage to attract new teaching staff. This is our 2nd year for on-ramp of new model; going forward, teacher contract increases will be tied to evaluation system.

Director's Reports: Included in Packet - Curriculum / Special Education Director and Technology Director Highlights. Curriculum Maps will be distributed later this week.

Board Comments:
Helene Pohl: Legislative Breakfast met with Rep. Shraa. Area board members met with him regarding budget and state funding for SY1920; rehiring of retirees without penalty due to shortage of teachers.

Committee Reports: Minutes from Finance and Policy & Human Resources committee meetings were included in board packet.

Unfinished Business:
Motion by: Pohl / Scheller to approve Policy 5451.01 Revised, from Vol. 25 No. 2 Policy Updates as Presented. Motion carried

Motion by: R. Johnson / Pethke to approve Policy 5460 Update - Graduation Requirements as Presented . Motion carried.

New Business:
Motion by: Forbes / Scheller to approve the Open Enrollment Available Space for 2019-2020 as Presented. Motion carried.

Motion by: Scheller / R. Johnson to approve the ADM as Bond Proceeds Investment Company as Presented. Motion carried.

Motion by: Forbes / Pohl to approve an Adult Meal Price Increase for the Remainder of the SY1819 as Presented. Motion carried.

Motion by: Pohl / Scheller to approve the Addition of the following Language to the Support Staff and Professional Education Handbooks: "Staff have the privilege to bring representation of choice when meeting with an administrator." as Presented. Motion carried.

Motion by: Scheller / Hollman to approve the Replication of D.#2 - Employee Discipline (p. 21) from Professional Educator Handbook to Support Staff Handbook as Presented. Motion carried.

1st Reading Revised Bid Process Policy 6320 - will be considered for approval at the February meeting.

Motion by: R. Johnson / Pethke to approve ag6605 Crowdfunding as Presented. Motion carried.

Motion by: Pohl / Hollman to approve the Administrative Guidelines 7000 Series with the correction as noted to AG7540 - Computer Technology and Networks and the tabling of AG7540.04 until the next Policy and Human Resources Committee Meeting. Motion carried.

Motion by: Forbes / Scheller to approve the Custodial Evaluation Program Handbook with Comments Section Added as Presented. Motion carried.

Motion by: Pohl / R. Johnson to approve the Initial Resolution SY1819#17 Authorizing General Obligation Bonds in an Amount Not to Exceed $3,500,000. Motion carried.

Motion by: Forbes /Scheller to approve Resolution SY1819#18 Providing for a Referendum Election on the Question of the Approval of an Initial Resolution Authorizing the Issuance of General Obligation Bonds in an Amount Not to Exceed $3,500,000. Motion carried.

Motion by: Scheller / R. Johnson to approve Resolution SY1819#19 Authorizing the Issuance and Sale of a $7,500,000 Bond Anticipation Note Pursuant to Section 67.12(1)(b), Wisconsin Statutes. Motion carried.

Motion by: Pohl / Hollman to approve Resolution SY1819#20 Authorizing the Issuance and Establishing Parameters for the Sale of Not to Exceed $7,500,000 General Obligation Refunding Bonds. Motion carried.

Next Meeting Dates:
Jan. 29, 2019 – Spec BOE Mtg – Audit Review – 6:00 p.m., Feb. 5, 2019 - 4:00 p.m. Curriculum Committee Mtg, Feb. 5, 2019 – Finance Committee Meeting – 6:00 p.m.

Feb. 6, 2019 – Buildings & Grounds Committee Meeting – 6:30 p.m., Feb. 11, 2019 - Policy & Human Resources Committee Meeting - 5:00 p.m., Feb. 13, 2019 – Spec BOE Mtg – 5:30 p.m. – Hoffman Update, Feb. 18, 2019 - Regular BOE Mtg - 6:30 p.m. Rapid Improvement Study - 7:00 p.m. Open Session Begins.

Motion by: Pethke / Scheller to adjourn at 8:02 p.m. and Move into Closed Session Pursuant to the Provisions of 19.85(1)(a)(c)(f), 118.22 and 118.125 Wis. Statutes, for the Purposes of: Discussing the Employment Status of Employees Over Which the Board Has Jurisdiction or Exercises Responsibility 1) Administrator Contract Renewals 2) employee discipline. Motion carried.
Present in Closed Session Meeting: Scheller, Forbes, Hollman, Pohl, Pethke, R. Johnson, J Johnson.

Motion by Scheller / R. Johnson to adjourn from closed session and to move into open session at 8:32 p.m. Motion carried by roll call: Scheller, Forbes, Hollman, Pohl, Pethke, R. Johnson, J. Johnson.

Motion by Pohl / R. Johnson to renew a two (2) year contract for MES Principal Mrs. Pukita, Director of Technology Mr. Cobarrubias, Business Manager Mrs. O'Brien. Motion carried.

Motion by Scheller/Forbes to adjourn at 8:32 p.m. Motion carried.

Jeanne Frazier, Recorder

Minutes the January 29, 2019 Special Board of Education Meeting

Call to Order – President Johnson – 6:00 p.m. – MES Boardroom, 800 Beech Street
Pledge of Allegiance
Roll Call: Present: Scheller, Forbes, Pethke, J. Johnson. Pohl attendance via phone conference.
Absent: Hollman, R. Johnson
Verify Publication of Meeting-Dr. Oppor

New Business
2017-18 Audit Report by Erickson & Associates, S.C.: Abe Isacson provided the independent audit report / financial statements. Packets of data distributed. He provided a management letter with overview of information and recommendations.

Consider Approval of Schematic Design Submittal: Matt McGregor and Jody Andres provided overview to talk with the Board to move through the design and budget. They met with the MES staff to discuss flexible space in the Special Education area. Mr. Andres provided an overview of the 4-Kindergarten area. Floor replacement overview. General areas, fire system replacement, roof, clock system, generator, emergency power, replacement of air handling unit.

Jr/Sr HS-removal of asbestos tile and ceiling tile. Lower level-elevator, storage area, locker rooms. Met with the PE staff regarding space if the referendum passes in April. If the referendum doesn't pass, it would have some base to work off of for any future gym area. Overview of the student classrooms, Office area, discussion of toilet area placement/changes in the Middle School area, Health / Nurse area overview, band/stage area-ramp on the outside and a lift for the stage on the inside; Ag area-met with staff; Special needs area collaboration area; roof, mechanical controls, tuck pointing, painting etc. The generator is up and running.

Design Budget Review-Matt McGregor: Reviewed the wants and need of groups and staff. Review broken down between MES and Jr.Sr HS.

Motion by Forbes / Scheller to approve the Schematic Design Submittal from Hoffman Planning & Design as presented. Motion carried - Hollman and R. Johnson absent.

Next Meeting Dates:
Feb. 5, 2019 - Curriculum Committee Mtg - 4:00 p.m. - MES Board room
Feb. 5, 2019 – Finance Committee Meeting – 6:00 p.m. – MES Board Room
Feb. 6, 2019n - Buildings & Grounds Committee Meeting – 6:30 p.m. – MES Board Room
Feb. 11, 2019 - Policy & Human Resources Committee Meeting - 5:00 p.m. - MES Board Room
Feb. 13, 2019 – Spec BOE Mtg – 5:30 p.m. – Hoffman Update - MES Board Room
Feb. 18, 2019 - Reg BOE Mtg - 6:30 p.m. Rapid Improvement Study - 7:00 p.m. Open Session - MES Brd Rm

Motion by Scheller/Forbes to adjourn at 6:51 p.m. Motion carried - Hollman and R. Johnson absent.

Bobbi Jo Pethke, Clerk

Minutes of the February 13, 2019 Special Board of Education Meeting

Call to Order – President Johnson – 5:34 p.m. – MES Board Room, 800 Beech Street
Pledge of Allegiance
Roll Call: Scheller, Forbes, Pohl, Pethke, R. Johnson, J. Johnson. Absent:

Verify Publication of Meeting

Items to Approve by Consent presented:
Consider Approval of DOJ Safety Grant Surveillance Camera Purchase and Installation Bid
Approved by Consent: Transfer of an Instructional Paraprofessional to a 1.0 FTE Custodial Position

Removed this meeting - item 5a: DOJ Safety Grant Surveillance Camera Purchase and Installation Bid
Motion by Pohl / Scheller to table the DOJ Safety Grant Surveillance Camera Purchase and Installation bid until next month by Pohl/Scheller. Motion carried – Hollman absent.

New Business:

Hoffman Planning, Design & Construction, Inc. - Progress Update by Jody Andres
Jody Andres talked about budget and alignment with costs/schematic design. He will be setting up a time with Administration to discuss Key Performance Indicators and looking at budget alignment and how communicated information back to everyone. Infrastructure addressed by Jody as well.

Gallery Walk update: good staff participation. Good ideas from the community as well. 86 items-32 were requests, 10 were already been discussed. Overall felt we are on the way to hitting targets.

Matt said no changes to plan at this point. Sending out the 2019-2020 calendar to go over details on Friday. Optimize construction and ending school in May and utilizing Spring Break of 2020.

Next Meeting Dates:
Feb. 13, 2019 – Finance Comm Mtg Immediately Following Spec BOE Mtg – MES Board Rm
Feb. 18, 2019 - Reg BOE Mtg - 6:30 p.m. Rapid Improvement Study 7:00 p.m. Open Session - Brd Rm
Mar. 5, 2019 - Curriculum Committee Mtg - 5:30 p.m. - MES Board Room
Mar. 6, 2019 - Buildings & Grounds Committee Mtg – 6:00 p.m. – MES Board Room

Motion by Scheller / Pethke to Adjourn at 5:55 p.m. Motion carried – Hollman absent.

Bobbi Pethke, Clerk

CHECK NUMBER	VENDOR	BATCH NUMBER	CHECK DATE	INVOICE DESCRIPTION	ACCOUNT DESCRIPTION	PO NUMBER	AMOUNT
79341	BUSSE, KEVEN	JPAP01	01/21/2019	MS WRESTLING OFFICIAL ON 1/21/19 VS MULTIPLE SCHOOLS	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	125.00
					Totals for 79341		125.00
79342	WAEA - WI ART EDUCAT	JPAP01	01/21/2019	NANCY ZABLER YOUTH ART MONTH REGISTRATION	GENERAL FUND/DUES & FEES MEMBRSHIP/FT FEES/ART	4001900216	15.00
79342	WAEA - WI ART EDUCAT	JPAP01	01/21/2019	YOUTH ART MONTH REGISTRATION - MES	GENERAL FUND/DUES & FEES MEMBRSHIP/FT FEES/ART	1011900074	15.00
					Totals for 79342		30.00
79343	BEYER, ALAN	jpap01	01/23/2019	VARSITY GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS NEW LONDON	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	70.00
79343	BEYER, ALAN	021219	02/12/2019	VARSITY GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS NEW LONDON	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	-70.00
					Totals for 79343		0.00
79344	CZARNECKI, LARRY	jpap01	01/23/2019	JV GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS NEW LONDON	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	47.00
79344	CZARNECKI, LARRY	021219	02/12/2019	JV GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS NEW LONDON	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	-47.00
					Totals for 79344		0.00
79345	CZARNECKI, LARRY	jpap01	01/23/2019	JV BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	47.00
79345	CZARNECKI, LARRY	021219	02/12/2019	JV BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-47.00
					Totals for 79345		0.00
79346	DISTERHAFT, MYRIAH	jpap01	01/23/2019	VARSITY GIRLS BASKETBALL OFFICIAL ON 1/24/19 VS SHIOCTON	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	70.00
					Totals for 79346		70.00
79347	HASS, MARK	jpap01	01/23/2019	JV GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS NEW LONDON	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	47.00
79347	HASS, MARK	021219	02/12/2019	JV GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS NEW LONDON	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	-47.00
					Totals for 79347		0.00
79348	HASS, MARK	jpap01	01/23/2019	JV2 BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS	0	47.00

CHECK NUMBER	VENDOR	BATCH NUMBER	CHECK DATE	INVOICE DESCRIPTION	ACCOUNT DESCRIPTION	PO NUMBER	AMOUNT
					BASKETBALL		
79348	HASS, MARK	021219	02/12/2019	JV2 BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-47.00
						Totals for 79348	0.00
79349	KIERSTEAD, DAVID	jpap01	01/23/2019	VARSITY BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
79349	KIERSTEAD, DAVID	021219	02/12/2019	VARSITY BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-70.00
						Totals for 79349	0.00
79350	LUPIEN, ROGER	jpap01	01/23/2019	JV2 BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	47.00
79350	LUPIEN, ROGER	021219	02/12/2019	JV2 BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-47.00
						Totals for 79350	0.00
79351	MAJERUS, JON	jpap01	01/23/2019	VARSITY GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS NEW LONDON	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	70.00
79351	MAJERUS, JON	021219	02/12/2019	VARSITY GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS NEW LONDON	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	-70.00
						Totals for 79351	0.00
79352	MCCARVILLE, BRETT	jpap01	01/23/2019	VARSITY BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
79352	MCCARVILLE, BRETT	021219	02/12/2019	VARSITY BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-70.00
						Totals for 79352	0.00
79353	NILLISSEN, TERRY	jpap01	01/23/2019	MS GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS AMHERST	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
79353	NILLISSEN, TERRY	021219	02/12/2019	MS GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS AMHERST	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	-60.00
						Totals for 79353	0.00
79354	SIMONIS, JEROME	jpap01	01/23/2019	MS GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS AMHERST	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
79354	SIMONIS, JEROME	021219	02/12/2019	MS GIRLS BASKETBALL OFFICIAL	COMMUNITY SERVICE	0	-60.00

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				ON 1/29/19 VS AMHERST	FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES		
					Totals for 79354		0.00
79355	SIMONIS, JEROME	jpap01	01/23/2019	JV BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	47.00
79355	SIMONIS, JEROME	021219	02/12/2019	JV BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-47.00
					Totals for 79355		0.00
79356	VOGEL, KAILEY	jpap01	01/23/2019	VARSITY GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS NEW LONDON	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	70.00
79356	VOGEL, KAILEY	021219	02/12/2019	VARSITY GIRLS BASKETBALL OFFICIAL ON 1/29/19 VS NEW LONDON	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	-70.00
					Totals for 79356		0.00
79357	VOLP, REECE	jpap01	01/23/2019	VARSITY BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
79357	VOLP, REECE	021219	02/12/2019	VARSITY BOYS BASKETBALL OFFICIAL ON 1/31/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-70.00
					Totals for 79357		0.00
79358	ALLIANT ENERGY	JPAP12	01/24/2019	#4740620000 - LWHS GAS - 12/06/18 - 1/9/19	GENERAL FUND/GAS FOR HEAT/OPERATION	4001900136	5,060.22
					Totals for 79358		5,060.22
79359	BATTERIES PLUS	JPAP12	01/24/2019	LIGHT BULBS	GENERAL FUND/GENERAL SUPPLIES/OPERATION	0	114.50
					Totals for 79359		114.50
79360	CRAFTS INC	JPAP12	01/24/2019	LABOR & MATERIALS TO INVESTIGATE/REPAIR ROOF LEAKS AT MES	GENERAL FUND/REPAIR & MAINTENANCE SERVICES/BUILDINGS	0	607.15
					Totals for 79360		607.15
79361	DEMCO	JPAP12	01/24/2019	TABLE FOR HIGH SCHOOL LIBRARY USING COLOR RUN FUNDS TV MOUNT FOR INTERCHANGE CONFERENCE TABLE FOR MONITOR	Special Revenue Trust Fund/EQUIPMENT PURCHASE-ADDITION/LIBRARY MEDIA	4001900210	2,174.62
					Totals for 79361		2,174.62
79362	ENGELHARDT DAIRY OF	jpap11	01/24/2019	LWJSH MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	111.30
79362	ENGELHARDT DAIRY OF	jpap11	01/24/2019	LWJSH MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	47.90
79362	ENGELHARDT DAIRY OF	jpap11	01/24/2019	MES MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD	0	207.10

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					SERVICES		
79362	ENGELHARDT DAIRY OF	jpap11	01/24/2019	MES MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	101.40
					Totals for 79362		467.70
79363	FOLLETT SCHOOL SOLUT	JPAP12	01/24/2019	October Book Order	GENERAL FUND/LIBRARY BOOKS/SCHOOL LIBRARY	1011900067	388.02
79363	FOLLETT SCHOOL SOLUT	JPAP12	01/24/2019	October Book Order	GENERAL FUND/LIBRARY BOOKS/SCHOOL LIBRARY	1011900067	416.55
79363	FOLLETT SCHOOL SOLUT	JPAP12	01/24/2019	November Book Order	GENERAL FUND/LIBRARY BOOKS/SCHOOL LIBRARY	4001900198	271.44
79363	FOLLETT SCHOOL SOLUT	jpap12	01/24/2019	November Book Order	GENERAL FUND/LIBRARY BOOKS/SCHOOL LIBRARY	1011900069	558.43
					Totals for 79363		1,634.44
79364	GOLD CROSS AMBULANCE	JPAP12	01/24/2019	GOLD CROSS CERTIFICATION	GENERAL FUND/PERSONAL SERVICES/HEALTH	1011900071	200.00
					Totals for 79364		200.00
79365	GREEN MECHANICAL	JPAP12	01/24/2019	SERVICE ISSUE OF COLD AIR TEMPERATURE IN MES GYM	GENERAL FUND/REPAIR & MAINTENANCE SERVICES/BUILDINGS	0	330.00
					Totals for 79365		330.00
79366	LAFORCE INC	JPAP12	01/24/2019	T&M DOOR REPAIR	GENERAL FUND/REPAIR & MAINTENANCE SERVICES/BUILDINGS	0	300.00
					Totals for 79366		300.00
79367	LEGO EDUCATION	jpap12	01/24/2019	Color Run - Lego Mindstorm	Special Revenue Trust Fund/NON-CAPITAL EQUIPMENT/TECHNOLOGY SERVICES	8001900021	1,235.85
79367	LEGO EDUCATION	jpap12	01/24/2019	Color Run - Lego Mindstorm	Special Revenue Trust Fund/NON-CAPITAL EQUIPMENT/TECHNOLOGY SERVICES	8001900021	1,039.50
					Totals for 79367		2,275.35
79368	MANAWA LIONS CLUB	JPAP12	01/24/2019	JANUARY 1, 2018 - JUNE 30, 2018 DUES JULY 1, 2018 - DECEMBER 31, 2018	GENERAL FUND/EMPLOYEE DUES AND FEES/OFFICE OF SUPERINTENDENT	0	120.00
					Totals for 79368		120.00
79369	REINHART FOOD SERVIC	jpap11	01/24/2019	USDA FOODS	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	17.40
79369	REINHART FOOD SERVIC	jpap11	01/24/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/CENTRAL SUPPLY ROOM/FOOD SERVICES	0	69.31

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79369	REINHART FOOD SERVIC	jpap11	01/24/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	927.57
					Totals for 79369		1,014.28
79370	REMINGTON'S QUALITY	JPAP12	01/24/2019	FOOD AND GROCERY FOR SPED CLASSROOM MES 1ST QUARTER	SPECIAL EDUCATION FUND/GENERAL SUPPLIES/MULTI-CATEGORICAL	271900071	15.96
79370	REMINGTON'S QUALITY	JPAP12	01/24/2019	FOOD AND GROCERY FOR SPED CLASSROOM MES 1ST QUARTER	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900071	26.59
					Totals for 79370		42.55
79371	STRANG, PATTESON, RE	JPAP12	01/24/2019	LEGAL SERVICES	GENERAL FUND/PERSONAL SERVICES/LEGAL	0	7,722.00
					Totals for 79371		7,722.00
79372	THE OFFICE TECHNOLOG	JPAP12	01/24/2019	Lease for 70 Chromebooks $1,008.56/month	GENERAL FUND/TECHNOLOGY RELATED HARDWARE/ADMINISTRATIVE TECHNOLOGY SERV	8001900015	916.87
					Totals for 79372		916.87
79373	THEDACARE AT WORK	JPAP12	01/24/2019	DS RAPID 5 BUNDLED/PHYSICAL FREE FROM COMM DISEASE	GENERAL FUND/PERSONAL SERVICES/HEALTH SERVICES	0	149.00
					Totals for 79373		149.00
79374	TOWERGARDEN.COM	JPAP12	01/24/2019	SANDY CORDES PORTION REIMBURSED BY CESA FOR PERKINS GARDEN TOWER, LED LIGHT KIT, TG SUPPORT CAGE, TOWER GARDEN DOLLY	Special Revenue Trust Fund/NON-CAPITAL EQUIPMENT/AGRICULTURE	4001900195	470.55
79374	TOWERGARDEN.COM	JPAP12	01/24/2019	SANDY CORDES PORTION REIMBURSED BY CESA FOR PERKINS GARDEN TOWER, LED LIGHT KIT, TG SUPPORT CAGE, TOWER GARDEN DOLLY	Special Revenue Trust Fund/EQUIPMENT PURCHASE-ADDITION/AGRICULTURE	4001900195	525.00
					Totals for 79374		995.55
79375	WISCNET	JPAP12	01/24/2019	WISCNET FIREWALL SERVICE - CISCO ASA - WISCNET OWNED FOR JULY 1, 2018 THROUGH DECEMBER 31, 2018	GENERAL FUND/ON-LINE COMMUNICATIONS/ADMINISTRATIVE TECHNOLOGY SERV	0	1,250.00
					Totals for 79375		1,250.00
79389	ASHMAN, KYLE	jpap02	02/01/2019	BOYS JV OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	47.00
79389	ASHMAN, KYLE	021419	02/14/2019	BOYS JV OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-47.00
					Totals for 79389		0.00
79390	BURRY, MATT	jpap02	02/01/2019	BOYS VARSITY OFFICIAL ON 2/5/19 VS GRESHAM	GENERAL FUND/PERSONAL SERVICES/BOYS	0	70.00

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					BASKETBALL		
					Totals for 79390		70.00
79391	CHASE, THOMAS	jpap02	02/01/2019	BOYS JV OFFICIAL ON 2/5/19 VS GRESHAM	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	47.00
					Totals for 79391		47.00
79392	CRAIG, REEVE	jpap02	02/01/2019	BOYS VARSITY OFFICIAL ON 2/5/19 VS GRESHAM	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
					Totals for 79392		70.00
79393	CZARNECKI, LARRY	jpap02	02/01/2019	BOYS JV OFFICIAL ON 2/5/19 VS GRESHAM	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	47.00
					Totals for 79393		47.00
79394	DAYTON, KENNETH	jpap02	02/01/2019	MS GIRLS BASKETBALL OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
79394	DAYTON, KENNETH	021219	02/12/2019	MS GIRLS BASKETBALL OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	-60.00
					Totals for 79394		0.00
79395	KASSNER, STEVEN	jpap02	02/01/2019	BOYS VARSITY OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
79395	KASSNER, STEVEN	021219	02/12/2019	BOYS VARSITY OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-70.00
					Totals for 79395		0.00
79396	KJESETH, LUKE	jpap02	02/01/2019	MS GIRLS OFFICIAL ON 2/8/19 VS AMHERST	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
					Totals for 79396		60.00
79397	KJESETH, LUKE	jpap02	02/01/2019	BOYS JV OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	47.00
79397	KJESETH, LUKE	021419	02/14/2019	BOYS JV OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-47.00
					Totals for 79397		0.00
79398	NINEDORF, RYAN	jpap02	02/01/2019	BOYS VARSITY OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
79398	NINEDORF, RYAN	021219	02/12/2019	BOYS VARSITY OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS	0	-70.00

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					BASKETBALL		
					Totals for 79398		0.00
79399	SHAFER, ALEC	jpap02	02/01/2019	BOYS VARSITY OFFICIAL ON 2/5/19 VS GRESHAM	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
79399	SHAFER, ALEC	021219	02/12/2019	BOYS VARSITY OFFICIAL ON 2/5/19 VS GRESHAM	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-70.00
					Totals for 79399		0.00
79400	SIMONIS, JEROME	jpap02	02/01/2019	MS GIRLS BASKETBALL OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
79400	SIMONIS, JEROME	021219	02/12/2019	MS GIRLS BASKETBALL OFFICIAL ON 2/4/19 VS WITTENBERG-BIRNAMWOOD	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	-60.00
					Totals for 79400		0.00
79401	SIMONIS, JEROME	jpap02	02/01/2019	MS GIRLS OFFICIAL ON 2/8/19 VS AMHERST	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
					Totals for 79401		60.00
79402	ABRAHAM, TOM	jpap20	02/01/2019	AUSTIN ROHAN ALTO SAX SN064355A	GENERAL FUND/EQUIPMENT PURCHASE-ADDITION/IN STRUMENTAL MUSIC	4001900223	500.00
					Totals for 79402		500.00
79403	DALLMAN, WILLIAM	jpap20	02/01/2019	MS WRESTLING OFFICIAL ON 1/25/19	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
					Totals for 79403		60.00
79404	DELTA DENTAL-VISION	jpap20	02/01/2019	FEBRUARY 2019 VISION INSURANCE PREMIUMS	GENERAL FUND/SELF FUND-EMPLOYER SHARE PREMI	0	666.22
					Totals for 79404		666.22
79405	DYB, AUSTIN	jpap20	02/01/2019	GIRLS VARSITY BASKETBALL OFFICIAL ON 2/8/19 VS NORTHLAND LUTHERAN	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	70.00
					Totals for 79405		70.00
79406	EDUCATION ASSOCIATES	jpap20	02/01/2019	LIFE SKILLS SERIES SPECIAL ED	SPECIAL EDUCATION FUND/TECHNOLOGY SOFTWARE/MULTI-CATEG ORICAL	271900029	540.00
					Totals for 79406		540.00
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	LWJSHS MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	100.60
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	LWJSHS MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	111.30
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	LWJSHS MILK AND FOOD ORDER	FOOD SERVICE	0	117.97

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					FUND/FOOD/FOOD SERVICES		
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	LWJSHS MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	64.20
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	MES MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	202.80
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	MES MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	213.50
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	MES MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	57.80
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	MES MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	106.50
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	MES MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	127.90
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	MES MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	206.03
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	MES MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	207.10
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	LWJSHS MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	57.80
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	LWJSHS MILK ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	80.00
79407	ENGELHARDT DAIRY OF	jpap02	02/01/2019	LWJSHS MILK AND FOOD ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	139.14
					Totals for 79407		1,792.64
79408	ISLAND MUSIC INC	jpap20	02/01/2019	AUSTIN ROHAN INSTRUMENT REPAIRS	GENERAL FUND/PERSONAL SERVICES/INSTRUMENTAL MUSIC	4001900222	100.00
79408	ISLAND MUSIC INC	jpap20	02/01/2019	AUSTIN ROHAN AMP REPAIR	GENERAL FUND/PERSONAL SERVICES/INSTRUMENTAL MUSIC	4001900220	40.00
					Totals for 79408		140.00
79409	KEY, JOHN	jpap20	02/01/2019	GIRLS VARSITY BASKETBALL OFFICIAL ON 2/8/19 VS NORTHLAND LUTHERAN	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	70.00
					Totals for 79409		70.00
79410	KNOPP, KEVIN	jpap20	02/01/2019	AUSTIN ROHAN TUNE YAMAHA PIANOS	GENERAL FUND/PERSONAL SERVICES/INSTRUMENTAL MUSIC	4001900221	182.40
					Totals for 79410		182.40
79411	MARQUARDT, TYLER	jpap20	02/01/2019	GIRLS VARSITY BASKETBALL	GENERAL	0	70.00

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				OFFICIAL ON 2/8/19 VS NORTHLAND LUTHERAN	FUND/PERSONAL SERVICES/GIRLS BASKETBALL		
						Totals for 79411	70.00
79412	OFFICE DEPOT	jpap20	02/01/2019	BATTERIES	GENERAL FUND/GENERAL SUPPLIES/OFFICE OF THE PRINCIPAL	0	30.54
						Totals for 79412	30.54
79413	PAN-O-GOLD BAKING	jpap02	02/01/2019	BREAD ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	80.32
79413	PAN-O-GOLD BAKING	jpap02	02/01/2019	BREAD ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	123.65
79413	PAN-O-GOLD BAKING	jpap02	02/01/2019	BREAD ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	201.90
79413	PAN-O-GOLD BAKING	jpap02	02/01/2019	BREAD ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	141.90
						Totals for 79413	547.77
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	COMMODITY ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	14.50
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD SUPPLIES	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	637.56
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	COMMODITY ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	30.45
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	COMMODITY ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	23.20
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	COMMODITY ORDER	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	44.95
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/CENTRAL SUPPLY ROOM/FOOD SERVICES	0	27.73
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	833.82
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD SUPPLIES	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	338.55
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/CENTRAL SUPPLY ROOM/FOOD SERVICES	0	35.01
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	808.83
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/CENTRAL SUPPLY ROOM/FOOD SERVICES	0	99.85
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE	0	978.24

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					FUND/FOOD/FOOD SERVICES		
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD SUPPLIES	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	296.91
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD SUPPLIES	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	279.55
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/CENTRAL SUPPLY ROOM/FOOD SERVICES	0	140.55
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	601.48
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/CENTRAL SUPPLY ROOM/FOOD SERVICES	0	85.42
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	565.62
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/CENTRAL SUPPLY ROOM/FOOD SERVICES	0	95.41
79414	REINHART FOOD SERVIC	jpap02	02/01/2019	FOOD AND NON FOOD SUPPLIES	FOOD SERVICE FUND/FOOD/FOOD SERVICES	0	698.47
					Totals for 79414		6,636.10
79415	RUDIS	jpap20	02/01/2019	UNIFORMS AND GEAR	GENERAL FUND/APPAREL (Instructional only)/ATHLETIC DIRECTOR	271900062	2,797.86
					Totals for 79415		2,797.86
79416	SPORTSENGINE	jpap20	02/01/2019	TRACKWRESTLING	GENERAL FUND/PERSONAL SERVICES/BOYS WRESTLING	0	100.00
					Totals for 79416		100.00
79417	TOLEDO P.E. SUPPLY C	jpap20	02/01/2019	KEVIN MURPHY EQUIPMENT	GENERAL FUND/NON-CAPITAL EQUIPMENT/PHYSICAL EDUCATION	4001900213	75.89
					Totals for 79417		75.89
79418	WCA GROUP HEALTH TRU	jpap20	02/01/2019	FEBRUARY 2019 HEALTH INSURANCE PREMIUMS	GENERAL FUND/WEA TRUST EFF 090115	0	94,406.00
					Totals for 79418		94,406.00
79419	CANDELL, THOMAS	JPAP20	02/06/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/7/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
79419	CANDELL, THOMAS	021219	02/12/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/7/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-70.00
					Totals for 79419		0.00
79420	CZARNECKI, LARRY	jpap20	02/06/2019	BOYS VARSITY BASKETBALL	GENERAL	0	70.00

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				OFFICIAL ON 2/5/18 VS GRESHAM. (FILLED IN FOR AN OFFICIAL THAT WAS A NO SHOW.)	FUND/PERSONAL SERVICES/BOYS BASKETBALL		
					Totals for 79420		70.00
79421	GAJEWSKI, LUKE	JPAP20	02/06/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/7/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
79421	GAJEWSKI, LUKE	021219	02/12/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/7/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-70.00
					Totals for 79421		0.00
79422	MAJERUS, JON	JPAP20	02/06/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/7/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
79422	MAJERUS, JON	021219	02/12/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/7/19 VS WITTENBERG-BIRNAMWOOD	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	-70.00
					Totals for 79422		0.00
79423	ALMOND-BANCROFT SCHO	JPAP20	02/08/2019	TRACY KONKOL HS FORENSICS	GENERAL FUND/DUES & FEES MEMBRSHIP/FT FEES/CO-CURRICULAR ACTIVITIES	4001900235	37.00
					Totals for 79423		37.00
79424	AMAZON CAPITAL SERVI	JPAP20	02/08/2019	Equipment	GENERAL FUND/NON-CAPITAL EQUIPMENT/ADMINISTRATIVE TECHNOLOGY SERV	1011900073	137.94
					Totals for 79424		137.94
79425	BUMPER TO BUMPER AUT	JPAP20	02/08/2019	WIPER BLADES FOR 2005 FORD VAN	GENERAL FUND/NON-CAPITAL EQUIPMENT/OPERATION	0	11.98
					Totals for 79425		11.98
79426	CASH	JPAP20	02/08/2019	REIMBURSE LWHS PETTY CASH	GENERAL FUND/STUDENT FEES/YEARBOOK FEE	0	83.50
79426	CASH	JPAP20	02/08/2019	REIMBURSE LWHS PETTY CASH	GENERAL FUND/GENERAL SUPPLIES/OPERATION	0	67.95
79426	CASH	JPAP20	02/08/2019	REIMBURSE LWHS PETTY CASH	GENERAL FUND/GENERAL SUPPLIES/OFFICE OF THE PRINCIPAL	0	12.82
79426	CASH	JPAP20	02/08/2019	REIMBURSE LWHS PETTY CASH	GENERAL FUND/POSTAGE/CARTAGE /CENTRAL SERVICES	0	2.10
79426	CASH	JPAP20	02/08/2019	REIMBURSE MES PETTY CASH	GENERAL FUND/GENERAL SUPPLIES/OFFICE OF THE PRINCIPAL	0	51.97
79426	CASH	JPAP20	02/08/2019	REIMBURSE MES PETTY CASH	GENERAL FUND/POSTAGE/CARTAGE	0	19.80

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					/CENTRAL SERVICES		
					Totals for 79426		238.14
79427	CESA 6-CONFERENCE RE	JPAP20	02/08/2019	1/2 DAY DATA ANALYSIS WITH STAFF - 12/18/18	GENERAL FUND/TRANSFER TO CESA/INSTRUCTIONAL STAFF TRAINING	0	600.00
					Totals for 79427		600.00
79428	CINTAS FIRE PROTECTI	JPAP20	02/08/2019	INSPECTION MES	GENERAL FUND/CLEANING SERVICES/EQUIPMENT	0	310.25
79428	CINTAS FIRE PROTECTI	JPAP20	02/08/2019	INSPECTION LWHS	GENERAL FUND/CLEANING SERVICES/EQUIPMENT	0	190.08
					Totals for 79428		500.33
79429	CZARNECKI, LARRY	JPAP20	02/08/2019	GIRLS JV BASKETBALL OFFICIAL ON 2/8/19 VS NORTHLAND LUTHERAN	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	47.00
					Totals for 79429		47.00
79430	EIKENBARY, WANDA	JPAP20	02/08/2019	ELLEN CHRISTENSEN DECEMBER CONCERT ACCOMPANIST	GENERAL FUND/PERSONAL SERVICES/VOCAL MUSIC	4001900239	180.00
					Totals for 79430		180.00
79431	ERICKSON & ASSOCIATE	JPAP20	02/08/2019	FINAL BILLING FOR AUDIT OF FINANCIAL STATEMENTS FOR YEAR ENDED 6/30/18	GENERAL FUND/PERSONAL SERVICES/AUDIT	0	8,600.00
					Totals for 79431		8,600.00
79432	FLUSH DRAIN & SEWER	JPAP20	02/08/2019	LWHS - WATERJET SEWER LINE BOTH WAYS	GENERAL FUND/REPAIR & MAINTENANCE SERVICES/BUILDINGS	0	420.00
					Totals for 79432		420.00
79433	HEID MUSIC CO, INC.	JPAP20	02/08/2019	AUSTIN ROHAN BAND	GENERAL FUND/PERSONAL SERVICES/INSTRUMENTAL MUSIC	4001900233	79.70
79433	HEID MUSIC CO, INC.	JPAP20	02/08/2019	AUSTIN ROHAN BAND	GENERAL FUND/PERSONAL SERVICES/INSTRUMENTAL MUSIC	4001900232	130.96
79433	HEID MUSIC CO, INC.	JPAP20	02/08/2019	AUSTIN ROHAN BAND	GENERAL FUND/PERSONAL SERVICES/INSTRUMENTAL MUSIC	4001900234	137.00
					Totals for 79433		347.66
79434	HILTON MILWAUKEE CIT	JPAP20	02/08/2019	WASB CONVENTION ROOMS: 2 BOARD MEMBERS, 3 ADMINISTRATORS - JAN 2019	GENERAL FUND/EMPLOYEE TRAVEL/BOARD MEMBERS	5001900011	1,158.00
79434	HILTON MILWAUKEE CIT	JPAP20	02/08/2019	WASB CONVENTION ROOMS: 2 BOARD MEMBERS, 3 ADMINISTRATORS - JAN 2019	GENERAL FUND/EMPLOYEE TRAVEL/DISTRICT ADMINISTRATION	5001900011	1,849.00
					Totals for 79434		3,007.00
79435	INTELLICORP RECORDS,	JPAP20	02/08/2019	OUT OF STATE BACKGROUND CHECK	GENERAL FUND/PERSONAL	0	50.00

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					SERVICES/GENERAL ADMINISTRATION		
					Totals for 79435		50.00
79436	KNOPP, KEVIN	JPAP20	02/08/2019	TUNE YAMAHA AT MES FOR SHELLEY RADLEY	GENERAL FUND/REPAIR & MAINTENANCE SERVICES/INSTRUCTIONAL EQUIPMENT	0	91.20
					Totals for 79436		91.20
79437	MID-AMERICAN RESEARC	JPAP20	02/08/2019	MES CUSTODIAL SUPPLIES	GENERAL FUND/GENERAL SUPPLIES/OPERATION	0	414.20
					Totals for 79437		414.20
79438	NORTH EASTERN WISCON	JPAP20	02/08/2019	Open PO for OT bills	SPECIAL EDUCATION FUND/PERSONAL SERVICES/OCCUPATIONAL THERAPY	271900095	2,876.80
					Totals for 79438		2,876.80
79439	NASSCO, INC	JPAP20	02/08/2019	MES CUSTODIAL SUPPLIES	GENERAL FUND/GENERAL SUPPLIES/OPERATION	0	46.26
79439	NASSCO, INC	JPAP20	02/08/2019	LWHS CUSTODIAL SUPPLIES	GENERAL FUND/GENERAL SUPPLIES/OPERATION	0	143.77
79439	NASSCO, INC	JPAP20	02/08/2019	MES CUSTODIAL SUPPLIES & A VACUUM	GENERAL FUND/EQUIPMENT PURCHASE REPLACEMENT/OPERATION	0	454.06
79439	NASSCO, INC	JPAP20	02/08/2019	MES CUSTODIAL SUPPLIES & A VACUUM	GENERAL FUND/GENERAL SUPPLIES/OPERATION	0	33.58
79439	NASSCO, INC	JPAP20	02/08/2019	MES CUSTODIAL SUPPLIES	GENERAL FUND/GENERAL SUPPLIES/OPERATION	0	1,008.13
79439	NASSCO, INC	JPAP20	02/08/2019	LWHS CUSTODIAL SUPPLIES	GENERAL FUND/GENERAL SUPPLIES/OPERATION	0	127.68
					Totals for 79439		1,813.48
79440	NETWORK PHOTOGRAPHY	JPAP20	02/08/2019	CLASS COMPOSITE PICTURE - MR. CHRISTENSEN	GENERAL FUND/REFUND OF PRIOR YEAR EXPENSE/DISTRICT WIDE	0	50.00
					Totals for 79440		50.00
79441	OFFICE DEPOT	JPAP20	02/08/2019	PLATES FOR THE GALLERY WALK	GENERAL FUND/GENERAL SUPPLIES/OFFICE OF SUPERINTENDENT	0	22.44
					Totals for 79441		22.44
79442	PATRI, MITCHELL	JPAP20	02/08/2019	TRACK WRESTLING MANAGER - NEMSWC MEET @ MANAWA 1/21/19	GENERAL FUND/PERSONAL SERVICES/BOYS WRESTLING	0	250.00
					Totals for 79442		250.00
79443	PITNEY BOWES INC	JPAP20	02/08/2019	RED INK CARTRIDGE	GENERAL FUND/POSTAGE/CARTAGE /CENTRAL SERVICES	0	339.96

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					Totals for 79443		339.96
79444	REMINGTON'S QUALITY	JPAP20	02/08/2019	SPED GROCERY CONTINGENCY FOR 1ST QUARTER	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900076	6.70
79444	REMINGTON'S QUALITY	JPAP20	02/08/2019	SPED GROCERY CONTINGENCY FOR 1ST QUARTER	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900076	6.26
79444	REMINGTON'S QUALITY	JPAP20	02/08/2019	SPED GROCERY CONTINGENCY FOR 1ST QUARTER	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900076	12.84
79444	REMINGTON'S QUALITY	JPAP20	02/08/2019	CREDIT ON PREVIOUS PURCHASES THAT HAD BEEN PAID WITH A GIFT CARD	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900076	-3.53
79444	REMINGTON'S QUALITY	JPAP20	02/08/2019	FOOD AND GROCERY FOR SPED CLASSROOM MES 1ST QUARTER	SPECIAL EDUCATION FUND/GENERAL SUPPLIES/MULTI-CATEGORICAL	271900071	0.00
79444	REMINGTON'S QUALITY	JPAP20	02/08/2019	FOOD AND GROCERY FOR SPED CLASSROOM MES 1ST QUARTER	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900071	4.97
					Totals for 79444		27.24
79445	RIO GRANDE	JPAP20	02/08/2019	NANCY ZABLER SUPPLIES	GENERAL FUND/GENERAL SUPPLIES/ART	4001900201	28.00
					Totals for 79445		28.00
79446	ROSHOLT SCHOOL DISTR	JPAP20	02/08/2019	TRACY KONKOL HS FORENSICS	GENERAL FUND/DUES & FEES MEMBRSHIP/FT FEES/CO-CURRICULAR ACTIVITIES	4001900238	42.00
					Totals for 79446		42.00
79447	SERVICE MOTOR COMPAN	JPAP20	02/08/2019	BRUSH SET FOR THE KUBOTA	GENERAL FUND/EQUIPMENT PURCHASE REPLACEMENT/OPERATION	0	467.22
					Totals for 79447		467.22
79448	SIMONIS, JEROME	JPAP20	02/08/2019	JV GIRLS BASKETBALL OFFICIAL ON 2/8/19 VS NORTHLAND LUTHERAN	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	47.00
					Totals for 79448		47.00
79449	SOLARUS	JPAP20	02/08/2019	PAES lab telephone and internet	SPECIAL EDUCATION FUND/COMMUNICATION/PUBLIC INFORMATION	271900088	148.08
79449	SOLARUS	JPAP20	02/08/2019	Telephone bill for all buildings for 6 months	GENERAL FUND/TELEPHONE AND TELEGRAPH/CENTRAL SERVICES	8001900013	773.15
79449	SOLARUS	JPAP20	02/08/2019	Telephone bill for all buildings for 6 months	GENERAL FUND/TELEPHONE AND TELEGRAPH/CENTRAL SERVICES	8001900013	744.55
79449	SOLARUS	JPAP20	02/08/2019	Telephone bill for all buildings for 6 months	GENERAL FUND/TELEPHONE AND TELEGRAPH/CENTRAL SERVICES	8001900013	368.03

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					Totals for 79449		2,033.81
79450	STANDARD INSURANCE C	JPAP20	02/08/2019	LIFE/STD & LTD PREMIUMS	GENERAL FUND/LIFE INSURANCE PAYABLE	0	1,171.58
79450	STANDARD INSURANCE C	JPAP20	02/08/2019	LIFE/STD & LTD PREMIUMS	GENERAL FUND/LTD INS PAYABLE	0	970.19
79450	STANDARD INSURANCE C	JPAP20	02/08/2019	LIFE/STD & LTD PREMIUMS	GENERAL FUND/STD INS PAYABLE	0	366.01
					Totals for 79450		2,507.78
79451	SUEHS MOTORS, INC.	JPAP20	02/08/2019	OIL CHANGE - 2012 RED DODGE CARAVAN	FOOD SERVICE FUND/REPAIR & MAINTENANCE SERVICES/VEHICLE MAINT/NOT PUPIL TRANS	0	32.59
79451	SUEHS MOTORS, INC.	JPAP20	02/08/2019	OIL CHANGE - 2005 WHITE SILVERADO	GENERAL FUND/REPAIR & MAINTENANCE SERVICES/VEHICLE MAINT/NOT PUPIL TRANS	0	31.19
79451	SUEHS MOTORS, INC.	JPAP20	02/08/2019	OIL CHANGE - RED 2005 WAGON	GENERAL FUND/REPAIR & MAINTENANCE SERVICES/VEHICLE MAINT/NOT PUPIL TRANS	0	32.15
					Totals for 79451		95.93
79452	THEDACARE AT WORK	JPAP20	02/08/2019	DS RAPID 5 BUNDLED/PHYSICAL FREE FROM COMM DISEASE - C. JOHNSON	GENERAL FUND/PERSONAL SERVICES/HEALTH SERVICES	0	149.00
					Totals for 79452		149.00
79453	ULTRACOM WIRELESS CO	JPAP20	02/08/2019	TEKYA SCREEN PROTECTOR PELICAN CASE	GENERAL FUND/TELEPHONE AND TELEGRAPH/CENTRAL SERVICES	0	59.98
					Totals for 79453		59.98
79454	US CELLULAR	JPAP20	02/08/2019	CELL PHONES	GENERAL FUND/TELEPHONE AND TELEGRAPH/CENTRAL SERVICES	0	350.40
					Totals for 79454		350.40
79455	WI DEPT OF JUSTICE	JPAP20	02/08/2019	CRIMINAL BACKGROUND CHECKS WIS DEPT OF JUSTICE - (6 @ 7.00)	GENERAL FUND/PERSONAL SERVICES/GENERAL ADMINISTRATION	0	42.00
					Totals for 79455		42.00
79456	WISCONSIN SCHOOL MUS	JPAP20	02/08/2019	AUSTIN ROHAN WSMA	GENERAL FUND/DUES & FEES MEMBRSHIP/FT FEES/INSTRUMENTAL MUSIC	601900115	411.40
79456	WISCONSIN SCHOOL MUS	JPAP20	02/08/2019	ELLEN CHRISTENSEN FESTIVAL REGISTRATION	GENERAL FUND/DUES & FEES MEMBRSHIP/FT FEES/VOCAL MUSIC	601900116	415.65
					Totals for 79456		827.05
79457	WISCONSIN FOOTBALL C	JPAP20	02/08/2019	2019 WFCA MEMBERSHIP (WISCONSIN FOOTBALL COACHING ASSOCIATION) DUES AND CLINICS	GENERAL FUND/EMPLOYEE TRAVEL/BOYS	4001900241	500.00

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					FOOTBALL		
79457	WISCONSIN FOOTBALL C	JPAP20	02/08/2019	2019 WFCA MEMBERSHIP (WISCONSIN FOOTBALL COACHING ASSOCIATION) DUES AND CLINICS	GENERAL FUND/EMPLOYEE TRAVEL/GENERAL ATHLETICS	4001900241	45.00
						Totals for 79457	545.00
79458	BRINEY, TYLER	JPOFF2	02/08/2019	GIRLS VARSITY BASKETBALL OFFICIAL ON 2/15/19 VS WISCONSIN VALLEY LUTHERAN	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	70.00
						Totals for 79458	70.00
79459	BRINEY, TYLER	JPOFF2	02/08/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/15/19 VS WISCONSIN VALLEY LUTHERAN	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
						Totals for 79459	70.00
79460	BROCKMAN, JAMES	JPOFF2	02/08/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/15/19 VS WISCONSIN VALLEY LUTHERAN	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
						Totals for 79460	70.00
79461	ELBE, JOSEPH	JPOFF2	02/08/2019	GIRLS VARSITY BASKETBALL OFFICIAL ON 2/15/19 VS WISCONSIN VALLEY LUTHERAN	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	70.00
						Totals for 79461	70.00
79462	ELBE, JOSEPH	JPOFF2	02/08/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/15/19 VS WISCONSIN VALLEY LUTHERAN	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
						Totals for 79462	70.00
79463	FEUCHT, JASON	JPOFF2	02/08/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/11/19 VS TIGERTON	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
						Totals for 79463	70.00
79464	HAUTALA, GABE	JPOFF2	02/08/2019	GIRLS VARSITY BASKETBALL OFFICIAL ON 2/15/19 VS WISCONSIN VALLEY LUTHERAN	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	70.00
						Totals for 79464	70.00
79465	KJESETH, LUKE	JPOFF2	02/08/2019	BOYS JV BASKETBALL OFFICIAL ON 2/11/19 VS TIGERTON	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	47.00
						Totals for 79465	47.00
79466	KJESETH, LUKE	JPOFF2	02/08/2019	GIRLS MS BASKETBALL OFFICIAL ON 2/14/19 VS WEYAUWEGA-FREMONT	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
						Totals for 79466	60.00
79467	KOSCIUK, GREGORY	JPOFF2	02/08/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/11/19 VS TIGERTON	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
						Totals for 79467	70.00

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79468	LOWNEY, CLAYTON	JPOFF2	02/08/2019	GIRLS MS BASKETBALL OFFICIAL ON 2/12/19 VS IOLA-SCANDINAVIA	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
79468	LOWNEY, CLAYTON	021419	02/14/2019	GIRLS MS BASKETBALL OFFICIAL ON 2/12/19 VS IOLA-SCANDINAVIA	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	-60.00
						Totals for 79468	0.00
79469	SIMONIS, JEROME	JPOFF2	02/08/2019	BOYS JV BASKETBALL OFFICIAL ON 2/11/19 VS TIGERTON	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	47.00
						Totals for 79469	47.00
79470	SIMONIS, JEROME	JPOFF2	02/08/2019	GIRLS MS BASKETBALL OFFICIAL ON 2/12/19 VS IOLA-SCANDINAVIA	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
79470	SIMONIS, JEROME	021419	02/14/2019	GIRLS MS BASKETBALL OFFICIAL ON 2/12/19 VS IOLA-SCANDINAVIA	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	-60.00
						Totals for 79470	0.00
79471	SIMONIS, JEROME	JPOFF2	02/08/2019	GIRLS MS BASKETBALL OFFICIAL ON 2/14/19 VS WEYAUWEGA-FREMONT	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
						Totals for 79471	60.00
79472	SLEEPER, DYLAN	JPOFF2	02/08/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/11/19 VS TIGERTON	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
						Totals for 79472	70.00
79473	RIO GRANDE	jpap20	02/08/2019	NANCY ZABLER SUPPLIES	GENERAL FUND/GENERAL SUPPLIES/ART	4001900201	585.77
						Totals for 79473	585.77
79474	ASHMAN, KYLE	JPAP21	02/14/2019	MS GIRLS BASKETBALL OFFICIAL ON 2/18/19 VS TIGERTON	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
						Totals for 79474	60.00
79475	CZARNECKI, LARRY	JPAP21	02/14/2019	BOYS JV BASKETBALL OFFICIAL ON 2/21/19 VS MARION	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	47.00
						Totals for 79475	47.00
79476	DIPASQUALE, JOHN	JPAP21	02/14/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/21/19 VS MARION	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
						Totals for 79476	70.00
79477	HAMMEL, STUART	JPAP21	02/14/2019	GIRLS VARSITY BASKETBALL OFFICIAL ON 2/19/19 VS COLEMAN	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	133.76

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					Totals for 79477		133.76
79478	MATUSZEWSKI, ROBERT	JPAP21	02/14/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/21/19 VS MARION	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
					Totals for 79478		70.00
79479	MCQUILLAN, SHAWN	JPAP21	02/14/2019	BOYS VARSITY BASKETBALL OFFICIAL ON 2/21/19 VS MARION	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	70.00
					Totals for 79479		70.00
79480	PFLUGER, MATTHEW	JPAP21	02/14/2019	GIRLS VARSITY BASKETBALL OFFICIAL ON 2/19/19 VS COLEMAN	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	65.00
					Totals for 79480		65.00
79481	SILVER LAKE LANES	JPAP21	02/14/2019	CWC ALL-CONFERENCE BANQUET	GENERAL FUND/PERSONAL SERVICES/ATHLETIC DIRECTOR	4001900247	60.00
					Totals for 79481		60.00
79482	SIMONIS, JEROME	JPAP21	02/14/2019	MS GIRLS BASKETBALL OFFICIAL ON 2/18/19 VS TIGERTON	COMMUNITY SERVICE FUND/PERSONAL SERVICES/OTHER COMMUNITY SERVICES	0	60.00
					Totals for 79482		60.00
79483	SIMONIS, JEROME	JPAP21	02/14/2019	BOYS JV BASKETBALL OFFICIAL ON 2/21/19 VS MARION	GENERAL FUND/PERSONAL SERVICES/BOYS BASKETBALL	0	47.00
					Totals for 79483		47.00
79484	UITENBROEK, JUSTIN	JPAP21	02/14/2019	GIRLS VARSITY BASKETBALL OFFICIAL ON 2/19/19 VS COLEMAN	GENERAL FUND/PERSONAL SERVICES/GIRLS BASKETBALL	0	65.00
					Totals for 79484		65.00
79485	BUREAU OF EDUCATION	JPAP21	02/15/2019	POPPY/STILEN SEMINAR	GENERAL FUND/PERSONAL SERVICES/INSTRUCTIONAL STAFF TRAINING	1011900065	538.00
					Totals for 79485		538.00
79486	CINTAS CORPORATION L	JPAP21	02/15/2019	CUSTODIAL SUPPLIES	FOOD SERVICE FUND/CLEANING SERVICES/OPERATION	0	21.70
79486	CINTAS CORPORATION L	JPAP21	02/15/2019	CUSTODIAL SUPPLIES	GENERAL FUND/CLEANING SERVICES/OPERATION	0	21.10
79486	CINTAS CORPORATION L	JPAP21	02/15/2019	CUSTODIAL SUPPLIES	GENERAL FUND/CLEANING SERVICES/OPERATION	0	171.15
79486	CINTAS CORPORATION L	JPAP21	02/15/2019	CUSTODIAL SUPPLIES	SPECIAL EDUCATION FUND/CLEANING SERVICES/OPERATION	0	11.70
79486	CINTAS CORPORATION L	JPAP21	02/15/2019	CUSTODIAL SUPPLIES	FOOD SERVICE FUND/CLEANING SERVICES/OPERATION	0	21.70

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79486	CINTAS CORPORATION L	JPAP21	02/15/2019	CUSTODIAL SUPPLIES	GENERAL FUND/CLEANING SERVICES/OPERATION	0	21.10
79486	CINTAS CORPORATION L	JPAP21	02/15/2019	CUSTODIAL SUPPLIES	GENERAL FUND/CLEANING SERVICES/OPERATION	0	171.15
79486	CINTAS CORPORATION L	JPAP21	02/15/2019	CUSTODIAL SUPPLIES	SPECIAL EDUCATION FUND/CLEANING SERVICES/OPERATION	0	11.70
					Totals for 79486		451.30
79487	CORVUS INDUSTRIES, L	JPAP21	02/15/2019	BLEACHER WORK	GENERAL FUND/REPAIR & MAINTENANCE SERVICES	0	1,640.00
79487	CORVUS INDUSTRIES, L	JPAP21	02/15/2019	BLEACHER WORK	GENERAL FUND/REPAIR & MAINTENANCE SERVICES	0	2,843.00
					Totals for 79487		4,483.00
79488	(CWC) CENTRAL WI CON	JPAP21	02/15/2019	PER DISTRICT FEE FOR QUIZ BOWL COORDINATOR STIPEND	GENERAL FUND/DUES & FEES MEMBRSHIP/FT FEES/CO-CURRICULAR ACTIVITIES	0	80.00
					Totals for 79488		80.00
79489	ENGEBRETSON PLUMBING	JPAP21	02/15/2019	LABOR FOR THE SEWER GAS SMELL AT LWHS	GENERAL FUND/REPAIR & MAINTENANCE SERVICES/BUILDINGS	0	110.00
					Totals for 79489		110.00
79490	GRAINGER	JPAP21	02/15/2019	MIKE THOMACK BUILDING AND GROUNDS	GENERAL FUND/GENERAL SUPPLIES/OPERATION	4001900240	53.16
					Totals for 79490		53.16
79491	HEID MUSIC CO, INC.	JPAP21	02/15/2019	AUSTIN ROHAN BAND	GENERAL FUND/APPAREL (Instructional only)/INSTRUMENTAL MUSIC	4001900228	1,297.50
79491	HEID MUSIC CO, INC.	JPAP21	02/15/2019	AUSTIN ROHAN BAND	GENERAL FUND/SHEET MUSIC/INSTRUMENTAL MUSIC	4001900231	23.56
79491	HEID MUSIC CO, INC.	JPAP21	02/15/2019	AUSTIN ROHAN BAND	GENERAL FUND/SHEET MUSIC/INSTRUMENTAL MUSIC	4001900231	3.96
79491	HEID MUSIC CO, INC.	JPAP21	02/15/2019	AUSTIN ROHAN BAND	GENERAL FUND/SHEET MUSIC/INSTRUMENTAL MUSIC	4001900231	87.96
79491	HEID MUSIC CO, INC.	JPAP21	02/15/2019	AUSTIN ROHAN BAND	GENERAL FUND/SHEET MUSIC/INSTRUMENTAL MUSIC	4001900231	29.51
79491	HEID MUSIC CO, INC.	JPAP21	02/15/2019	AUSTIN ROHAN BAND	GENERAL FUND/SHEET MUSIC/INSTRUMENTAL MUSIC	4001900231	13.58
79491	HEID MUSIC CO, INC.	JPAP21	02/15/2019	AUSTIN ROHAN BAND	GENERAL FUND/SHEET MUSIC/INSTRUMENTAL MUSIC	4001900231	88.00
					Totals for 79491		1,544.07
79492	INTEGRATED SYSTEMS C	JPAP21	02/15/2019	HOSTING SERVICE - MARCH 2019	GENERAL FUND/TECH REPAIRS AND	0	360.00

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					MAINTENANCE/ADMINISTRATIVE TECHNOLOGY SERV		
					Totals for 79492		360.00
79493	JOSTENS INC.	JPAP21	02/15/2019	ANDREA HRABAN, MS YEARBOOK	GENERAL FUND/GENERAL SUPPLIES/YEARBOOK FEE	0	560.00
79493	JOSTENS INC.	JPAP21	02/15/2019	ANDREA HRABAN- YEARBOOK PAYMENT (2018-19)	GENERAL FUND/GENERAL SUPPLIES/YEARBOOK FEE	0	2,710.00
					Totals for 79493		3,270.00
79494	KEVA PLANKS EDUCATIO	JPAP21	02/15/2019	1000 KEVA BIN	Special Revenue Trust Fund/EQUIPMENT PURCHASE-ADDITION/LIBRARY MEDIA	1011900076	375.00
					Totals for 79494		375.00
79495	MACGILL DISCOUNT MED	JPAP21	02/15/2019	HEALTH ROOM SUPPLIES	GENERAL FUND/GENERAL SUPPLIES/HEALTH	1011900075	204.39
					Totals for 79495		204.39
79496	MULTI MEDIA CHANNELS	JPAP21	02/15/2019	NOVEMBER MTG MINUTES REFERENDUM NOTICE	GENERAL FUND/PRINTING AND BINDING/GENERAL ADMINISTRATION	0	271.28
					Totals for 79496		271.28
79497	OFFICE DEPOT	JPAP21	02/15/2019	SUPPLIES - GALLERY WALKS	GENERAL FUND/GENERAL SUPPLIES/OFFICE OF SUPERINTENDENT	0	11.28
					Totals for 79497		11.28
79498	REMINGTON'S QUALITY	JPAP21	02/15/2019	SPED GROCERY CONTINGENCY FOR 1ST QUARTER	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900076	4.13
79498	REMINGTON'S QUALITY	JPAP21	02/15/2019	SPED GROCERY CONTINGENCY FOR 1ST QUARTER	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900076	4.34
79498	REMINGTON'S QUALITY	JPAP21	02/15/2019	SPED GROCERY CONTINGENCY FOR 1ST QUARTER	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900076	15.40
79498	REMINGTON'S QUALITY	JPAP21	02/15/2019	SPED GROCERY CONTINGENCY FOR 1ST QUARTER	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900076	2.99
79498	REMINGTON'S QUALITY	JPAP21	02/15/2019	SPED GROCERY CONTINGENCY FOR 1ST QUARTER	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900076	4.26
79498	REMINGTON'S QUALITY	JPAP21	02/15/2019	SPED GROCERY CONTINGENCY FOR 1ST QUARTER	SPECIAL EDUCATION FUND/FOOD/MULTI-CATEGORICAL	271900076	4.53
79498	REMINGTON'S QUALITY	JPAP21	02/15/2019	MES CUSTODIAL SUPPLIES	GENERAL FUND/GENERAL SUPPLIES/OPERATION	0	17.96
					Totals for 79498		53.61
79499	SCHOOL PERCEPTIONS L	JPAP21	02/15/2019	COMMUNITY SURVEY RESULTS	GENERAL	0	1,606.55

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				REPORT/DATA ENTRY FOR SURVEYS/ACTUAL POSTAGE EXPENSE	FUND/PERSONAL SERVICES/OFFICE OF SUPERINTENDENT		
					Totals for 79499		1,606.55
79500	SCHOOL SPECIALTY INC	JPAP21	02/15/2019	CARRIE KOEHN SUPPLY CENTRAL	GENERAL FUND/CENTRAL SUPPLY ROOM/UNDIFFERENTIATED CURRICULUM	4001900236	35.25
					Totals for 79500		35.25
79501	UNEMPLOYMENT INSURAN	JPAP21	02/15/2019	UNEMPLOYMENT	GENERAL FUND/PERSONAL SERVICES/GENERAL ADMINISTRATION	0	505.01
					Totals for 79501		505.01
79502	WEX BANK - GLOBAL FL	JPAP21	02/15/2019	ALL OTHER FUEL	GENERAL FUND/FUEL-VEHICLE OPERATION/REGULAR	0	84.11
					Totals for 79502		84.11
181900032	POPPY, MICHELLE	JPAP11	01/18/2019	MILEAGE REIMBURSEMENT TO GUIDED READING CONFERENCE ON 12/12/18	GENERAL FUND/EMPLOYEE TRAVEL/INSTRUCTIONAL STAFF TRAINING	1011900065	38.15
					Totals for 181900032		38.15
181900033	UJAZDOWSKI, LUANNE	JPAP11	01/18/2019	REIMBURSE FOR PBIS INCENTIVES - 1ST GRADE	GENERAL FUND/GENERAL SUPPLIES/OFFICE OF THE PRINCIPAL	0	30.50
					Totals for 181900033		30.50
181900034	SITTER, KATHRYN	JPAP20	02/08/2019	PARTIAL REIMBURSEMENT FOR TUITION	SPECIAL EDUCATION FUND/PERSONAL SERVICES/BOARD OF EDUCATION	0	3,750.00
					Totals for 181900034		3,750.00
181900035	THOMACK, HOWARD	JPAP20	02/08/2019	REIMBURSE FOR KUBOTA BRUSHES/PARTS	GENERAL FUND/EMPLOYEE TRAVEL/OPERATION	0	31.32
					Totals for 181900035		31.32
181900036	OPPOR, MELANIE	JPAP21	02/15/2019	MILEAGE REIMBURSEMENT	GENERAL FUND/EMPLOYEE TRAVEL/OFFICE OF SUPERINTENDENT	0	56.84
					Totals for 181900036		56.84
201800138	WISCONSIN RETIREMENT	R9	12/15/2018	Payroll accrual	GENERAL FUND/WI RETIREMENT FUND	0	9,312.51
201800138	WISCONSIN RETIREMENT	R9	12/15/2018	Payroll accrual	SPECIAL EDUCATION FUND/WI RETIREMENT FUND	0	1,362.42
201800138	WISCONSIN RETIREMENT	R9	12/15/2018	Payroll accrual	FOOD SERVICE FUND/WI RETIREMENT FUND	0	330.58
201800138	WISCONSIN RETIREMENT	R9	12/15/2018	Payroll accrual	GENERAL FUND/WI RETIREMENT FUND	0	9,312.51
201800138	WISCONSIN RETIREMENT	R9	12/15/2018	Payroll accrual	SPECIAL EDUCATION FUND/WI RETIREMENT FUND	0	1,362.42
201800138	WISCONSIN RETIREMENT	R9	12/15/2018	Payroll accrual	FOOD SERVICE	0	330.58

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					FUND/WI RETIREMENT FUND		
					Totals for 201800138		22,011.02
201800149	WISCONSIN RETIREMENT	R9	12/31/2018	Payroll accrual	GENERAL FUND/WI RETIREMENT FUND	0	9,387.86
201800149	WISCONSIN RETIREMENT	R9	12/31/2018	Payroll accrual	SPECIAL EDUCATION FUND/WI RETIREMENT FUND	0	1,387.54
201800149	WISCONSIN RETIREMENT	R9	12/31/2018	Payroll accrual	FOOD SERVICE FUND/WI RETIREMENT FUND	0	351.45
201800149	WISCONSIN RETIREMENT	R9	12/31/2018	Payroll accrual	GENERAL FUND/WI RETIREMENT FUND	0	9,387.86
201800149	WISCONSIN RETIREMENT	R9	12/31/2018	Payroll accrual	SPECIAL EDUCATION FUND/WI RETIREMENT FUND	0	1,387.54
201800149	WISCONSIN RETIREMENT	R9	12/31/2018	Payroll accrual	FOOD SERVICE FUND/WI RETIREMENT FUND	0	351.45
					Totals for 201800149		22,253.70
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	GENERAL FUND/FICA (SOCIAL SECURITY)	0	8,600.78
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	SPECIAL EDUCATION FUND/FICA (SOCIAL SECURITY)	0	1,300.30
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	FOOD SERVICE FUND/FICA (SOCIAL SECURITY)	0	332.53
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	COMMUNITY SERVICE FUND/FICA (SOCIAL SECURITY)	0	86.96
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	GENERAL FUND/FICA (SOCIAL SECURITY)	0	2,011.49
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	SPECIAL EDUCATION FUND/FICA (SOCIAL SECURITY)	0	304.12
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	FOOD SERVICE FUND/FICA (SOCIAL SECURITY)	0	77.76
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	COMMUNITY SERVICE FUND/FICA (SOCIAL SECURITY)	0	20.34
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	GENERAL FUND/FEDERAL INCOME TAX	0	341.00
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	SPECIAL EDUCATION FUND/FEDERAL INCOME TAX	0	29.24
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	FOOD SERVICE FUND/FEDERAL INCOME TAX	0	25.00
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	GENERAL FUND/FEDERAL INCOME TAX	0	9,872.39
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	SPECIAL EDUCATION FUND/FEDERAL INCOME	0	1,076.42

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					TAX		
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	FOOD SERVICE FUND/FEDERAL INCOME TAX	0	174.96
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	COMMUNITY SERVICE FUND/FEDERAL INCOME TAX	0	123.25
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	GENERAL FUND/FICA (SOCIAL SECURITY)	0	2,011.49
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	SPECIAL EDUCATION FUND/FICA (SOCIAL SECURITY)	0	304.12
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	FOOD SERVICE FUND/FICA (SOCIAL SECURITY)	0	77.76
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	COMMUNITY SERVICE FUND/FICA (SOCIAL SECURITY)	0	20.34
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	GENERAL FUND/FICA (SOCIAL SECURITY)	0	8,600.78
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	SPECIAL EDUCATION FUND/FICA (SOCIAL SECURITY)	0	1,300.30
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	FOOD SERVICE FUND/FICA (SOCIAL SECURITY)	0	332.53
201800171	INTERNAL REVENUE SER	P9	01/31/2019	Payroll accrual	COMMUNITY SERVICE FUND/FICA (SOCIAL SECURITY)	0	86.96
					Totals for 201800171		37,110.82
201800172	MASSMUTUAL FINANCIAL	P9	01/31/2019	Payroll accrual	GENERAL FUND/HARTFORD INS - TSA/ROTH	0	0.00
201800172	MASSMUTUAL FINANCIAL	P9	01/31/2019	Payroll accrual	GENERAL FUND/HARTFORD INS - TSA/ROTH	0	1,199.00
201800172	MASSMUTUAL FINANCIAL	P9	01/31/2019	Payroll accrual	GENERAL FUND/HARTFORD INS - TSA/ROTH	0	50.00
					Totals for 201800172		1,249.00
201800173	WEA TAX SHELTERED AN	P9	01/31/2019	Payroll accrual	GENERAL FUND/WEA TRUST - TSA/ROTH	0	44.88
201800173	WEA TAX SHELTERED AN	P9	01/31/2019	Payroll accrual	GENERAL FUND/WEA TRUST - TSA/ROTH	0	100.00
201800173	WEA TAX SHELTERED AN	P9	01/31/2019	Payroll accrual	GENERAL FUND/WEA TRUST - TSA/ROTH	0	250.00
201800173	WEA TAX SHELTERED AN	P9	01/31/2019	Payroll accrual	SPECIAL EDUCATION FUND/WEA TRUST - TSA/ROTH	0	25.00
					Totals for 201800173		419.88
201800174	WISCONSIN DEPT OF RE	P9	01/31/2019	Payroll accrual	GENERAL FUND/STATE INCOME TAX	0	70.00
201800174	WISCONSIN DEPT OF RE	P9	01/31/2019	Payroll accrual	SPECIAL EDUCATION FUND/STATE INCOME TAX	0	5.00
201800174	WISCONSIN DEPT OF RE	P9	01/31/2019	Payroll accrual	GENERAL FUND/STATE	0	38.35

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					INCOME TAX		
201800174	WISCONSIN DEPT OF RE	P9	01/31/2019	Payroll accrual	GENERAL FUND/STATE INCOME TAX	0	6,321.11
201800174	WISCONSIN DEPT OF RE	P9	01/31/2019	Payroll accrual	SPECIAL EDUCATION FUND/STATE INCOME TAX	0	745.78
201800174	WISCONSIN DEPT OF RE	P9	01/31/2019	Payroll accrual	FOOD SERVICE FUND/STATE INCOME TAX	0	127.69
201800174	WISCONSIN DEPT OF RE	P9	01/31/2019	Payroll accrual	COMMUNITY SERVICE FUND/STATE INCOME TAX	0	76.45
					Totals for 201800174		7,384.38
201800176	WEA MEMBER BENEFIT T	P9	01/31/2019	Payroll accrual	GENERAL FUND/WEA TRUST ADVANTAGE	0	147.80
201800176	WEA MEMBER BENEFIT T	P9	01/31/2019	Payroll accrual	GENERAL FUND/WEA TRUST ADVANTAGE	0	53.31
201800176	WEA MEMBER BENEFIT T	P9	01/31/2019	Payroll accrual	GENERAL FUND/WEA TRUST ADVANTAGE	0	140.00
					Totals for 201800176		341.11
201800177	EMPLOYEE BENEFITS CO	JPWI21	01/31/2019	HRA & FSA CLAIMS	GENERAL FUND/FLEX PLAN SY16-17	0	485.17
201800177	EMPLOYEE BENEFITS CO	JPWI21	01/31/2019	HRA & FSA CLAIMS	GENERAL FUND/HRA/WEA ER DED (PMT ABOVE EE'S	0	797.54
					Totals for 201800177		1,282.71
201800178	EMPLOYEE BENEFITS CO	JPWI21	01/24/2019	HRA & FSA CLAIMS	GENERAL FUND/FLEX PLAN SY16-17	0	816.77
					Totals for 201800178		816.77
201800179	EMPLOYEE BENEFITS CO	JPWI21	01/31/2019	HRA & FSA CLAIMS	GENERAL FUND/FLEX PLAN SY16-17	0	1,072.04
201800179	EMPLOYEE BENEFITS CO	JPWI21	01/31/2019	HRA & FSA CLAIMS	GENERAL FUND/HRA/WEA ER DED (PMT ABOVE EE'S	0	6,740.18
					Totals for 201800179		7,812.22
201800180	EMPLOYEE BENEFITS CO	JPWI21	01/31/2019	HRA & FSA ADMIN FEES	GENERAL FUND/DISTRICT FEES / BANKING FEE/DIRECTION OF BUSINESS	0	315.45
					Totals for 201800180		315.45
201800181	DELTA DENTAL OF WISC	JPWI21	01/31/2019	DENTAL CLAIMS	GENERAL FUND/SELF FUND-EMPLOYER SHARE PREMI	0	444.20
					Totals for 201800181		444.20
201800182	DELTA DENTAL OF WISC	JPWI21	01/16/2019	DENTAL CLAIMS	GENERAL FUND/SELF FUND-EMPLOYER SHARE PREMI	0	1,436.20
					Totals for 201800182		1,436.20
201800183	DELTA DENTAL OF WISC	JPWI21	01/16/2019	DENTAL CLAIMS & ADMIN FEES	GENERAL FUND/SELF FUND-EMPLOYER SHARE PREMI	0	730.26
					Totals for 201800183		730.26
201800184	DELTA DENTAL OF WISC	JPWIFE	02/06/2019	DENTAL CLAIMS	GENERAL FUND/SELF FUND-EMPLOYER SHARE PREMI	0	2,188.62

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					Totals for 201800184		2,188.62
201800185	EMPLOYEE BENEFITS CO	JPWIFE	02/07/2019	FSA & HSA CLAIMS	GENERAL FUND/FLEX PLAN SY16-17	0	294.11
201800185	EMPLOYEE BENEFITS CO	JPWIFE	02/07/2019	FSA & HSA CLAIMS	GENERAL FUND/HRA/WEA ER DED (PMT ABOVE EE'S	0	3,015.45
					Totals for 201800185		3,309.56
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	GENERAL FUND/FICA (SOCIAL SECURITY)	0	8,391.67
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	SPECIAL EDUCATION FUND/FICA (SOCIAL SECURITY)	0	1,147.56
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	FOOD SERVICE FUND/FICA (SOCIAL SECURITY)	0	305.13
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	GENERAL FUND/FICA (SOCIAL SECURITY)	0	1,962.63
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	SPECIAL EDUCATION FUND/FICA (SOCIAL SECURITY)	0	268.40
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	FOOD SERVICE FUND/FICA (SOCIAL SECURITY)	0	71.36
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	GENERAL FUND/FEDERAL INCOME TAX	0	341.00
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	SPECIAL EDUCATION FUND/FEDERAL INCOME TAX	0	34.24
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	FOOD SERVICE FUND/FEDERAL INCOME TAX	0	25.00
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	GENERAL FUND/FEDERAL INCOME TAX	0	9,750.47
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	SPECIAL EDUCATION FUND/FEDERAL INCOME TAX	0	927.56
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	FOOD SERVICE FUND/FEDERAL INCOME TAX	0	142.47
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	GENERAL FUND/FICA (SOCIAL SECURITY)	0	1,962.63
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	SPECIAL EDUCATION FUND/FICA (SOCIAL SECURITY)	0	268.40
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	FOOD SERVICE FUND/FICA (SOCIAL SECURITY)	0	71.36
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	GENERAL FUND/FICA (SOCIAL SECURITY)	0	8,391.67
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	SPECIAL EDUCATION FUND/FICA (SOCIAL SECURITY)	0	1,147.56
201800186	INTERNAL REVENUE SER	P9	02/15/2019	Payroll accrual	FOOD SERVICE FUND/FICA (SOCIAL	0	305.13

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					SECURITY)		
					Totals for 201800186		35,514.24
201800187	MASSMUTUAL FINANCIAL	P9	02/15/2019	Payroll accrual	GENERAL FUND/HARTFORD INS - TSA/ROTH	0	0.00
201800187	MASSMUTUAL FINANCIAL	P9	02/15/2019	Payroll accrual	GENERAL FUND/HARTFORD INS - TSA/ROTH	0	1,199.00
201800187	MASSMUTUAL FINANCIAL	P9	02/15/2019	Payroll accrual	GENERAL FUND/HARTFORD INS - TSA/ROTH	0	50.00
					Totals for 201800187		1,249.00
201800188	WEA TAX SHELTERED AN	P9	02/15/2019	Payroll accrual	GENERAL FUND/WEA TRUST - TSA/ROTH	0	100.00
201800188	WEA TAX SHELTERED AN	P9	02/15/2019	Payroll accrual	GENERAL FUND/WEA TRUST - TSA/ROTH	0	250.00
201800188	WEA TAX SHELTERED AN	P9	02/15/2019	Payroll accrual	SPECIAL EDUCATION FUND/WEA TRUST - TSA/ROTH	0	25.00
201800188	WEA TAX SHELTERED AN	P9	02/15/2019	Payroll accrual	GENERAL FUND/WEA TRUST - TSA/ROTH	0	44.88
					Totals for 201800188		419.88
201800189	WISCONSIN DEPT OF RE	P9	02/15/2019	Payroll accrual	GENERAL FUND/STATE INCOME TAX	0	70.00
201800189	WISCONSIN DEPT OF RE	P9	02/15/2019	Payroll accrual	SPECIAL EDUCATION FUND/STATE INCOME TAX	0	10.00
201800189	WISCONSIN DEPT OF RE	P9	02/15/2019	Payroll accrual	GENERAL FUND/STATE INCOME TAX	0	48.79
201800189	WISCONSIN DEPT OF RE	P9	02/15/2019	Payroll accrual	GENERAL FUND/STATE INCOME TAX	0	6,152.03
201800189	WISCONSIN DEPT OF RE	P9	02/15/2019	Payroll accrual	SPECIAL EDUCATION FUND/STATE INCOME TAX	0	657.21
201800189	WISCONSIN DEPT OF RE	P9	02/15/2019	Payroll accrual	FOOD SERVICE FUND/STATE INCOME TAX	0	112.23
					Totals for 201800189		7,050.26
201800191	WEA MEMBER BENEFIT T	P9	02/15/2019	Payroll accrual	GENERAL FUND/WEA TRUST ADVANTAGE	0	147.80
201800191	WEA MEMBER BENEFIT T	P9	02/15/2019	Payroll accrual	GENERAL FUND/WEA TRUST ADVANTAGE	0	53.31
201800191	WEA MEMBER BENEFIT T	P9	02/15/2019	Payroll accrual	GENERAL FUND/WEA TRUST ADVANTAGE	0	140.00
					Totals for 201800191		341.11
201800192	EMPLOYEE BENEFITS CO	jpwi21	02/15/2019	HRA & FSA CLAIMS	GENERAL FUND/FLEX PLAN SY16-17	0	928.05
201800192	EMPLOYEE BENEFITS CO	jpwi21	02/15/2019	HRA & FSA CLAIMS	GENERAL FUND/HRA/WEA ER DED (PMT ABOVE EE'S	0	2,586.18
					Totals for 201800192		3,514.23
					Totals for checks		339,281.16

CREDIT CARD STATEMENT - January			WUFAR Code						
Date	Vendor	Amount	Fund	E	Location	Object	Function	Project	Description
Dan Wolfgram									
1/3/2019	GED TESTING	$30.00	10	E	400	389	179000	000	MARY ECK - GED TESTING
1/9/2019	GED TESTING	$36.00	10	E	400	389	179000	000	MARY ECK - GED TESTING
1/3/2019	GED TESTING	$6.00	10	E	400	389	179000	000	MARY ECK - GED TESTING
1/3/2019	MLAIC TRAIN	$135.00	10	E	800	310	264000	000	CINDY BUTTLES - LEAD & ASBESTOS CONFERENCE
1/3/2019	THE ART OF EDUCATION	$125.00	10	E	400	310	221300	000	NANCY ZABLER-CONFERENCE REGISTRATION
1/14/2019	CESA #11 CONFERENCE	$129.00	27	E	400	310	221300	341	DARREN CARSON - TRANSITION CONFERENCE
1/15/2019	FLEET FARM	$24.43	10	E	400	411	253000	000	MIKE THOMACK, BUILDINGS & GROUNDS
	TOTAL	**$332.00**							
Melanie Oppor									
01/08/19	Adobe Acrobat	$15.81	10	E	500	435	232000	0	Updated Version of Adobe
	TOTAL	**$15.81**							
Jeanne Frazier									
12/29/18	Education Week	$40.00	10	E	500	941	232100	0	Subscription Renewal Dr. Oppor
01/11/19	Skillpath National	$164.53	10	E	500	411	232100	0	Essentials of Front Desk Safety & Seurity - CD Rom
01/18/19	Amazon	-$0.47	10	E	400	411	121000	0	Refund Tax on PO 4001700256 ZABLER CLASRM MATERIALS
01/18/19	Amazon	-$0.27	10	E	400	411	121000	0	Refund Tax on PO 4001700256 ZABLER CLASRM MATERIALS
01/18/19	Amazon	-$0.31	27	E	101	411	158000	341	Refund Tax K. Sitter Classroom Materials PO 0271900045
	TOTAL	**$203.48**							
Bryant Cobarrubias									
12/28/2018	Winhostcom	$35.85	10	E	800	480	295000	000	RtI Planner Hosting
01/14/2019	Microsoft Azure	$70.47	10	E	800	480	295000	000	Help Desk Software
01/15/2018	Toon Boom	$9.00	10	E	800	480	295000		Toon Boom License - 1 student
	Total	**$115.32**							
Michelle Pukita									
Jan. 2	Moby Max	$99.00	10	E	101	430	110000		Renewal of Moby Max
	TOTAL	**$99.00**							

Name	Reference	Trans Date	Description	Post Date	Amount
		01/04/2019	HS DENIM DOLLAR DAYS	01/04/2019	266.00
			Totals for 13464		266.00
		01/04/2019	ES DENIM DOLLAR DAYS	01/04/2019	327.00
			Totals for 13465		327.00
		01/04/2019	ADMISSIONS	01/04/2019	150.00
			Totals for 13467		150.00
		01/04/2019	FOOD SERVICE	01/04/2019	1,107.00
			Totals for 13481		1,107.00
		01/08/2019	ES LUNCH	01/08/2019	1,054.70
			Totals for 13466		1,054.70
		01/08/2019	DENIM DAYS	01/08/2019	30.00
			Totals for 13473		30.00
		01/08/2019	BOTTLING GROUP	01/08/2019	66.61
			Totals for 13474		66.61
		01/08/2019	WRESTLING	01/08/2019	350.00
			Totals for 13475		350.00
		01/08/2019	WRESTLING	01/08/2019	40.00
			Totals for 13476		40.00
		01/08/2019	DHS FORWARD HEALTH	01/08/2019	1,872.44
			Totals for 13477		1,872.44
		01/08/2019	DONATION TO TITLE 1 READING PROGRAM	01/08/2019	100.00
			Totals for 13478		100.00
		01/08/2019	COOP ED SERVICE	01/08/2019	952.50
			Totals for 13479		952.50
		01/08/2019	CESA 5	01/08/2019	952.50
			Totals for 13480		952.50
		01/11/2019	FOOD SERVICE	01/11/2019	954.00
			Totals for 13468		954.00
		01/11/2019	TAXES	01/11/2019	31,234.71
			Totals for 13482		31,234.71
		01/11/2019	TAXES	01/11/2019	109,397.51
			Totals for 13483		109,397.51
		01/11/2019	FOOD SERVICE	01/11/2019	1,698.75
			Totals for 13489		1,698.75
		01/11/2019	MASS MUTUAL INS	01/11/2019	597.60
			Totals for 13494		597.60
		01/11/2019	MASS MUTUAL INS	01/11/2019	1,199.00
			Totals for 13495		1,199.00
		01/11/2019	STRATFORD	01/11/2019	175.00
			Totals for 13496		175.00
		01/11/2019	CRIVITZ	01/11/2019	175.00
			Totals for 13497		175.00
		01/11/2019	MONTELLO	01/11/2019	175.00
			Totals for 13498		175.00
		01/11/2019	WINNECONNE	01/11/2019	175.00
			Totals for 13499		175.00
		01/11/2019	VILLAGE OF OGDENSBURG	01/11/2019	28,950.35
			Totals for 13500		28,950.35
		01/11/2019	FOOD SERVICE	01/11/2019	100.00
			Totals for 13501		100.00
		01/11/2019	ROSHOLT	01/11/2019	40.00
			Totals for 13502		40.00
		01/11/2019	URGENT NEEDS FUND	01/11/2019	50.00

Name	Reference	Trans Date	Description	Post Date	Amount
			Totals for 13503		50.00
		01/11/2019	FOOD	01/11/2019	15.84
			Totals for 13504		15.84
		01/11/2019	FOOD	01/11/2019	106.78
			Totals for 13505		106.78
		01/14/2019	TOWN OF LITTLE WOLF	01/14/2019	472,052.04
			Totals for 13469		472,052.04
		01/14/2019	CITY OF MANAWA	01/14/2019	196,766.51
			Totals for 13470		196,766.51
		01/14/2019	TOWN OF ROYALTON	01/14/2019	190,785.24
			Totals for 13471		190,785.24
		01/14/2019	TOWN OF LEBANON	01/14/2019	84,919.40
			Totals for 13472		84,919.40
			Total for Cash Receipts		1,126,836.48

NOTIFICATION OF STATE GRANT AWARD

PI-1136 (Rev. 06-16)

AWARD INFORMATION

DPI Grant Name (1)

Educator Effectiveness Grant

Sub-Recipients Information

Agency Name (2)	Agency Code (3)
Manawa School District	683276

DUNS Name (4)	DUNS No. (5)
Manawa School District	028965465

Amount of State Funds Obligated By This Action (6)	Total Amount of State Funds Obligated (7)	Total Approved Cost Sharing or Matching (8)
$4,880	$4,880	$0

DPI Contact Information

Contact Name *First & Last* (9)	Email Address (10)	Phone *Area Code/No.* (11)
Jacob Hollnagel	jacob.hollnagel@dpi.wi.gov	(608) 266-5195

Team (12)	DPI Grant Number (13)
Educator Effectiveness	2019-683276-EE-583

DPI Source Code (14)	DPI Project Code (15)	State ID (16)
630	583	255.940

Sub-Award Date *Mo./Day/Yr.* (17)	Sub-Award Period of Performance		Grant Authority (20)
	Start Date *Mo./Day/Yr.* (18)	End Date *Mo./Day/Yr.* (19)	
11/28/2018	7/1/2018	6/30/2019	Wis. Stat. 115.415

APPROVAL SIGNATURES

Senior Grant Management Accountant, School Management Services Team	Date Signed *Mo./Day/Yr.*
Tim Coulthart	12/18/18
Division Administrator	**Date Signed *Mo./Day/Yr.***
Sheila J. Briggs	12/12/18
State Superintendent	**Date Signed *Mo./Day/Yr.***
Tony Evers	12/12/18

RECIPIENT INFORMATION

Recipient *Name, Mailing Address, City, State, Zip* (2, 21, 22, 23, 24)

Manawa School District
800 Beech Street
Manawa, WI 54949

TERMS AND CONDITIONS OF AWARD (25)

In order to implement the Wisconsin Educator Effectiveness System, districts will receive $80 per educator (i.e., superintendents, principals, teachers, and other licensed educator roles) to cover the costs associated with system development, training, software, support, resources, and ongoing refinement.

Grant Restrictions

Districts will only receive funds for appropriate, approved expenditures associated with participation in the Wisconsin Educator Effectiveness System within the period of the grant award (i.e., upon Department of Public Instruction's receipt of an application through **June 30, 2019**). Districts cannot carry over funds.

Grant monies must be spent or obligated by **June 30, 2019**. A final Program Fiscal Report (PI-1086) must be filed prior to **September 30, 2019**. Claims should not be filed until payment is made or received by the agency's model vendor or expenses have been made to cover the costs of an equivalent model. Reimbursement of claims for state-model districts will be held until payment of fees is verified.

NOTE: The recipient is the employer of staff funded under this project for purposes of unemployment compensation.

ADDITIONAL AWARD INFORMATION (26)
Other information pertaining to the sub-recipient.
If applicable

Wisconsin Department of Public Instruction
EDUCATOR EFFECTIVENESS GRANT
CESA 6 EFFECTIVENESS PROJECT
PI-1621 (Rev. 07-18)

INSTRUCTIONS: Application must be received or postmarked no later than **November 30, 2018**; Return to:

WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION
EDUCATOR EFFECTIVENESS PROGRAM
ATTENTION: JACOB HOLLNAGEL
PO BOX 7841
MADISON, WI 53707-7841

For questions regarding this grant, contact:
The Educator Development & Support Team, (608) 267-3750,
educator.effectiveness@dpi.wi.gov

NOV 28 REC'D

I. GENERAL INFORMATION

Applicant Agency	Mailing Address *Street, City, State, ZIP*
Manawa School District	800 Beech Street, Manawa, WI 54949-8664

District Administrator	Title
Melanie Joy Oppor	District Administrator

District Administrator's E-Mail Address	Fax *Area/No.*	Phone *Area/No.*
moppor@manawaschools.org	920-596-5308	920-596-2525

District Level Program Coordinator *If other than District Administrator*	Title

District Level Program Coordinator's E-Mail Address	Phone *Area/No.*

Teacher Level Program Coordinator	Title

Teacher's E-Mail Address	Phone *Area/No.*

Total Funds Requested	Project Title	Grant Period	
		Beginning Date *Mo./Day/Yr.*	Ending Date *Mo./Day/Yr.*
$ 4,880	**Educator Effectiveness Grant: Practice Model Implementation**	**7/1/2018**	**6/30/2019**

II. CERTIFICATION/SIGNATURE

I, THE UNDERSIGNED, CERTIFY that the information contained in this application is complete and accurate to the best of our knowledge; that the necessary assurances of compliance with applicable state and federal statutes, rules, and regulations will be met; and, that the indicated agency designated in this application is authorized to administer this grant.

I FURTHER CERTIFY that the assurances listed above have been satisfied and that all facts, figures, and representation in this application are correct to the best of our knowledge.

Signature of Applicant Agency Administrator	Date Signed *Mo./Day/Yr.*
Melanie J. Oppor, PhD	11-26-18

III. ABSTRACT

In order to implement the Wisconsin Educator Effectiveness System, LEAs receive, up to $80 per educator (i.e., superintendents, principals, teachers, and other licensed educator roles) to cover the costs associated with system development, training, software, support, resources, and ongoing refinement.

The Grant Process
The Department of Administration (DOA) appropriated Educator Effectiveness funds to DPI in the form of a grant.

1. In 2018, DPI will distribute to districts a simple grant application requiring all district superintendents to confirm the pre-populated general information. The number of licensed educators (i.e., principals, teachers, and other licensed educator roles) comes from the 2017-18 WISEstaff Report (PI-1202). DPI must receive the signed grant application by **November 30, 2018**. Upon receipt, DPI will ensure the application was signed by the district administrator.
2. Districts must complete the following to receive Effectiveness Project support and funding.
   a. Pay fees to CESA 6 associated with evaluation model implementation. (Note: funds must be encumbered within the current fiscal year.)
   b. Submit claims using the DPI Program Fiscal Report form PI-1086.
3. DPI will then reimburse districts' claims. While DPI generally reimburses district claims within 30 days, given the large volume of submissions, reimbursement may take up to six weeks.

Grant Restrictions
Districts will only receive funds for appropriate, approved expenditures associated with participation in the Wisconsin Educator Effectiveness System within the period of the grant award (upon DPI's receipt of an application through June 30, 2019). Districts cannot carry over funds.

IV. ASSURANCES

Assurance is hereby provided that:

1. The programs and services provided under this grant will be used to address the needs set forth in the application and fiscal related information will be provided within the fiscal year timelines established for new, reapplying, and/or continuing programs.
2. The programs and services provided with federal funds under this grant will be operated so as not to discriminate on the basis of age, gender, race, national origin, ancestry, religion, creed, pregnancy, marital or parental status, sexual orientation, or physical, mental, emotional, or learning disabilities.
3. Administration of the program, activities, and services covered by this application will be in accordance with all applicable state and federal statutes, regulations, and the approved application.
4. The activities and programs that will be performed under this grant will be used to supplement services and not supplant funds from non- federal sources.
5. The district will require the entity and its principals involved in any sub tier covered transaction paid through federal funds, that requires such certification, to ensure it/they are not debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation by a federal department or agency. {EDGAR-Part85}
6. The LEA will evaluate its program periodically to assess its progress toward achieving its goals and objectives and use its evaluation results to refine, improve, and strengthen its program and to refine its goals and objectives as appropriate.
7. The LEA will submit to the department such information, and at such intervals, that the department requires to complete state and/or federal reports.
8. This program will be administered in accordance with all applicable statutes, regulations, program plans, and applications.
9. The school district will cooperate in carrying out any evaluation of this program conducted by or for the state educational agency, the secretary, or other federal officials.
10. The school district will comply with civil rights and nondiscrimination requirement provisions and equal opportunities to participate for all eligible students, teachers, and other program beneficiaries.
11. The school district will use fiscal control and fund accounting procedures as will ensure proper disbursement of, and accounting for, federal funds received and distributed under this program.
12. The school district will (a) make reports to the Department of Public Instruction and the U.S. Secretary of Education as may be necessary to enable the state and federal departments to perform their duties under this program; and (b) maintain records, provide information, and afford access to the records, as the department or the U.S. Secretary of Education may find necessary to carry out their duties.
13. Each agency receiving funds under this grant shall use these funds only to supplement, and not to supplant state and local funds that, in the absence of such funds would otherwise be spent for activities under this section.
14. The applicant will file financial reports and claims for reimbursement in accordance with procedures prescribed by the Department of Public Instruction.
15. No board or staff member of a Local Education Agency (LEA) will participate in, or make recommendations with respect to, an administrative decision regarding a program or project if such decision can be expected to result in any benefit or remuneration, such as a royalty, commission, contingent fee, brokerage fee, consultant fee, or other benefit to him or her or any member of his/her immediate family.
16. Any printed (or other media) description of programs will state the total amount being spent on the project or activity and will indicate the percentage of funds from the federally funded programs.
17. The school district will adopt and use proper methods of administering such program, including (a) the enforcement of any obligations imposed by law on agencies, institutions, organizations, and other recipients responsible for carrying out each program; or (b) the correction of deficiencies in program operations that are identified through audits, monitoring, or evaluation.
18. The school district will administer such funds and property to the extent required by the authorizing statutes.

V. GOALS/OBJECTIVES

The purpose of the Wisconsin Educator Effectiveness System (EE System) is to improve professional practice in order to improve student outcomes. In order to do so, educators must have access to quality data identifying individual areas of strength, as well as needed growth in order to inform targeted, job-embedded professional growth opportunities. The EE System incorporates a holistic view of performance using varied sources of evidence at several points in time. This new system represents a vast improvement over typical educator evaluation practices.

In order to implement the Wisconsin Educator Effectiveness System, LEAs receive up to $80 per educator (i.e., superintendents, principals, teachers, and other licensed educator roles) to cover the costs associated with system development, training, software, support, resources, and ongoing refinement.

VI. EVALUATION PLAN

The SEA has contracted with an external evaluator to obtain feedback from statewide system users to make revisions, as necessary. As such, LEAs will be requested to participate in evaluation activities, including interviews, surveys, focus groups, and case studies in order to inform the development of a Wisconsin Educator Effectiveness System created by and for Wisconsin educators.

Additionally, DPI will monitor districts' implementation of the system, per state law. DPI will monitor implementation based on the participation of educators in the state's evaluation of the system (noted above). Should an LEA fail to participate (e.g. surveys, etc.) additional monitoring may be required.

VII. BUDGET DETAIL

INSTRUCTIONS: *Confirm the model listed under "Agency/Vendor" and sign the application in Section II. Either email jacob.hollnagel@dpi.wi.gov, fax (608-267-2920) or mail the grant application to DPI attention Jacob Hollnagel.*

If your district has been approved to use an equivalent model and that has not been indicated on this grant application, contact the Educator Effectiveness Team at (608) 267-3750 or educator.effectiveness@dpi.wi.gov.

If your district intends to apply for equivalency using a new equivalent model this spring, contact the Educator Effectiveness Team at (608) 267-3750 or educator.effectiveness@dpi.wi.gov

Date of Request *Mo./Day/Yr.*	Applicant Agency	Project No. *For revisions only*
11/28/18	Manawa School District	

Purchased Services Summary (300s)

a. WUFAR Function Code	b. Type of Service Purchased	c. Date(s) Service to be Provided	d. Specify Agency/Vendor or Supplier *If known*	e. Number of Licensed Educators	f. Cost of Educator Effectiveness Model ***(Number of Educators multiplied by $80)***
221300	Registration Fees	FY19	CESA 6	61	$ 4,880

IX. BUDGET SUMMARY

Applicant Agency	Grant Period Begin	Date Submitted: Initial Request	First Revision	Second Revision
Manawa School District	**7/1/2018**	1/18/18		
Project Number *For DPI Use Only* **583**	End **6/30/2019**			

Budget Revisions: Submit a copy of this page, with appropriate revisions included. (Attach this to a brief letter of justification.) **Note:** Submit request at least **30 days** prior to expenditure of grant monies. **If a field should be left blank, you must enter a zero "0" in that field.**

WUFAR Function	WUFAR Object	Amount Requested	First Revision	Second Revision
Instruction (100 000 Series) Activities dealing directly with the interaction between instructional staff and students.	a. Salaries (100s)			
	b. Fringe Benefits (200s)			
	c. Purchased Services (300s)			
	d. Non-Capital Objects (400s)			
	e. Capital Objects (500s)			
	f. Other Objects (e.g., fees) (900s)			
	TOTAL Instruction			
Support Services—Pupil and Instructional Staff Services (in 210 000 and 220 000 Series) Support services are those which facilitate and enhance instructional or other components of the grant. This category includes staff development, supervision, and coordination of grant activities.	a. Salaries (100s)			
	b. Fringe Benefits (200s)			
	c. Purchased Services (300s)	$ 4,880		
	d. Non-Capital Objects (400s)			
	e. Capital Objects (500s)			
	f. Other Objects (e.g., fees) (900s)			
	TOTAL Support Services—Pupil / Instructional Staff Services	$ 4,880		
Support Services—Administration (Associated with functions in 230 000 series and above.) Includes general; building; business; central service administration, and insurances.	a. Salaries (100s)			
	b. Fringe Benefits (200s)			
	c. Purchased Services (300s)			
	d. Non-Capital Objects (400s)			
	e. Capital Objects (500s)			
	f. Insurance (700s)			
	g. Other Objects (e.g., fees) (900s)			
	TOTAL Support Services—Admin.			
Indirect Cost	Approved Rate 0%			
TOTAL BUDGET		$ 4,880		
DPI Approval	Signature of DPI Reviewer ➢			Date Signed *Mo./Day/Yr.* 12/26/18

FUNDRAISER INFORMATION			
2018-19 Budget Year (Last Revised 11-19-2018)			
Name of Fundraiser (K-6)	**Class or Club**	**Purpose**	**Dates**
Box Top for Education	All Grades	To purchase unbudgeted teacher itmes.	All Year
PTO Wolf Walk	PTO	To fund PTO activities to support school functions.	Fall
PTO Penny War	PTO	To offset unbudgeted expenses and support positive school climate activities at MES.	March 6-10, 2017
Hansen's Food	All Grades	To fund field trips and other class activities.	All Year
Valentine's Day Cookies	Student Council	To fund Student Council activities.	All Year
Book Fair/BOGO Fair	Librarian	To fund books for library, book room, and/or classrooms.	November & May
Java Fridays	Special Education	Self-sustaining work experience for students.	All Year
Community Service Project (Eliminate)	Music Teacher (Mrs. Baranccyk	split between families in Phillipines who made braclets and the school	Winter
Name of Fundraiser (7-12)	**Class or Club**	**Purpose**	**Dates**
Seroogy's	Art Club/Art Team	Art Team T-Shirts	All Year
Concessions	Student Council	To pay for projects.	Football season, volleyball season, girls basketball season, boys basketball season, track season, and a portion of the wrestling season
Vandewalls Chocolate	7th and 8th Grades	To fund 2017 Washington D.C. trip.	All Year
Shirt Sales	Student Council	To pay for projects.	September
Fruit Sales (Russ Davis - wholesale)	Choir/Band	To fund various fees for solo ensemble.	October/November
Sale of Shakes	Student Council	To pay for projects.	February & March
Flower Sales	Student Council	To pay for projects.	February & March
TBA	Student Council	To assist with hosting State Student Council Convention	
FFA Dessert Auction (At Banquet)	FFA	To pay for leadership development/chapter expenses.	March or April
Donors Choose Drum Project	Vocal Music	African Drum acquisiton for General Music	Fall 2018
To Be Determined	Cross Country	Awards, end of year banquet.	September
Chef's Choice Pizza	Band/Choir	S/E fees, transportation costs.	Sept. & January

Bake Sale	Band	S/E fees, transportation costs.	May
Rose & Concession Sale	Band	Host school for S/E.	March
50/50 Raffle	Choir	Replenish Activity Account for future travel. February - Lion King	2018-2019 Choir Concerts
Country Meaat Sanck Sticks	FBLA	Earn funds for State FBLA	March/April
HS and MS Band and Choir Gourmet Delights Cheesecake Sale	HS and MS Band and Choir	Opportunity for students to rasie funds for the individual accounts for travel and other educational activities.	Feb. and March 2019
Choir Concert Concessions	Choir	Replenish Activity Account for future travel. February - Lion King	2018-2019 Choir Concerts
Cookie Dough (Great American Opportunities)	Band	Fund Trip	January
Concert on the Triangle - Pie Sale	Band	Transportarion costs.	Summer
50-50 Raffle Tickets Football Games	Girls Basketball	Uniforms/other activities.	September/October
50-50 Raffle Tickets Basketball Games	Junior Class	Prom.	Winter
Muffin Project - including Muffin Thursdays, Rootbeer Float Fridays, Freezer Pop Sale, and Staff Thanksgiving Dinner	Special Education	Self-sustaining work experience for students. To fund community outings.	All Year
Holiday Bread Order	Special Education	Self-sustaining work experience, and help to support community outings.	November - January
Lollipop Sale	FOR Club	Activities and projects.	Sept. - Nov.
Various Projects	Think Pink	Raising money to donate to the American Cancer Society.	All Year
Bottled Water Vending Machine	FFA	Various projects and activities.	All Year
Football Jersey Sale	Football	Fund the replacement of jerseys so all match.	Spring/Summer 2016
Name of Fundraiser (Districtwide)	**Class or Club**	**Purpose**	**Dates**
Project Backpack	Manawa Project Backpack Club	To support the ongoing food and supply costs for student program participants.	Solicitation of donation letter
Color Run	Secondary Special Education	District technology or academic enhancements.	May - Every Other Year - 2018; 2020; 2022; etc.
The Frostbite Club	Wellness Committee	Incentive prizes like t-shirts, water bottles, etc. for children	December/Janauary
Mr. Manawa and Bake Sale	Junior Class	Prom fundraiser	25-Mar
Finals Munchies and Beverages	NHS	Laude Stoles / Fund Activities	January/June

RED = eliminated fundraisers
YELLOW = updated/revised fundraisers

School District of Manawa

"Students Choosing to Excel, Realizing Their Strengths"

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District Fax (920) 596-5308 | Elementary Fax (920) 596-5339 | Jr./Sr. High Fax (920) 596-2655

www.manawaschools.org

To: Dr. Melanie Oppor
Fr: Skylar Liebzeit
Date: 2/15/2019
Re: 2019 Football Coaching Staff Updates

I am recommending the following coaches for the 2019 Football coaching assignment (Pending Clear Background Checks and Physicals as needed):

Name	Position	Information
Brad Johnson	Head Football Coach	Brad Johnson will be returning to the role of Head Football Coach in 2019.
Jeff Bortle	Varsity Football Assistant	Jeff Bortle will be returning as a paid Varsity Assistant Football Coach in 2019.
Nate Ziemer	Varsity Football Assistant	Nate Ziemer will be returning as a paid Varsity Assistant Football Coach in 2019.
Brian Elmhorst	Varsity Football Assistant	Brian Elmhorst will be returning as a paid Varsity Assistant Football Coach ub 2019.
Hunter Gruenwald	Unpaid volunteer Assistant Coach	Hunter Gruenwald will be coaching with the SDM Football Coaching Staff in the 2019 season as an unpaid volunteer.
Pete Bowen	Unpaid volunteer Assistant Coach	Pete Bowen will be coaching with the SDM Football Coaching Staff in the 2019 season as an

Dr. Melanie J. Oppor — District Administrator — moppor@manawaschools.org — (920) 596-2525

Daniel J. Wolfgram — Jr./Sr. High School Principal — dwolfgram@manawaschools.org — (920) 596-5800

Michelle Pukita — Elementary Principal — mpukita@manawaschools.org — (920) 596-5700

Carmen O'Brien — Business Manager — cobrien@manawaschools.org — (920) 596-5332

Danielle Brauer — Curriculum/Special Ed. Dir. — dbrauer@ manawaschools.org — (920) 596-5301

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		unpaid volunteer.
Luke Seeger	Unpaid volunteer Assistant Coach	Luke Seeger will be coaching with the SDM Football Coaching Staff in the 2019 season as an unpaid volunteer.
Ben Mikkelson	Unpaid volunteer Assistant Coach	Ben Mikkelson will be coaching with the SDM Football Coaching Staff in the 2019 season as an unpaid volunteer. He will mostly be helping with game day film.
Casey Johnson	Unpaid volunteer Assistant Coach	Casey Johnson will be coaching with the SDM Football Coaching Staff in the 2019 season as an unpaid volunteer. He will be returning from his collegiate playing career.
Jim Gorman	7th Grade Head Coach/8th Grade Assistant	Jim will be returning to the MS coaching staff in 2019.
Tony Decker	8th Grade Head Coach/7th Grade Assistant	Tony will be returning to the MS coaching staff in 2019.

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WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION

Proclamation

Whereas the National FFA Organization has designated February 16-23, 2019, as FFA Week; and

Whereas FFA and agriculture education provide a strong foundation for the youth of America and the future of the food, fiber, and natural resources systems; and

Whereas FFA promotes premier leadership, personal growth, and career success among its members; and

Whereas FFA and agricultural education ensure a steady supply of young professionals to meet the growing demands in the science, business, and technology of agriculture; and

Whereas the FFA motto, "learning to do, doing to learn, earning to live, living to serve," gives direction of purpose to these students who take an active role in succeeding in agricultural education; and

Whereas FFA promotes citizenship, volunteerism, patriotism, and cooperation; and

Whereas career and technical education offers individuals lifelong opportunities to learn new skills, which provide them with career choices and potential life satisfaction; and

Whereas members, advisors, state officers, alumni, sponsors and staff of the Wisconsin Association of FFA be commended for their dedication to developing leaders for the future of the agriculture industry in the State of Wisconsin;

Therefore, be it resolved that I, Carolyn Stanford Taylor, State Superintendent of Public Instruction, do hereby proclaim in the state of Wisconsin,

FFA Week
February 16-23, 2019

Carolyn Stanford Taylor, State Superintendent

WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION

Proclamation

Whereas for more than 30 years, the School Breakfast Program has contributed to the health and educational development of our state's children by making nutritious breakfasts available in Wisconsin schools; and

Whereas the School Breakfast Program plays an important role in promoting healthy eating habits of children and combating childhood hunger; and

Whereas studies indicate that students who eat breakfast have improved mathematics grades and reading scores, enhanced classroom attentiveness, reduced absenteeism and tardy rates, fewer nurses' visits, and improved psycho-social behaviors; and

Whereas school breakfast programs can significantly enhance the students' learning environment, allowing children to concentrate on graduating with the skills and knowledge they need to be successful in the workplace or with further studies, a primary goal of Every Child a Graduate;

Therefore, be it resolved that March 4-8, 2019, be proclaimed as National School Breakfast Week, a time to pay tribute to the many concerned individuals involved in this program, including state officials, school food and nutrition service professionals, school administrators, teachers, parents, local civic leaders, and many volunteers.

National School Breakfast Week

Start Your Engines with School Breakfast

March 4-8, 2019

Carolyn Stanford Taylor, State Superintendent

MANAWA

Students choosing to excel; realizing their strengths.

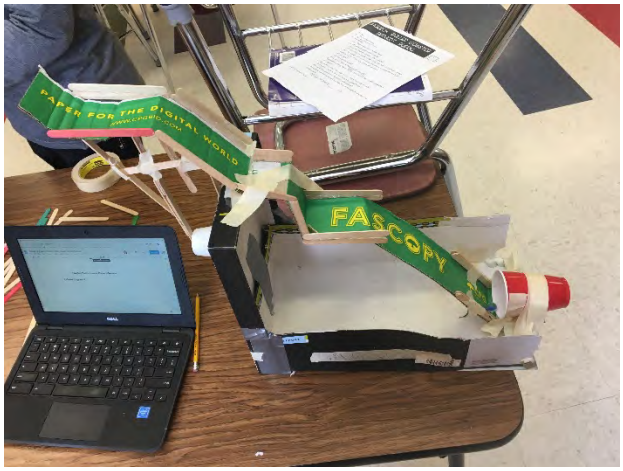
To: Dr. Melanie Oppor

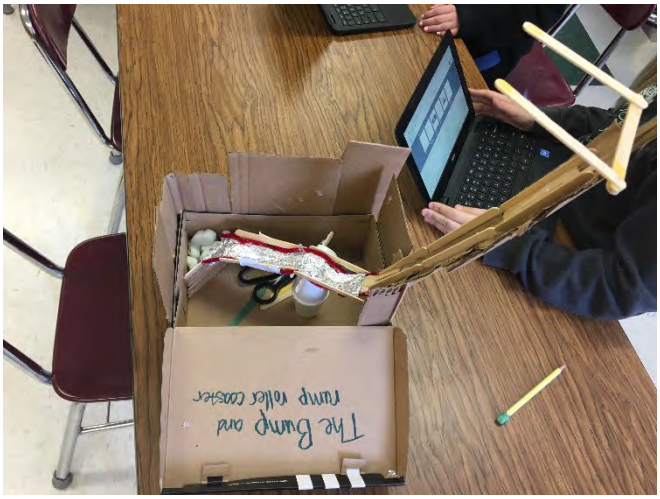
From: Michelle Pukita

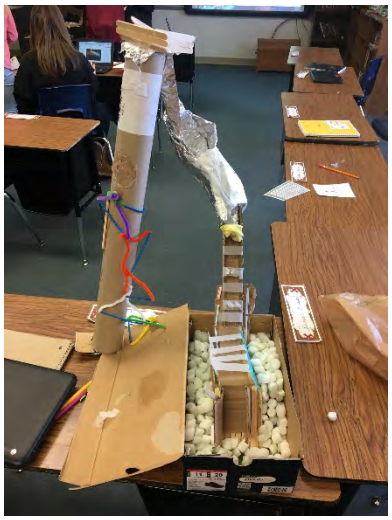
Date: Feb. 12, 2019

Re: Staff and Program Highlights

- The sixth-grade students did a makerspace project in science class where they needed to design a roller coaster. Mrs. Wright gave the students the parameters of the project. Students needed to problem solve how to make it all work with the materials provided to them.







- **Fang's Reading Club**: Fang's Reading Club began Monday, Feb. 11 and runs through Sunday, April 7th. There are individual incentives along with class incentives. On Saturday, June 1st, at 7:05 p.m. in the Manawa Elementary School Game Night.

- **Upcoming Events:** The following dates are things coming up in the next couple of weeks:
  - **Thursday, Feb. 14th, PBIS Quarterly Sledding Incentive**: MES will do doing a sledding day along with hot chocolate for those students who had less than 5 points in office referrals. The students enjoyed this reward last year and asked for this reward again this year.
  - **Thursday, Feb. 14th, Snodeo Presentation**: Matt, a snowmobile racer comes in to speak to grades 4,5,6 about snowmobile racing and how racing has impacted his life.
  - **Friday, Feb. 15th, Kids Heart Challenge:** in the past, this event was titled Jump Rope for Heart. Students will be doing physical activity stations in the gym for 40 minutes at a time.
  - **Week of Feb. 25 – Feb. 28, Read Across America**: Each day will be a different theme along with a dress-up day for everyone. Teachers can choose from several Dr. Suess activities for math and reading.
  - **Thursday, Feb**. **28 Title I Night along with Parent/Teacher Conferences**: A Title Night will be held in the cafeteria to educate parents on math and reading strategies. Teachers and students are working to create displays promoting a math-themed book to tie in math and reading. There will be staff in the cafeteria to promote reading and math to our parents.

MANAWA

Students choosing to excel; realizing their strengths.

To: Dr. Melanie Oppor

Fr: Dan Wolfgram

Date: 2/13/2019

Re: Staff and Program Highlights – February

Thank You! I would like to thank the Manawa School Board for their support by allowing me to attend the 98th Wisconsin State Educators Convention proved to be a dose of reality that we are not alone in the struggles that educators are facing across the state. Often times we tend to believe that other schools do not struggle with similar challenges. The tools we are using to re-shape culture and provide a positive and engaging work environment for all staff are fully endorsed by educators across the state. I am excited about the positive changes Governor Evers is proposing for his budget and his overall support for re-energizing the Wisconsin educational culture. I believe the biggest personal impact was the culmination of the positive changes that are on the horizon for the School District of Manawa and the students we serve.

Student Accomplishments: All winter sports are taking center stage this month as the boys' and girls' varsity basketball teams are poised to claim the title of conference champions. This has not happened in well over a decade and the community and student body are poised for a playoff run. In addition, the wrestling team has sent 6 wrestlers on the sectional round of competition. Powerlifting has also been impressive in its first year of existence. Kudos to students and their coaches!

Both Manawa Quiz Bowl A and B teams are currently in 2nd place behind Shiocton. I am honored to be the official question reader "Alex Trebek" for the home competitions.

The Manawa Art and Music Departments, and Manawa Forensic Teams are busily trying to prepare for their festivals and upcoming completions. The challenges have been real with the amount of school that has been missed. These students will be recognized in an assembly in the month of March. Other activities and organizations to be recognized include but are not limited to music, art, FBLA, and forensics.

ACT Preparation: Teachers have been working with students in specially designed (RtI) sessions for ACT Test Prep. A focus on test-taking strategies has been evident as a sense of urgency is demonstrated by staff. Counselor Connolly and Principal Wolfgram will be designing the best case scenarios for a low teacher to student ratio combined with teachers paired with selected students to provide optimal testing settings. We are hopeful for good weather conditions on Wednesday, February 20th and Thursday, February 21str for the ACT Plus Writing and the ACT WorkKeys assessments.

All-Star Band and Choir Festival: On Saturday, January 26, eight vocal students and seven instrumental students from LWHS participated at the All-Star Honors Band and Choir event. The morning was filled with rehearsals. Over lunch, the students were able to meet students from other local schools, which was followed by even more rehearsal! The event culminated with a 4:00 p.m. concert in the Rosholt High School Auditorium. Kudos to Mrs. Christensen and Mr. Rohan for providing this annual opportunity to our students!

Vocal Arts Festival: On Friday and Saturday, February 1-2, four LWHS students: Alexis Frasier, Star Frasier, Bryce Rausch, and Tyler Thontlin, were selected to participate in the Vocal Arts Festival at the University of Wisconsin-Milwaukee. Director of Choirs, Dr. Zachary Durlam, gathered 200 choir students from Wisconsin and Illinois in a overnight workshop filled with team-building activities, choral singing, vocal masterclasses, a concert by UWM Faculty and students, private voice lessons, and other workshops focusing on topics such as the Tenor Voice, Auditioning, and Acting out the Song. After only seven hours of rehearsal, the Festival Choir performed "Dies Irae" from Requiem by W. A. Mozart, "Water Night" by Eric Whitacre, "Fire" by Katerina Gimon, and "I'll Be On My Way" by Shawn Kirchner, at the beautiful Zelazo Center in Milwaukee.

FBLA Regional Competition Results: Seven members of the FBLA club attended Region II competition Sat. February 2nd in Nekoosa, WI. We had several students place in the top 5 including:

- 1st place for Rylee Kettleson for her outstanding efforts putting together a cover letter, resume and having a successful interview in the Job Interview category. State qualifier.
- 1st place for their Introduction to Business Presentation for Kayla Loughrin and Kyle Kons. They presented a PowerPoint on Giving Tuesday. State qualifiers.
- 4th place for Andrea Wentworth for her prepared speech on Aggressive Business Leadership. Andrea focused on how her father overcame the loss of their barn from a fire.
- 5th place to Ethan Tellock testing in Introduction to Financial Math.

Other participants include Katie Higgins in Computer Problem Solving, Kayde Pagel in Introduction to Public Speaking and Logan Schuelke for Sports & Entertainment Management. Special recognition goes out to Kayde Pagel for singing in front of a crowd of 600 during Region II's Got Talent competition. The state qualifiers will continue on in April when they travel to Green Bay to face FBLA's finest from this year.

Student Gallery Walk Session: Students were invited to attend a question and answer session during (RtI) with Principal Wolfgram based on the drawings that were submitted by Hoffman for the recent Gallery Walks on Thursday, February 14th.

MANAWA

Students choosing to excel; realizing their strengths.

To: Dr. Melanie Oppor

From: Carmen O'Brien

cc: Board of Education

Date: February 18, 2019

Re: Business Office Highlights and Updates

Thank you to the Board of Education for allowing me the opportunity to attend the state joint convention. I made contacts with many of our vendors and reached out to a few new companies. I chose sectionals to learn about wage models, wage incentives, and funding.

The Wage Advancement Committee consists of Jenny Bessette, Cindy Buttles, Jeanne Frazier, Donna King, Carrie Koehn, Jessie Ort, Brenda Suehs, and Diane Teuscher. We have met one time to discuss a new wage advancement model, all other meetings had to be postponed due to weather. We hope to meet Tuesday, February 19, to develop a model that will work for the SDM.

Staff and Program changes was a very difficult process this year as it was the first year since I have been the business manager that significant cuts to the budget had to be made. As one change is made, the ripple effect is felt throughout the district.

The three school vehicles (Food Service van, Large Van, Truck) were serviced and inspected in January. These vehicles are serviced two times per year, once in the summer and once in the winter.

On February 6, 2019, $7.5 million in bond proceeds were deposited into a new referendum investment account with the American Deposit Management Company. I worked with both Hoffman Planning and Design and ADM to streamline a system to pay invoices for the referendum projects.

The Wellness Committee did not meet in February due to school cancelation.

Food Service (from Brenda Suehs, Food Service Manager)

February 4th-8th was Pride in Food Service Week between snow days it was nice to be able to observe and work with the staff to discuss new ways to be more efficient and better our program. We had a couple new recipes we tried during the week and feel they were received well by our customers. The staff indeed have a great pride in what they do, and I am proud to be a part of it.

Looking to the near future we will be celebrating National School Breakfast Week from March 4th-8th. This year's theme is Start your Engines! With some new breakfast ideas and activities, we hope to do just that! Along with celebrating and raising awareness on the importance of breakfast and how it helps students succeed.

Food Service Sales – does not include reimbursements

	October	**November**	**December**	**January**
2018 Total Monthly Sales	$14,295.95	$12,962.35	$10,144.05	$12,659.90
Number of Days	22	19	15	18
Sales per Day	$649.82	$682.23	$676.27	$703.33

Food Service Expenses – does not include salaries

	January	**2018-19 Year to Date**	2017-18 Year to Date
Personal Services	$0	$99	$0
Repair/Maintenance	$0	$9,346.87	$2,900.10
Operations Services	$43.40	$776.56	$0
Employee Travel	$0	$126.44	$289.00
Fuel - Vehicle	$0	$24	$0
Central Supply	$69.31	$7,573.88	$3,975.71
Food	$1,412.67	$41,681.78	$44,248.71
Non-Capital Equipment	$0	$53.27	$0
Other Non-Capital Objects	$0	$160.00	$0
Total	**$1,525.38**	**$59,841.80**	$51,413.52

KOBUSSEN BUSES LTD.

February 12, 2019

Subject: Transportation report, January 2019

To: Manawa School District

The Manawa School District had 18 days of school in January. Manawa ran 26 trips out of the terminal in addition to the daily routes.

Sherida organized our holiday lunch party. The gathering was held at the Manawa Steakhouse on January 9th. It was well received with approximately 20 employees in attendance.

Manawa continues to be a safety leader in our region. This school year, we have not had any accidents, incidents (on or off site), and zero worker compensation claims. Drivers continue to perform at an exceptional level on a daily basis.

Mechanic, Jeff Meyer has been doing a fantastic job with the buses during the extreme cold days that we experienced in January. We have had very minimal to no bus issues during this difficult stretch.

Respectfully Submitted,

Casey Fields
Regional Manager
Kobussen Buses LTD

W914 County Road CE • Kaukauna, WI 54130
Phone: 920-766-0606 / 920-538-1719
casey.fields@kobussen.com

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To: Dr. Melanie J. Oppor, BOE
From: Danni Brauer
Date: 2/8/19
Re: Special Education & Curriculum Update

Special Education

- I am excited about the opportunity I've been given to present at the Spring into Success Presidents' Day conference. I will be presenting to 300 teachers on 2 topics. One workshop will focus on monitoring progress on IEP goals. I will take the teacher through how to write good IEP goals, options of how to get data toward the goals, and how to use Google Sheets to create graphs with progress monitoring data that will illustrate whether or not the student is making progress toward their goals. In the second sectional I will present to teachers who work with the most significantly disabled students. These are the students to take the alternate assessment (Dynamic Learning Maps, DLM). I will the the teachers through the standards the DLM is aligned to, the organization of those standards, how to write IEPs aligned to those standards, and where they can find professional development modules that show instructional strategies that align.
- Mr. Carson and I are finishing our presentation for the Wisconsin Transition Conference on Feb. 21 and 22. We are excited to showcase the Paving the Way program and our journey in creating and growing the program. You will see the presentation at the March board meeting.
- Mrs. Anderson, elementary special education teacher, has begun to train on Zones of Regulation. She is teaching regular education teachers and their students how to talk about how they are feeling and gives them strategies to get them into the "zone" where they learn best. Another area Mrs. Anderson is assisting the building to implement the Moving Company. Mrs. Anderson lead a group of staff members to create a movement break option for the building and created training videos for students and staff. The Moving Company consists of a variety of weighted objects that students move to designated spots around the building when they have the wiggles or just need a break from the classroom.

Curriculum

- Curriculum maps continue to go through the curriculum committee. We are still waiting on the high school science maps. Those will be the last of them for this school year. I will be meeting with teachers in the coming weeks to verify they will be completed this spring.
- The first C&I (Curriculum & Instruction) Advisory Committee will be meeting on Tuesday, February 19th after school. At the first meeting we will: 1. set meeting date/time for standing monthly meeting, 2. review main focus of the committee, and 3. propose potential projects. This committee will propose project and I will bring the list to the admin team. The admin team will discuss and set priority projects. The committee consists of 9 members who represent the following groups: district-wide: special ed, support (reading specialist, reading teacher, interventionist,

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guidance); elementary level: PK-2, 3-6, Specials; Jr/Sr high level: math/eng, sci/SS, at-risk, and electives.

Technology Board Report

February 14, 2019

Technology Committee

Our first meeting date happened despite inclement weather. We discussed how technology is presently used in the classroom and how to improve effectiveness. The team has about four months to work before the summer break. The team choose to review and update our digital literacy curriculum. The 2015 curriculum was based on the former ISTE Standards for Students. New ISTE Standards are available and the team wants to update our curriculum to be current. The plan is to work with Ms. Brauer and the curriculum committee as we perform his work.

Camera Project

The vendor proposals are on the agenda to be reviewed in the March buildings & grounds committee. Our current proposals expire March 3. Our camera vendor is working with the camera manufacture to update the proposals next week with updated pricing.

Manawa Elementary Makerspace

Planning is continuing on the new MES makerspace project. A presentation is planned for the March BoE curriculum committee meeting and March BoE meeting.

MANAWA

Students choosing to excel; realizing their strengths.

To: Board of Education
From: Carmen O'Brien
cc: Dr. Melanie Oppor
Date: February 13, 2019
Re: Fund 80 Analysis

Purpose

The purpose of this memo is to analyze past Fund 80 spending and begin a discussion about how the District would like to utilize these funds in the future.

Rationale

Fund 80 was established by the State of Wisconsin so that at an annual meeting, school district community members could agree to a tax for specific community-based programs. The funds are accounted for by the school district and do not affect the revenue limit calculation. In the SDM, Fund 80 has funded Jr. High sports and the STEP volunteer program. The following is a breakdown of the revenues and expenses in Fund 80 for the current and past 4 years.

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Revenues					
Taxes	$40,000	$40,000	$40,000	$40,000	$40,000
Jr. High Sports Fee	$1,200	$1,235	$1,425	$1,355	$1,180
Total Revenue	**$41,200**	**$41,235**	**$41,425**	**$41,355**	**$41,180**
Expenses					
Jr. High Sports	$22,092.68	$19,377.60	$29,715.50	$25,781.89	$14,415.04
STEP Volunteer	$19,107.32	$21,035.83	$11,591.97	$10,276.27	$11,417.39
Total Expense	**$40,200**	**$40,413.43**	**$41,307.47**	**$36,058.16**	**$25,832.43**
Balance (carry-over)	$0	$821.57	$117.53	$5,296.84	

Recently, there has been discussion about the SDM utilizing Fund 80 to perhaps fund other programs such as the Congregate Dining/Meals-on-Wheels programs for the elderly or a Police Liaison Officer. While both programs are valid uses for Fund 80 money, there are other considerations to be made.

- Any increase to Fund 80 will cause a corresponding tax increase for school district taxpayers. What are the implications to this as the District has just passed a referendum and is currently seeking another referendum? The two recent School Perceptions surveys indicate that taxpayers are concerned about any increase to the tax rate.
- What implications would there be if the SDM became the caterer and congregate meal site to senior citizens?
    - Staffing?
    - Building security?
    - Parking, adequate safety, and available space for senior citizen guests?
    - Custodial services?
    - This program would require and alternate menu and year-round staffing, what is the cost for this? Would Waupaca County cover all of these expenses in their RFP?
- Does the community want to reinstate the Police Liaison Officer position?
- If the Board and community does not wish to raise taxes, would the SDM community consider making cuts to the Jr. High sports or the STEP volunteer program to cover the costs of introducing a new Community Fund project?
- Other?

MANAWA

Students choosing to excel; realizing their strengths.

To: Board of Education

From: Dr. Melanie J. Oppor

Date: February 13, 2019

Re: Instructional Minutes and Inclement Weather Days

The purpose of this memo is to offer a suggested approach to addressing the lost instructional time in the second semester of the 2018-19 school year.

Points considered (in no particular order):

- There is quite a bit of winter left and one never knows when some other challenge may arise (broken water main, dense fog, etc.) that could result in part or all of an inclement weather day.
- What makes quality instructional minutes? The secondary may add minutes to their school day to "stretch" their minutes to meet instructional minute requirements but does adding a minute or two to a class period truly make up for missing six or more days of instruction?
- The six days of lost instruction all occurred in second semester. What impact does this have on the teachers ability to instruct on and the students opportunity to master the content of second semester curriculum standards?
- The second semester is also when the state mandated testing occurs. Will students have had enough time to prepare for the content found on these exams given one less week of instruction?
- Are June make-up days worthwhile learning days? Final exams are generally complete, seniors have graduated and moved on, and youth are thinking about their summer plans.
- How will an extended school year in June impact the district-wide summer school program that is being held at the LWJSHS this summer? Will there be ample time for preparations needed to get the secondary building ready for elementary-aged students?
- Make-up days in June will cause costly delays with construction and remodeling projects looming and contractors eager to get an early start and complete their projects by the target dates set to minimize disruption to instruction.

Suggested approach:

- Make-up Inclement Weather Day 6 (February 12, 2019) – Make Friday, March 1 a student instruction day.
    - This day had been a parent/teacher conference day in the a.m. with teachers dismissed in the p.m. (School recess day for students.)
    - Principals and teachers will work collaboratively to schedule conferences as needed. There will be no hour requirement for the number of conferences that must be held. Parent's requests for conferences will be honored.

- Inclement Weather Day 7 (should it occur) – Use instructional minutes built into daily schedules.
    - MES has enough instructional minutes to accommodate this day based on the current Department of Public Instruction instructional minutes calculator.
    - LWJSHS is proposing to add instructional minutes within the school day to ensure enough minutes exist per the Department of Public Instruction instructional minutes calculator (See Mr. Wolfgram's memo.).

- Inclement Weather Day 8 (should it occur) – Make Monday, April 22 a student instruction day.
    - This day is the Monday after Easter and was scheduled as a school recess day.

- Inclement Weather Day 9 and beyond (should more days occur) – Request Board of Education to excuse any make-up requirements. Contact DPI for an exemption.
    - Summer School 2019 is being held at the LWJSHS for all grades because of the MES parking lot/driveway reconstruction. Personnel need time to move elementary resources and furnishings to LWJSHS.
    - Contractors for the MES parking lot/driveway reconstruction are being scheduled now and need the full summer to complete the project before the opening of 2019-20 that will likely start roughly a week earlier due to construction and remodeling at both facilities.

- Late Start/Early Dismissal (should they occur) - Use instructional minutes built into daily schedules.
    - MES has enough instructional minutes to accommodate this day based on the current Department of Public Instruction instructional minutes calculator.
    - LWJSHS is proposing to add instructional minutes within the school day to ensure enough minutes exist per the Department of Public Instruction instructional minutes calculator (See Mr. Wolfgram's memo.).

MANAWA

Students choosing to excel; realizing their strengths.

To: Dr. Melanie Oppor

Fr: Dan Wolfgram

Date: 2/13/2019

Re: Snow Day Minutes Proposal

The purpose of this memo is to provide information pertaining to the addition of instructional minutes as part of the overall plan for snow day makeup.

The current school day at Little Wolf Jr./Sr. High School begins at 7:45 a.m. and ends at 3:05 p.m. Additional minutes can be recaptured within the confines of these parameters by reducing pass times from 4 minutes to 3 minutes. 9 minutes of instruction per day would be gained. This number is multiplied by the number of remaining days (71) to arrive at our sum for additional minutes gained.

If implementation begins on Tuesday, February 19th, this plan would yield an additional 639 minutes. This would recapture one full day plus 3.31 hours of instruction. This plan would not alter bus schedules, nor conflict with any of St. Paul's school day.

High School	New Times		Old Times		Old Minutes	New Minutes
1st	7:45	8:36	7:45	8:35	50	51
2nd	8:39	9:30	8:39	9:29	50	51
3rd	9:33	10:24	9:33	10:23	50	51
4th	10:27	11:18	10:27	11:17	50	51
5th	11:21	12:12	11:21	12:11	50	51
lunch	12:12	12:40	12:11	12:41		
6th	12:43	1:34	12:45	1:35	50	51
7th	1:37	2:28	1:39	2:29	50	51
RTI	2:31	3:05	2:33	3:05	32	34
					382	391

Junior High			Old Times		Old Minutes	New Minutes
1st	7:45	8:48	7:45	8:48	63	63
2nd	8:52	9:55	8:52	9:55	63	63
3rd	9:59	11:03	9:59	11:02	63	64
Lunch	11:03	11:31	11:02	11:32		
4th	11:35	12:40	11:36	12:41	65	65
5th	12:43	1:34	12:45	1:35	50	51
6th	1:37	2:28	1:39	2:29	50	51
RTI	2:31	3:05	2:33	3:05	32	34
					386	391

Minutes of the February 5, 2019 Curriculum Committee Meeting

The meeting opened at 4:05 p.m. in the Board Room
Place: Board Room, MES, 800 Beech Street, Manawa

Board Committee Members: Scheller (C), Pohl.
Hollman absent
In Attendance: Danni Brauer, Dr. Oppor

1. Science Curriculum Mapping Gr. K-8
Actionable
Pohl/Scheller motion to recommend the Science Curriculum Mapping Gr. K-8 as corrected to the whole BOE. Motion carried.

2. Financial Literacy Curriculum Map
Actionable
Pohl/Scheller motion to recommend the Financial Literacy Curriculum Map to the whole BOE. Motion carried.

3. Business and Personal Law Curriculum Map Actionable
Pohl/Scheller motion to recommend the Business and Personal Law Curriculum Map as corrected to the whole BOE. Motion carried.

4. Next Meeting Date: March 5, 2019 at 5:30 p.m.

Adjourn at 4:25 p.m.

Submitted by Hélène Pohl

Minutes of the February 13, 2019 Finance Committee Meeting

The meeting was called to order at 5:56 p.m. (immediately following the special BOE meeting) in the MES Board Room.

Board Committee Members: Pohl (C), R. Johnson, J. Johnson

In Attendance: Pohl, R. Johnson, J. Johnson, Pethke, Scheller, Forbes, Admin Team, members of the public

Timer: J. Johnson; Recorder: J. Johnson

1. Budget Forecasting Presentation - Mrs. O'Brien (Information): Informational.

2. Consider Endorsement of Staff and Program Change Proposal for SY1920 - Admin Team (Information / Action): **Motion by J. Johnson/R. Johnson** to Endorse Staff and Program Change Proposal for SY 1920 and recommend to full Board as presented. Motion carried.

3. Budgeting Plan for Fund 46 Sustainability - Mrs. O'Brien (Information / Action): **Motion by J. Johnson/R. Johnson** to table. Motion carried.

4. Analysis of Fund 80 - Community Fund (Information / Action): **Motion by J. Johnson/R. Johnson** to bring to full Board for discussion at February 18, 2019 meeting. Motion carried.
   a. STEP
   b. Middle School Sports
   c. Congregate Dining/Meals-on-Wheels Programs
   d. Police Liaison Officer
   e. Mental Health Services
   f. Other

5. Fitness Center Usage Guidelines (Information / Action): **Motion by J. Johnson/R. Johnson** to table. Motion carried.

6. Inclement Weather Implications - Mrs. O'Brien (Information / Action): Informational, will be presented to full Board for discussion.

Next Finance Committee Meeting Date: March 5, 2019 Immediately following Curriculum Committee.

10. Adjourn : **Motion by J. Johnson/R. Johnson** to adjourn. Motion carried at 7:57 pm.

Book	Policy Manual
Section	6000 Finances
Title	Copy of PURCHASING
Code	po6320
Status	First Reading
Adopted	July 18, 2016
Last Revised	August 22, 2016

6320 - **PURCHASING**

Procurement of all supplies, materials, equipment, and services paid for from District funds shall be made in accordance with all applicable Federal and State statutes, Board policies, and administrative guidelines. Standards of conduct covering conflicts of interest and governing the actions of its employees engaged in the selection, award, and administration of contracts as established by Policy 1130, Policy 3230, and Policy 4230 – Conflict of Interest.

All procurement transactions shall be conducted in a manner that encourages full and open competition and in accordance with good administrative practice and sound business judgment.

It is the policy of the Board of Education that the District Administrator seek at least two (2) price quotations on purchases of more than $10,000 for a single item, except in cases of emergency or when the materials purchased are of such a nature that price negotiations would not result in a savings to the District.

When the purchase of, and contract for, single items of supplies, materials, or equipment is reasonably anticipated to reach the amount of $10,000 or more, the Business Manager shall obtain competitive bids. Purchase of and contract for projects will be subject to a competitive bid process as and when required by law.

Bids shall be sealed or may be submitted electronically and shall be opened by the Business Manager in the presence of at least one (1) – Board Member-. A bidder may be required to submit a sworn statement regarding:

A. financial ability to complete the contract;

B. nature and quality of equipment to be used in performing the contract;

C. experience and past performance in performing the contract;

D. such other information the District deems relevant to the protection and welfare of the public in the performance of the contract.

Such statements shall be delivered to the District no later than five (5) days prior to the bid opening and shall be kept confidential by the District, except upon the written order of the person submitting the statement or on behalf of whom the statement is submitted, for the necessary use by the District in qualifying the person/bidder or the District. The statements shall be reviewed and the bidder notified if is qualified to submit a bid.

The Board reserves the right to reject any and all bids.

Contracts can be awarded by the Business Manager without Board approval for any single item or group of identical items costing less than $10,000. All other contracts require Board approval prior to purchase.

The Board shall be informed of the terms and conditions of all competitive bids and shall award contracts as a consequence of such bids.

Purchasing Items with Federal Grant Funds

When purchasing items with Federal funds a District shall:

A. give consideration to whether separating or combining purchases will provide for a more cost-effective approach to avoid acquisition of unnecessary or duplicative items;

B. where appropriate, conduct an analysis of lease versus purchase options and the most economical and beneficial method shall be pursued;

C. conduct an evaluation of the availability and feasibility of entering into inter-governmental agreements to procure the goods or services required on a shared basis;

D. in the case of a time and material contract, make a determination that no other arrangement is suitable and that the contract places a ceiling price that protects the District.

General Provisions

The District Administrator is authorized to purchase all items within budget allocations.

The Board should be advised, for prior approval, of all purchases of equipment, materials, and services when the purchase was not contemplated during the budgeting process or if the purchase varies materially from the function or scope as budgeted.

The District Administrator is authorized to make emergency purchases, without prior approval, of those goods and/or services needed to keep the schools in operation. Such purchases shall be brought to the Board's attention at the next regular meeting.

In order to promote efficiency and economy in the operation of the District, the Board requires that the Business Manager periodically estimate requirements for standard items or classes of items and make quantity purchases on a bid basis to procure the lowest cost consistent with good quality.

Whenever storage facilities or other conditions make it impractical to receive total delivery at any one time, the total quantity to be shipped shall be made a part of the bid specifications.

Before the employee places a purchase order, s/he shall have the Business Manager check whether: (a) the proposed purchase is subject to bid, (b) whether sufficient funds exist in the budget and (c) the goods or services might be available elsewhere in the District. All purchase orders shall be numbered consecutively.

In the interests of economy, fairness, and efficiency in its business dealings, the Board requires that:

A. items commonly used in the various schools or units thereof, be standardized whenever consistency with educational goals can be maintained;

B. opportunity be provided to as many responsible suppliers as possible to do business with the School District;

C. a prompt and courteous reception, insofar as conditions permit, be given to all who call on legitimate business matters;

D. where the requisitioner has recommended a supplier, the Business Manager may make suggestion alternatives to the requisitioner if, in his/her judgment, better service, delivery, economy, or utility can be achieved by using a different supplier;

E. upon the placement of a purchase order, the Business Manager shall commit the expenditure against a specific line item to guard against the creation of liabilities in excess of appropriations.

The District Administrator shall determine the maximum expenditure allowed without a properly signed purchase order.

Employees may be held personally responsible for anything purchased without a properly signed purchase order or authorization.

The Board may acquire office equipment by lease, installment payments, lease-purchase agreements, or by lease with an option to purchase, provided the contract sets forth the specific terms, including price, of such a purchase.

Debarred Contractors Excluded

The District shall not award any contract, agreement or subcontract for goods or services to any party that has been suspended or debarred from receiving contracts or subcontracts by the Federal Acquisition Regulations (FAR).

For any contract or subcontract with a value in excess of $25,000, the District shall include a provision in the contract or as a condition of any subcontract award that the contracting party attest that it is not at the time of contracting a suspended or debarred party under the Federal Acquisition Regulations and that, if at any time during performance of the services or delivery of goods in the applicable contract, said contractor or subcontractor should be identified as a suspended or debarred entity by the General Services Administration, the contractor or subcontractor shall immediately notify the District of that fact, which shall serve as sufficient grounds to terminate the contract as the District determines is appropriate.

Revised 8/22/16

Legal	120.12(24), Wis. Stats.
	66.0133, Wis. Stats.
	2 C.F.R. 200.213
	2 C.F.R. 200.318
	2 C.F.R. 200.319
	2 C.F.R. 200.320
	2 C.F.R. 200.321
	2 C.F.R. 200.322
	2 C.F.R. 200.323
	2 C.F.R. 200.324
	2 C.F.R. 200.325
	2 C.F.R. 200.326
	48 C.F.R. Section 9.4

Last Modified by Melanie Oppor on January 15, 2019

SCHOOL DISTRICT OF MANAWA
2019 - 2020 SCHOOL CALENDAR
Final Draft

- No School
- O P/T Conferences
- Early Release / Staff Development
- End of Quarter / Semester
- Inservice (No School)
- 1 Hr Early Release Day

7 Insrvc/Work Days
2 PT Conf (15 hours)
2 Holidays
177 Student Days (face-to-face)
188 contract days

JULY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

4 - Independence Day Observed

AUGUST

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

13 - New Curriculum Day
16 - New Teacher Orientation
5-23 All District Staff Floating Work Day-Specialized Training
5-23 Teacher Floating Day
19 - All Teacher In-Service
20 - All District Staff In-service a.m. Work in Buildngs
20 - p.m. - Back to School Night 3:30 to 6:30 p.m.
26 - 1st Day of School
5 Student Days - 4 Inservice Days

SEPTEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

2 - Labor Day - No School
20 Student Days / 1 Holiday

OCTOBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

24 - Early Release - P/T Conf 12:30 to 8:00 p.m.
25 - No School
30 - End of 1st Quarter (46 days)
22 Student Days / 1 PT Conf / .5 Inservice

NOVEMBER

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

8 - Early Release / Staff Development
27-29 No School - Thanksgiving
18 Student Days / .5 Inservice

DECEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

16 - BOE Meeting
23-31 No School - Holiday Break
15 Student Days

1 - No School - Holiday Break
17 - End of 2nd Qtr (46 days)
17 - End of 1st Semester
20 - Records / Inservice - No School
21 Student Days - 1 Inservice

6 - P/T Conf 3:30 - 6:30 p.m. Both Schools
7 - No School P/T Conf 7:30 to Noon
17- No School - Inservice Day
18 Student Days / 1 Inservice / 1 PT Conf

2-6 - Spring Break - No School
27 - End of 3rd Quarter (42 days)
17 Student Days

10 - Holiday Break - No School
21 Student Days

23 - Commencement Ceremony
25 - No School - Memorial Day
29- Last Day of School (43 Days)
30 - Recognition Breakfast / Records & Check out
20 Student Days / 1 Holiday / 1 Inservice

JANUARY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY

S	M	T	W	T	F	S
						1
2	3	4	5	O	6	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

MARCH

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	28
19	20	21	22	23	24	25
26	27	28	29	30		

MAY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Course Name:	Kindergarten Science		
Credits:	N/A		
Prerequisites:	N/A		
Description:	A comprehensive collection of Science topics: Trees and Weather, Materials and Motion, and Animals.		
Academic Standards:	Wisconsin's Science Standards		
Units:	**Unit Length:**	**Unit Standards:**	**Unit Outcomes:**
Trees and Weather	Three Months	SCI.ESS2.D SCI.LSI.A SCI.LS1.C	Students will learn about the different parts and uses of trees. Students will be able to identify different types of weather.
Materials and Motion	Three Months	PS1-1 PS1-3 PS2-1 PS2-2	Students will explore different materials (wood, paper, and fabric). Students will learn pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.
Animals Two By Two	Three Months	LS-1 ESS2-2 ESS3-1	Students will explore some common land and water animals. Students will learn what animals need to live and grow.

Unit Name: **Trees and Weather**	**Length:** Three Months
Standards: SCI.ESS2.D SCI.LSI.A SCI.LS1.C	**Outcomes:** Students will learn about the different parts and uses of trees. Students will be able to identify different types of weather.
Essential Questions: What are the parts of a tree? What are the shapes of leaves? How are they different? How and why is Earth constantly changing? How do trees change throughout the year?	**Learning Targets:** I can identify different types of weather (sunlight, wind, snow, rain). I can identify the parts of a tree (branches, leaves, trunk, roots). I can tell what plants need to survive (water, light).
Topic 1: **Observing Trees**	**Length:** Four Weeks
Standard(s): SCI.LS1.A.1 SCI.LS1.C.K	**Academic Vocabulary:** branches, leaves, trunk, roots
Lesson Frame: Observing Schoolyard Trees	I can discuss how trees are useful to people and wild animals.
Lesson Frame: Tree Parts	I can use picture and words cards to identify the main parts of trees.
Lesson Frame: Tree Puzzles	I can use puzzles to learn and compare the different shapes of trees.
Lesson Frame: Tree-Silhouette Cards	I can analyze and match tree silhouettes.
Performance Tasks: Teacher observation and journals.	Notes:
Topic 2: **Observing Leaves**	**Length:** Four Weeks
Standard(s): SCI.LSI.A	**Academic Vocabulary:** edge, lobed, toothed, rounded, tip
Lesson Frame: Leaf Walk	I can observe differences and similarities between leaves on trees.
Lesson Frame: Leaf Shapes	I can observe and match leaf shapes.
Lesson Frame: Comparing Leaves	I can tell how leaves are different.
Lesson Frame: Matching Leaf Silhouettes	I can match leaves based on their shape, size, and edges.
Lesson Frame: Leaf Books	I can create a book of various leaves.
Performance Tasks: Teacher observation and journals.	Notes:

Topic 4: **Trees through the Seasons**	**Length:** Four Weeks
Standard(s): SCI.ESS2.D	**Academic Vocabulary:** monitor, overcast, partly cloudy, temperature, thermometer, weather, weather instrume
Lesson Frame: Weather Calendar	I can tell and record the daily weather.
Lesson Frame: Recording Temperature	I can use a thermometer to tell the temperature.
Lesson Frame: Wind Directions	I can make a windsock to use to tell about wind direction.
Performance Tasks: Teacher observation and weather graph.	Notes:

Unit Name: **Materials and Motion**	**Length:** Three Months
Standards: PS1-1 PS1-3 K-PS2-1 K-PS2-2	**Outcomes:** Students will explore different materials (wood, paper, and fabric). Students will learn pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.
Essential Questions: How can you change the shape of wood? How can paper be made strong to form a bowl? How are fabrics different? What causes objects to move?	**Learning Targets:** I can describe different kinds of materials (wood, paper, and fabric). I can construct an object made from a small set of pieces (particleboard, plywood, and papier-mache). I can compare the effects of different strengths or directions of pushes and pulls on an object.
Topic 1: **Getting to Know Wood**	**Length:** Three Weeks
Standard(s): PS1-1 PS1-3	**Academic Vocabulary:** sink, float, compare, test, sawdust, shavings, waterlogged, evaporate, plywood, particleboard
Lesson Frame: Observing Wood	I can observe different kinds and forms of wood found in my home and school environment.
Lesson Frame: Wood and Water	I can observe how wood and water interact.
Lesson Frame: Testing a Raft	I can find ways to sink floating wood samples by attaching paper clips to wood with rubber bands.
Lesson Frame: Sanding Wood	I can use my knowledge of wood and lear how to change wood.
Lesson Frame: Sawdust and Shavings	I can compare sawdust and shavings.
Lesson Frame: Making Particleboard	I can make particleboard.
Lesson Frame: Making Plywood	I can make plywood from thin strips of wood and glue.
Performance Tasks: Create Particleboard Create Plywood Teacher Observation Journals	Notes:
Topic 2: **Getting to Know Paper**	**Length:** Three Weeks
Standard(s): PS1-1 PS1-3	**Academic Vocabulary:** paper, chipboard, constructions paper, corrugated cardboard, corrugated paper, facial tissue, newsprint, paper Towel, tagboard, waxed paper
Lesson Frame: Paper Hunt	I can observe and compare the properties of ten kinds of paper.
Lesson Frame: Using Paper	I can use crayons, pencils, and marking pens to explore and compare the properties of paper that make it suitable or unsuitable for writing and drawing.

Lesson Frame: Paper and Water	I can drop water on ten different paper samples and observe and compare the results.
Lesson Frame: Paper Recycling	I can explore papermaking and recycling.
Lesson Frame: Papier-Mache	I can use wheat paste to mold strips of newspaper over a small container.
Performance Tasks: Make paper from facial tissue. Teacher Observation Journals	Notes:
Topic 3: **Getting to Know Fabrics**	**Length:** Three Weeks
Standard(s): PS1-1 PS1-3	**Academic Vocabulary:** burlap, cloth, conserve, corduroy,denim, fabric, recycle, reuse, texture, thread
Lesson Frame: Feely Boxes and Fabric Hunt	I can observe the properties of ten different fabrics (burlap, corduroy, denim, fleece, knit, ripstop nylon, satin, seersucker, sparkle organza, and terry cloth).
Lesson Frame: Taking Fabric Apart	I can investigate the structure of woven fabrics by disassembling and comparing loosely woven burlap and tightly woven wool plaid.
Lesson Frame: Water and Fabric	I can investigate how fabrics interact with water.
Lesson Frame: Graphing Fabric Uses	I can think about the kinds of fabric that would make a good pair of pants and other items of clothing.
Lesson Frame: Reuse and Recycle Resources	I can explore natural resources and the need to reuse and recycle materials.
Lesson Frame: Building Structure	I can place cups of water outdoors in the sunshine and shade and compare the water temperature after at least 15 minutes.
Performance Task: Build a structure from materials to block sunlight. Teacher Observation Journals	Notes:
Topic 4: **Getting Things to Move**	**Length:** Three Weeks
Standard(s): PS1-1 PS1-3	**Academic Vocabulary:** cause, collide, collision, direction, distance, affect, gravity, pull, push, speed, strength
Lesson Frame: Pushes and Pulls	I can observe and describe how a push or pull causes something to move.
Lesson Frame: Colliding Objects	I can use balls and ramps to achieve different speeds.
Lesson Frame: Rolling Outdoors	I can find slopes in the schoolyard that can be used to set balls in motion.
Lesson Frame: Balloon Rockets	I can observe a balloon-rocket system to find out how far the air in the balloon will propel the system along the flight line.

Performance Task: Observe and describe how objects move. Create balloon-rockets. Journals Teacher Observation	Notes:

Unit Name: **Animals Two by Two**	**Length:** Three Months
Standards: K-LS-1 K-ESS2-2 K-ESS3-1	**Outcomes:** Students will explore some common land and water animals. Students will learn what animals need to live and grow.
Essential Questions: What do animals such as fish and birds need to live and grow? What do animals such as snails need to live and grow? What do animals such as worms need to live and grow? What do animals such as isopods need to live and grow?	**Learning Targets:** I can describe what plants and animals need to survive. I can explain how plants and animals (including humans) can change the environment to meet their needs. I can use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
Topic 1: **Goldfish and Guppies**	**Length:** Three Weeks
Standard(s): K-LS1-1 K-ESS2-2 K-ESS3-1	**Academic Vocabulary:** aquarium, bill, compare, female, male, fin, gill, guppy, scale
Lesson Frame: The Structure of Goldfish	I can observe goldfish living in a simple aquarium.
Lesson Frame: Caring for Goldfish	I can learn how to care for goldfish.
Lesson Frame: Goldfish Behavior	I can add a tunnel to the aquarium to observe how the fish respond.
Lesson Frame: Comparing Guppies to Goldfish	I can compare the structures and behaviors of guppies to those of goldfish, and identify the guppies by gender.
Lesson Frame: Comparing Schoolyard Birds	I can go bird watching to observe and compare the structures and behaviors of two types of common schoolyard birds.
Performance Tasks: Teacher Observation Journals	Notes:
Topic 2: **Water and Land Snails**	**Length:** Three Weeks
Standard(s): K-LS1-1 K-ESS2-2 K-ESS3-1	**Academic Vocabulary:** land snail, sea animal, tentacle, terrarium, vial, water snail
Lesson Frame: Observing Water Snails	I can explore two kinds of aquatic snails.
Lesson Frame: Shells	I can observe seashells.
Lesson Frame: Land Snails	I can collect and get to know local land snails.
Performance Tasks: Teacher Observations Journals	Notes:

Topic 3: **Big and Little Worms**	**Length:** Three Weeks
Standard(s): K-LS1-1 K-ESS2-2 K-ESS3-1	**Academic Vocabulary:** bristle, clitellum, segment
Lesson Frame: The Structure of Redworms	I can dig through a terrarium to discover that there are redworms living in the soil.
Lesson Frame: Redworm Behavior	I can focus on the movement and behavior of redworms.
Lesson Frame: Comparing Redworms to Night Crawlers	I can discover a new kind of worm in their terrarium- night crawlers.
Performance Task: Teacher Observations Journals	Notes:
Topic 4: **Pill Bugs and Sow Bugs**	**Length:** One Months
Standards: K-LS1-1 K-ESS2-2 K-ESS3-1	**Academic Vocabulary:** antenna, ball, carapace, isopod, jagged, moisture, pill bug, sow bug
Lesson Frame: Isopod Observation	I can investigate two kinds of isopods (sowbugs and pill bugs).
Lesson Frame: Identifying Isopods	I can compare the isopods and sort them into two groups.
Lesson Frame: Isopod Movement	I can go the the schoolyard to find isopods.
Lesson Frame: Animals Living Together	I can build a class terrarium to observe how several animals live together.
Performance Task: Teacher Observation Journals	Notes:

Course Name:	First Grade Science		
Credits:	n/a		
Prerequisites:	n/a		
Description:	Science topics including Sound and Light, Air and Weather, and Plants and Animals.		
Academic Standards:	Next Generation Science Standards		
Units:	**Unit Length:**	**Unit Standards:**	**Unit Outcomes:**
Sound and Light	1st Quarter	I can plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. I can make observations to construct an evidence-based account that objects can be seen only when illuminated. I can plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. I can use tools and materials to design and build a device that uses light or sound to solve the problem of communication over a distance.	Students will understand vibrating objects make sound; sound always comes from vibrating matter. Objects stop sound when they stop vibrating.
Plants and Animals	2nd Quarter	I can use materials to design a solution to a human problem by mimicking how plants and/or animals use their external part to help them survive, grow, and meet their needs. I can make observations to construct evidence-based account that young plants and animals are like, but not exactly like, their parents.	Seeds need water to grow into new plants. Not all plants grow alike. Plant roots take in water and nutrients, and leaves make food from sunlight. Seeds are alive and grow into new plants. Plants have different structures that function in growth and survival. Individuals of the same kind (of plant or animal) look similar but also vary in many ways. Plants need water, nutrients, air, space, and light; animals need water, food, air, and space with shelter. A habitat is a place where plants and animals live. Plants and animals live in different environments and have structures and behaviors that help them survive. Engineers learn from nature to solve problems.
Air and Weather	4th Quarter	I can use observations of the sun, moon, and stars to describe patterns that can be predicted. I can make observations at different times of year to relate the amount of daylight to the time of year.	Weather describes conditions in the air outside. Temperature describes how hot or cold the air is. Temperature is measured with a thermometer. Clouds are made of liquid water drops that fall to Earth as rain. Wind moves clouds in the sky. The Sun and Moon can be observed moving across the sky; we see them at different locations in the sky, depending on the time of day or night.

Physical Science: **Sound and Light**	**Length:** 12 weeks
Standards: I can plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. I can make observations to construct an evidence-based account that objects can be seen only when illuminated. I can plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. I can use tools and materials to design and build a device that uses light or sound to solve the problem of communication over a distance.	**Outcomes:** Students will understand vibrating objects make sound; sound always comes from vibrating matter. Objects stop sound when they stop vibrating.
Topic 1: **Sound and Vibrations**	**Length:** 3 weeks
Essential Questions: What causes sound? What kinds of sounds are easy to identify? What information does sound give us?	**Learning Targets:** Vibration is a rapid back-and-forth motion. Vibrating objects make sound; sound always comes from a vibrating object. Objects stop making sound when they stop vibrating. Sound can make objects vibrate. Sounds can convey information. Ears are one kind of sound receiver. Sound sources can be natural or human-made. Words can describe the sounds objects make.
Standard(s): PS4.A: Wave Properties - Sound can make matter vibrate, and vibrating matter can make sound.	**Academic Vocabulary:** back-and-forth motion, compare, ear, hear, identify, information, listen, loud, observe, pluck, property, soft, sound, sound receiver, sound source, table fiddle, tuning fork, vibrate, vibration
Lesson Frame: Part 1 - Making Sounds	Students will know that vibration is a rapid back-and-forth motion. Vibrating objects make sound; sound always comes from a vibrating object. Objects stop making sound when they stop vibrating.
Lesson Frame: Part 2 - Hearing Sounds	Students will know vibrating objects make sound; sound always comes from a vibrating object. Sound can make objects vibrate. Sounds can convey information. Ears are one kind of sound receiver.
Lesson Frame: Part 3 - Outdoor Sounds	Students will know ears are one kind of sound receiver. Sound sources can be natural or human-made. Words can describe the sounds objects make.
Performance Tasks: Identify a variety of sound sources and receivers. Plan and carry out sound investigations (rubber bands, tongue depressors, table fiddle, book fiddle, tuning forks, tone generator). Analyze and interpret sound information.	Notes: Science Notebook Entry: Making sounds, hearing sounds, answer the focus question. Science Resources Book - "Vibrations and Sound", "Listen to This" Online Activity - "Sorting Sounds" Investigation 1 I-Check
Topic 2: **Changing Sound**	**Length:** 3 weeks

Essential Questions: How can we make loud and soft sounds? How can we make low-pitched and high-pitched sounds? How does sound travel from the source to the receiver? How can we use sound to communicate over long distances?	**Learning Targets:** Vibration is a rapid back-and-forth motion. Vibrating objects make sound; sound always comes from a vibrating source. Volume is how loud or soft a sound is. Pitch is how high or low a sound is. Large objects tend to vibrate slower than small objects. High-pitched sounds come from objects that vibrate rapidly. A system is made of parts that work together. Sound vibrations travel through objects and the air. Drawings can show how sound travels from a source to the receiver. Engineers design communication devices.
Standard(s): PS4.A, PS4.C, LS1.D, ETS1.A, ETS1.B, ETS1.C	**Academic Vocabulary:** Communicate, direction (away, toward), gentle, guitar, har, high-pitched, instrument, Kalimba, length, low-pitched, medium-pitched, message, pitch, spoon-gong system, string, system, travel, volume, xylophone
Lesson Frame: Part 1 - Changing Volume	Students will know vibration is a rapid back-and-forth motion. Vibrating objects make sound; sound always comes from a vibrating source. Volume is how loud or soft a sound is.
Lesson Frame: Part 2 - Changing Pitch	Students will know pitch is how high or low a sound is. Large objects tend to vibrate slower than small objects. High-pitched sounds come from objects that vibrate rapidly.
Lesson Frame: Part 3- Spoon-Gong Systems	Students will know a system is made of parts that work together. Sound vibrations travel through objects and the air. Drawings can show how sound travels from a source to the receiver.
Lesson Frame: Part 4 - Sound Challenges	Students will know vibrating objects make sound; sound always comes from a vibrating object. Engineers design communication devices.
Performance Tasks: Design a device to send messages by modifying two spoon-gong systems.	Notes: Science Notebook Entry - Changing volume, changing pitch, the Kalimba, spoon-gong systems, string-cup telephone Science Resources Book - "Animal ears and Hearing", "Strings in Motion", "More Musical Instruments" Investigation 2 I-Check
Topic 3: **Light and Shadows**	**Length:** 3 weeks
Standards: PS4.B	**Academic Vocabulary:** block, dark, flashlight, light, light source, opaque, shade, shadow, sun, sunlight, translucent, transparent

Essential Questions: What makes a shadow? How can we use the Sun to create shadows? What happens when different materials block light?	**Learning Targets:** Light sources are objects or systems that give off light. Shadows are the dark areas that result when light is blocked. To make a shadow, you need a light source, an object to block the light, and a surface in back of the object. The length and direction of the shadow depends on the position of the light source. Shadows change during the day because the position of the Sun changes in the sky. Light travels away from a source in all directions. Materials that are opaque block light. Materials that are transparent allow light to pass through them. Materials that are translucent allow some light to pass through them.
Lesson Frame: Part 1 - Making Shadows	Students will know light sources are objects or systems that give off light. Shadows are the dark areas that result when light is blocked. To make a shadow, you need a light source, an object to block the light, and a surface in back of the object.
Lesson Frame: Part 2 - Sun and Shadows	Students will know shadows are the dark areas that result when light is blocked. The length and direction of the shadow depends on the position of the light source. Shadows change during the day because the position of the Sun changes in the sky.
Lesson Frame: Part 3 - Light and Materials	Students will know light travels away from a source in all directions. Materials that are opaque block light. Materials that are transparent allow light to pass through them. Materials that are translucent allow some light to pass through them.
Performance Tasks: Plan and carry out shadow investigations. Analyze and interpret data about materials blocking light	Notes: Science Notebook Entry - Making shadows, sun and shadows, light and materials Science Resources Book - "Playing in the light" Video - "Light and Shadows", "All About Light", "My Shadow" Investigation 3 I-Check
Topic 4: **Light and Shadows**	**Length:** 3 weeks
Standards: PS4.B, PS4.C, LS1.D, ETS1.A, ETS1.B, ETS.C	**Academic Vocabulary:** angel, eye, light detector, mirror, model, redirect, reflect, reflection, vision.
Essential Questions: How can we redirect a light beam? What can we see with a mirror? What can be seen with no light? How can we communicate with light?	**Learning Targets:** Light sources are objects or systems that give off light. A mirror can be used to redirect light. Light travels in straight lines. Mirror images are the result of light reflected from a surface. Light travels in straight lines. Mirror images are the result of light reflected from a surface. Light travels in straight lines. An image produced by something that reflects, such as a mirror, is always reversed. Light is necessary for animals to see. Animal eyes receive light from objects and transfer the light to the brain to interpret as vision. Animal eyes are not all the same. There are different sizes, shapes, and placements on the head. Light can be used to communicate over long distances. Flashing lights of different colors communicate different information.
Lesson Frame: Part 1 - Mirrors and Light Beams	Students will know that light sources are objects or systems that give off light. A mirror can be used to redirect light. Light travels in straight lines.

Lesson Frame: Part 2 - Reflections	Students will know mirror images are the result of light reflected from a surface. Light travels in straight lines. An image produced by something that reflects, such as a mirror, is always reversed.
Lesson Frame: Part 3 - Eyes and Seeing	Light is necessary for animals to see. Animal eyes receive light from objects and transfer the light to the brain to interpret as vision. Animal eyes are not all the same. There are different sizes, shapes, and placements on the head.
Lesson Frame: Part 4 - Designing with Light	Students will know light travels in straight lines. Light can be used to communicate over long distances. Flashing lights of different colors communicate different information.
Performance Tasks: Plan and carry out investigations with light and mirrors. Meet design challenges using light and mirrors.	Notes: Sciences Notebook Entry - Mirrors and Light Beams, Reflections, Eyes and Seeing, Designing with Light Science Resources Book - "Reflections", "Seeing the Light", "Communicating with Light" Video - "Light and Darkness" Investigation 4 I-Check

Unit Name: **Plants and Animals**	**Length:** 12 weeks
Standards: I can use materials to design a solution to a human problem by mimicking how plants and/or animals use their external part to help them survive, grow, and meet their needs. I can make observations to construct evidence-based account that young plants and animals are like, but not exactly like, their parents.	**Outcomes:** Seeds need water to grow into new plants. Not all plants grow alike. Plant roots take in water and nutrients. Leaves make food from sunlight. Seeds are alive and grow into new plants. Plants have different structures that function in growth and survival. Individuals of the same kind (of plant or animal) look similar but also vary in many ways. Plants need water, nutrients, air, space, and light; animals need water, food, air, and space with shelter. A habitat is a place where plants and animals live. Plants and animals live in different environments and have structures and behaviors that help them survive. Engineers learn from nature to solve problems.
Topic 1: **Grass and Grain Seeds**	**Length:** 6 weeks
Essential Questions: What happens to ryegrass and alfalfa seeds in moist soil? What happens to the grass and alfalfa plants after we mow them? How does a wheat seed grow? How many different kinds of plants live in an area of the schoolyard?	**Learning Targets:** Students will know seeds need water to grow into new plants. Seeds need water to begin growth. Plants need water, nutrients, air, and space to grow. Students will know not all plants grow alike. There are variations in structures that serve the same function. Some plants die if they are cut near the ground, while others continue to live. Students will know wheat and other cereals that we eat come from seeds called grains. Seeds are alive and grow into new plants. Seeds need water to begin growth. Plants have different structures for growth and survival. Plant roots take in water and nutrients. Leaves make food from sunlight.
Standards: LS1.1, LS1.2	**Academic Vocabulary:** alfalfa, blade, fertilizer, function, grain, lawn, leaf, light, mow, nutrient, observe, plant, root, ryegrass, seed, soil, sprout, stem, structure, variation, wheat
Lesson Frame: Part 1 - Lawns	Students will know seeds need water to grow into new plants. Seeds need water to begin growth. Plants need water, nutrients, air, and space to grow.
Lesson Frame: Part 2 - Mowing the Lawn	Students will know not all plants grow alike. There are variations in structures that serve the same function. Some plants die if they are cut near the ground, while others continue to live.
Lesson Frame: Part 3 - Wheat	Students will know wheat and other cereals that we eat come from seeds called grains. Seeds are alive and grow into new plants. Seeds need water to begin growth. Plants have different structures that function growth and survival. Plant roots take in water and nutrients, and leaves make food from sunlight.
Lesson Frame: Part 4 - Variation in Plants and Animals	Students will know not all plants grow alike. There are variations in structures that serve the same function. Individuals of the same kind look similar but also vary in many ways.
Performance Tasks: Observe what happens when young ryegrass and alfalfa plants are cut near the soil surface. Sprout wheat seeds in straws and monitor growth, using a graph.	Notes: Science notebook entry - Growing a Lawn, Plant Picture, Growing and Mowing a Lawn, Growing Wheat, answer the focus question Science Resources Book - "What Do Plants Need?", "The Story of Wheat", "Variation" Video - How Plants Grow, Animal Growth Investigation 1 I-Check
Topic 2: **Terrariums**	**Length:** 6 weeks

Standard(s): LS1.A, LS1.D, LS3.B, ETS1.B	**Academic Vocabulary:** behavior, desert, forest, grassland, habitat, map, map key, ocean, pond, predator, rainforest, shelter, survive, system, terrarium, tundra
Lesson Frame: Setting Up Terrariums	Students will know plants and animals need food, water, air and space; plants need sunlight to make food. A terrarium is a model habitat where plants and animals live in soil. A habitat is a place where plants and animals live.
Lesson Frame: Animals in the Terrarium	Students will know there are many different habitats around the world. Many changes take place in a terrarium habitat over time.
Lesson Frame: Habitat Match	Students will know a habitat is a place where plants and animals live. It provides what a plant or animal needs to live. Plants and animals have structures and behaviors that help them survive in different habitats. Habitats can be wet, dry, cold, or hot. Different plants and animals survive in each different habitat.
Lesson Frame: Squirrel Behavior	Students will know plants and animals habitats have features that will help them survive. Animals have sensory structures that provide them with information about their surroundings. Individuals of the same kind look similar but can vary in many ways. Engineers learn from nature in order to solve human problems.
Performance Tasks: Design and build a model habitat (a terrarium system) provides for the needs of a small community of plants and animals. Make observations of terrariums over time and record them on a map and class charts through drawing and writing.	Notes: Science Notebook Entry - Terrarium map, answer the focus question Science Resource Book - "What Do Animals Need?", "Plants and Animals Around the World", "Learning from Nature" Video - How Plants Live in Different Places, Animal Growth Investigation 3 I-Check

Unit Name: **Air and Weather**	**Length:** 12 weeks
Standards: I can use observations of the sun, moon, and stars to describe patterns that can be predicted. I can make observations at different times of year to relate the amount of daylight to the time of year.	**Outcomes:** Weather describes conditions in the air outside. Temperature describes how hot or cold the air is. Temperature is measured with a thermometer. Clouds are made of liquid water drops that fall to Earth as rain. Wind moves clouds in the sky. The Sun and Moon can be observed moving across the sky; we see them at different locations in the sky, depending on the time of day or night.
Topic 1: **Observing the Sky**	**Length:** 6 weeks
Essential Questions: When you look up at the sky, what do you see, and how does it change?	**Learning Targets:** Weather describes conditions in the air outside. Temperature describes how hot or cold the air is. Temperature is measured with a thermometer. Wind moves clouds in the sky. Clouds are made of liquid water drops that fall to Earth as rain; water is also in the air as a gas that we can't see. The sun rises in the east, moves across the sky, and sets each day at predictable times. The sun warms the Earth. The moon can be observed moving across the sky; we see them at different locations in the sky, depending on the time of day or night.
Standard(s): ESS1.1, ESS1.2	**Academic Vocabulary:** change, cirrus, cloud, cold, cool, cumulus, day, degrees Celsius, degrees Fahrenheit, describe, hot, measure, meteorologist, moon, night, overcast, partly cloudy, pattern, rain gauge, rainy, record, snowy, star, stratus, sun, sunny, sunrise, sunset, symbol, temperature, thermometer, warm, water vapor, weather, weather conditions, weather instrument
Lesson Frame: Part 1 - Weather Calendars	Students will know weather describes the conditions of the air outside.
Lesson Frame: Part 2 - Measuring Temperatures and Daylight	Students will know that temperature describes how hot or cold the air is. Temperature is measured with a thermometer. The sun rises in the east, moves across the sky, and sets each day at predictable times. The sun warms the Earth.
Lesson Frame: Part 3 - Watching Clouds	Students will know that wind moves clouds in the sky. Clouds are made of liquid water drops that fall to Earth as rain; water is also in the air as a gas that we can't see.
Lesson Frame: Part 4 - Observing the Moon	Students will know that the moon can be seen sometimes at night and during the day. It looks different every day, but looks the same again every 4 weeks. The moon can be observed moving across the sky; we see it at different locations in the sky, depending on the time of day or night. There are more stars in the night sky than anyone can count.

Performance Tasks: Observe and record air conditions using weather instruments, and hours of daylight to look for patterns. Record moon observations to look for patterns.	Notes: Science Notebook Entry - Answer the focus question, Thermometer Picture Science Resources Book - “What Is the Weather Today?”, “Clouds”, “Water in the Air”, “Changes in the Sky” Online Activity - “Cloud Catcher” Investigation 2 I-Check
Topic 2: **Looking for Change**	**Length:** 6 weeks
Essential Questions: How do daylight and weather change through the seasons?	**Learning Targets:** Daily changes in temperature and weather type can be observed, compared, and predicted over a month. The sun and moon can be observed moving across the sky; we see them at different locations in the sky, depending on the time of day or night. Each season has a typical weather pattern that can be observed, compared, and predicted. The number of hours of daylight changes predictably through the seasons.
Standard(s): ESS1.1, ESS1.2	**Academic Vocabulary:** fall, graph, hibernate, migrate, season, spring, summer, winter
Lesson Frame: Part 1 - Change over a Month	Students can organize and graph the class weather data recorded over a period of 4 weeks. The class can continue recording the weather on the calendar and then graph the following month. Students also revisit the Moon calendar and look for patterns over the month.
Lesson Frame: Part 2 - Daylight Through the Year	Students can look at the amount of daylight on the same day of each month over the year. Students describe the pattern they observe and predict the number of hours of daylight on their birthday that year. They compare the actual hours to their predicted number of hours.
Lesson Frame: Part 3 - Comparing the Seasons	Students can move from recording weather data on a calendar to creating seasonal graphs of the weather and temperature. Each season, the class creates new graphs and compares them with graphs from the preceding seasons.
Lesson Frame: Part 4 - Extensions	
Performance Tasks: Graph weather observations taken over a period of a month. Look for patterns in local weather conditions and temperatures throughout the seasons. Monitor and record the changing appearance of the moon over a month. Monitor and record the number of changing number of daylight hours over a year.	Notes: Science Notebook Entry - Answer the focus question, Hours of Daylight Science Resources Book - "Changes in the Sky", "Seasons", "Getting Through the Winter" Online Activity - "What's the Weather?" Investigation 4 I-Check
Topic 3: Investigation 1 - **Exploring Air**	**Length:** 2 weeks

Essential Questions: What is air and what can it do?	**Learning Targets:** Air is a gas and is all around us, including in the sky. Air is matter and takes up space. Air makes objects move. Air moves from place to place. Moving air is wind. Air resistance affects how things move. Air can be compressed.
Standard(s): (Engineering Standards) I can ask questions, make observations, gather information about a situation people want to change to define a simple problem that can be solved through the developments of a new or improved object or tool. I can develop a simple sketch, drawing, or physical model to illustrate how shapes of an object helps it function as needed to solve a given problem. I can analyze data from tests to two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs."	**Academic Vocabulary:** air, air resistance, barrel, blow, bubble, canopy, compress, distance, engineer, gas, matter, move, parachute, plunger, pressure, push, rocket, submerge, syringe, system, tube, wind
Lesson Frame: Part 1 - Air Is There	Students can discover properties of air by observing interactions of air with objects.
Lesson Frame: Part 2 - Parachutes	Students can design and engineer parachutes and observe how they interact with air to solve a problem.
Lesson Frame: Part 3 - Pushing on Air	Students can use syringes to investigate air. Students will discover that air can be compressed and under pressure can push objects around.
Lesson Frame: Part 5- Balloon Rockets	Students can set up balloon rocket systems and find out how far they propel in a flight line.
Performance Tasks: Discover properties of air by observing interactions of air with objects. Design and engineer parachutes and observe how they interact with air to solve a problem. Demonstrate that compressed air can be used to make things move.	Notes: Science Notebook Entry - Air is There, Parachutes, Pushing on Air, Balloon Rockets Science Resources Book - "What is All Around Us?" Video: "Friction and Air Resistance" Investigation 1 i-check Answer the Focus Questions

Course Name:	Second Grade Science		
Credits:	N/A		
Prerequisites:	N/A		
Description:	A comprehensive of Science topics including: Physical Science, Life Science, Earth Science, and Engineering Design.		
Academic Standards:	Next Generation Science Standards		
Units:	**Unit Length:**	**Unit Standards:**	**Unit Outcomes:**
Solids and Liquids	1 Quarter	I can classify different kinds of materials by their observable properties. I can determine which materials have the properties that are best suited for an intended purpose. I can construct an object made of pieces that can be disassembled and made into a new object. I can explain how some changes can be reversed by heating and cooling.	Everything is made of matter. There are three states of matter.
Insects and Plants	1 Quarter	I can plan and conduct an investigation to determine if plants need sunlight and water to grow. I can develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. I can make observations of plants and animals to compare the diversity of life in different habitats.	All living things have needs to survive in their environment.
Pebbles, Sand, and Silt	1 Quarter	I can compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. I can develop a model to represent the shapes and kinds of land and bodies of water in an area. I can obtain information to identify where water is found on Earth and that it can be solid or liquid.	Earth's landforms and bodies of water are constantly changing.
Engineering Design	1 Quarter	I can ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. I can develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. I can analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	Making observations and analyzing information can help improve our lives.

Unit Name: Physical Science-**Solids and Liquids**	**Length:** 1 quarter
Standards: I can classify different kinds of materials by their observable properties. I can determine which materials have the properties that are best suited for an intended purpose. I can construct an object made of pieces that can be disassembled and made into a new object. I can explain how some changes can be reversed by heating and cooling.	**Outcomes:** Everything is made of matter. There are three states of matter. Each state has different uses.
Essential Questions: How do properties of materials relate to their use? How do you observe, describe, and compare properties of solids and liquids?	**Learning Targets:** Solids are made of materials that have different properties. Liquids can be classified by their observable properties. Successful towers are built using the correct materials intended for the task. When heated or cooled, properties of materials are changed.
Topic 1: **Solids**	**Length:** 4 weeks
Standard(s): I can describe a solid. I can classify different kinds of materials by their observable properties. I can construct an object made of pieces that can be disassembled and made into a new object. I can determine which materials have the properties that are best suited for an intended purpose.	**Academic Vocabulary:** solid, liquid, gas, matter, observe, properties, flexible, rigid
Lesson Frame: Solid Objects and Materials	I can: identify solid objects and materials by their properties.
Lesson Frame: Group Solid Objects	I can: sort objects into collections based on their properties.
Lesson Frame: Construct with Solids	I can: use knowledge of material properties to design structures.
Performance Tasks: States of Matter Graphic Organizer Interactive Notebook Completion of Rubric	Notes: Activities may vary depending on individual needs. Baggies of materials in FOSS Kit various videos Solids & Liquids student book: pages 3-30
Topic 2: **Liquids**	**Length:** 2 weeks
Standard(s): I can describe a liquid. I can classify different kinds of materials by their observable properties.	**Academic Vocabulary:** Liquids, bubbly, foamy, viscous, translucent, transparent, flow
Lesson Frame: Liquids in Bottles	I can: describe the properties of liquids.
Lesson Frame: Properties of Liquids	I can: describe how liquids can be different from each other.

Lesson Frame: Liquid Level	I can: explain how liquids change in containers.
Performance Tasks: Interactive Notebook Completion of Rubric Liquid Properties Graphic Organizer	Notes: Activities may vary depending on individual needs Liquids in bottles FOSS Video: *All about Properties of Matter* FOSS Online Activity: *Falling Bottle Puzzle* *Solids & Liquids student book: pages 31-37*
Topic 3: **Solids, Liquids, and Water**	**Length:** 2 weeks
Standard(s): I can explain how some changes can be reversed by heating and cooling.	**Academic Vocabulary:** disappear, reversible, evaporate, crystal, dissolve, layers, melting, freezing
Lesson Frame: Solids and Water	I can: describe what happens when solids are mixed with water.
Lesson Frame: Liquids and Water	I can: describe what happens when liquids are mixed with water.
Lesson Frame: Changing Properties	I can: describe how properties of materials chance when they are heated or cooled.
Performance Tasks: Interactive Notebook Completion of Rubric Solid materials graphic organizer Liquids with water graphic organizer	Notes: Activities may vary depending on individual needs Solids & Liquids student book: pages 44-76 solid materials in bags FOSS activity Heating and Cooling FOSS video Solids and Liquids FOSS activity Change It!

Unit Name: Life Science- **Insects and Plants**	**Length:** One Quarter
Standards: I can plan and conduct an investigation to determine if plants need sunlight and water to grow. I can develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. I can make observations of plants and animals to compare the diversity of life in different habitats.	**Outcomes:** Plants, animals, and insects depend on their habitats for survival.
Essential Questions: How do plants and insects meet their needs?	**Learning Targets:** Plants need sunlight and water to grow. Plants depend on other living and nonliving things to pollinate and disperse seeds.. Animals live in the appropriate habitat that provides all of their needs.
Topic 1: **Plants Need Sunlight and Water**	Length: 2 Weeks
Standard(s): I can plan and conduct an investigation to determine if plants need sunlight and water to grow.	**Academic Vocabulary:** seed, disperse, pollinate, habitat
Lesson Frame: Observe Plants	I can: make observations of plants with different variables.
Lesson Frame: Identify What Plants Need	I can: determine if plants need sunlight and water to grow.
Performance Tasks: Plan and conduct an investigation to determine if plants need sunlight and water to grow. Completion of Rubric. Graphic Organizers	Notes: Leveled readers library books various videos Activities may vary depending on individual needs
Topic 2: **Seed dispersal and plant pollination**	**Length:** 2 weeks
Standard(s): Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.	**Academic Vocabulary:** seed, mimic, dispersal, pollination
Lesson Frame: How Do Seed Travel?	I can: design a simple model of an animal that mimics seed dispersal.
Lesson Frame: Bees and other insects help some plants move pollen.	I can: investigate how an insect moves pollen.
Performance Tasks: Design a model to show one way seeds are dispersed. Participate in the representation of pollination. Completion of Rubric. Graphic Organizer	Notes: use cheetos or some other food that will stick to children's fingers Leveled readers library books various videos Activities may vary depending on individual needs
Topic 3: **Animal Habitats**	**Length:** 4 weeks
Standard(s): I can make observations of plants and animals to compare the diversity of life in different habitats.	**Academic Vocabulary:** wetland, forest, desert, habitat, diversity, physical features, environment

Lesson Frame: Wetland Habitat	I can: make observations of plants, insects, and animals that live in a wetland habitat.
Lesson Frame: Forest Habitat	I can: make observations of plants, insects, and animals that live in a forest habitat.
Lesson Frame: Desert Habitat	I can: make observations of plants, insects, and animals that live in a desert habitat.
Lesson Frame: Compare Habitats	I can: compare the diversity of life in the different habitats.
Performance Tasks: Design and build a Habitat Completion of Rubric	Notes: Leveled readers library books various videos Activities may vary depending on individual needs

Unit Name: Earth Science-**Pebbles, Sand, and Silt**	**Length:** 1 quarter
Standards: I can compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. I can define weathering. I can define erosion. I can develop a model to represent the shapes and kinds of land and bodies of water in an area. I can obtain information to identify where water is found on Earth and that it can be solid or liquid.	**Outcomes:** Earth is made up of landforms and water that is constantly changing.
Essential Questions: How are Earth's landforms and bodies of water changing overtime?	**Learning Targets:** Earth's landforms are changed by erosion and weathering. Earth has many different landforms. Earth has different types of water sources. Earth's water sources can be solid or liquid.
Topic 1: **Soil and Water**	**Length:** 3 weeks
Standard(s): I can compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. I can define weathering. I can define erosion.	**Academic Vocabulary:** erosion, weathering
Lesson Frame: Soil and Water	I can: describe different types of soil.
Lesson Frame: Erosion	I can: explain the process of erosion.
Lesson Frame: Weathering	I can: tell how weathering is different from erosion.
Performance Tasks: Soil- graphic organizer interactive notebook completion of rubric	Notes: FOSS student book p. 3-23, 44-49, 68-78 FOSS video- All About Soil Various erosion and weathering videos
Topic 2: **Landforms**	**Length:** 3 weeks
Standard(s): I can develop a model to represent the shapes and kinds of land and bodies of water in an area.	**Academic Vocabulary:** pond, river, stream, ocean, lake, landforms, volcano, valley, canyon, mesa, butte, beach, delta, plain, mountain, plateau, hill, island
Lesson Frame: Land and Water	I can: design a landform to represent the land and water on Earth. I can: label the different types of land and water on my landform.
Lesson Frame: Types of Land	I can: name and describe landforms found on Earth.
Lesson Frame: Types of Water	I can: name and describe water found on Earth.

Performance Tasks: Land/water graphic organizer Land/water model Interactive notebook completion of rubric	Notes: FOSS student book p.24-30 Various Videos Various books Land/water model
Topic 3: **Natural Water Sources**	**Length:** 2 weeks
Standard(s): I can obtain information to identify where water is found on Earth and that it can be solid or liquid.	**Academic Vocabulary:** Fresh water, salt water, streams, rivers, lake, ocean, glaciers, precipitation
Lesson Frame: Where is Water Found?	I can: name where water is found on Earth.
Lesson Frame: States of Water	I can: name different states that water can be in.
Performance Tasks: States of water graphic organizer Interactive Notebook Completion of Rubric	Notes: FOSS student book p. 50-67 Various videos

Unit Name: **Engineering Design**	**Length:** One Quarter
Standards: I can ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. I can develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**Outcomes:** By designing and modifying an existing design, you are able to improve the outcome of a tool's purpose or performance.
Essential Questions: How can you design or improve a given tool to improve its function to solve a problem?	**Learning Targets:** Understand that by asking questions, making observations and gathering information, you are able to design and modify a tool that will solve a given problem.
Topic 1: **STEM-Pumpkin Picker**	**Length:** 1 week
Standard(s): I can ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. I can develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**Academic Vocabulary:** engineer, sketch, design, modify
Lesson Frame: Pumpkin Picker	I can: design a pumpkin picker that will pick many pumpkins at one time using the given material.
Performance Tasks: Design and build a model to represent an object that can improve or solve a given problem.	Notes: Use various materials to build and solve the given problem.
Topic 2: **STEM-Turkey Transporter**	**Length:** 1 week

Standard(s): I can ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. I can develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**Academic Vocabulary:** engineer, sketch, design, modify, transporter
Lesson Frame: Turkey Transporter	I can: design a tool that will transport a turkey with the given material.
Performance Tasks: Design and build a model to represent an object that can improve or solve a given problem.	Notes: Use various materials to build and solve the given problem.
Topic 3: STEM-Pilgrim Shelter	**Length:** 1 week
Standard(s): I can ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. I can develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**Academic Vocabulary:** engineer, sketch, design, modify , shelter
Lesson Frame: Pilgrim Shelter	I can: use the given material to design a shelter for pilgrims.
Performance Tasks: Design and build a model to represent an object that can improve or solve a given problem.	Notes: Use various materials to build and solve the given problem.
Topic 4: **STEM-Float your Boat**	**Length:** 1 week
Standard(s): I can ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. I can develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**Academic Vocabulary:** engineer, sketch, design, modify , float

Lesson Frame: Float Your Boat	I can: use the given material to design a boat that will float and hold cargo.
Performance Tasks: Design and build a model to represent an object that can improve or solve a given problem.	Notes: Use various materials to build and solve the given problem.
Topic 5: **STEM-Block the Water**	**Length:** 1 week
Standard(s): I can ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. I can develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**Academic Vocabulary:** engineer, sketch, design, modify
Lesson Frame: Block the Water	I can: design a tool that will block water from flowing through a given space.
Performance Tasks: Design and build a model to represent an object that can improve or solve a given problem.	Notes: Use various materials to build and solve the given problem.
Topic 6: **STEM-The Green House**	**Length:** 1 week
Standard(s): I can ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. I can develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**Academic Vocabulary:** engineer sketch design modify greenhouse
Lesson Frame: The Green House	I can: use the given material to create a structure like a greenhouse to help a plant grow.
Performance Tasks: Design and build a model to represent an object that can improve or solve a given problem.	Notes: Use various materials to build and solve the given problem.

Topic 7: **STEM-Seed Transporter**	**Length:** 1 week
Standard(s): I can ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. I can develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**Academic Vocabulary:** engineer, sketch, design, modify, transporter
Lesson Frame: Seed Transporter	I can: design a tool that will transport seeds to a new location for growth.
Performance Tasks: Design and build a model to represent an object that can improve or solve a given problem.	Notes: Use various materials to build and solve the given problem.

Topic 8: **STEM-The Nature of Objects**	**Length:** 1 week
Standard(s): I can ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. I can develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. I can analyze data from test of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**Academic Vocabulary:** engineer, sketch, design, modify
Lesson Frame: The Nature of Objects	I can: collect items from nature to use in the construction of objects for given purposes.
Performance Tasks: Design and build a model to represent an object that can improve or solve a given problem.	Notes: Use various materials to build and solve the given problem.

Course Name:	Third Grade Science		
Credits:	N/A		
Prerequisites:	N/A		
Description:	General Education 3rd Grade Science Curriculum		
Academic Standards:	Next Generation Science Standards		
Units:	**Unit Length:**	**Unit Standards:**	**Unit Outcomes:**
Motion and Matter	12 weeks	* I can understand the effects of balanced and unbalanced forces on motion. * I can understand motion and the factors that affect motion. * I can show cause and effect relationships of magnetism. * I can engineer an effective cart design.	Motion is caused by force but it can be affected by variables.
Water and Climate	12 weeks	*I can discuss typical weather conditions expected during a particular season. *I can read about and understand information to describe climates in different regions of the world. *I can state how the design of building/structure reduces the impact of a weather-related hazard.	The Earth's water plays many important roles in people's lives as well as can cause damage.
Structures of Life	12 weeks	*I can draw and label models of lifecycles. *I can explain how an organism's behaviors help them grow, and reproduce. *I can understand how an animal and its traits are influenced by its environment. *I can examine how adaptations help plants and animals survive. *I can examine how fossils teach us about animals and their environments from long ago.	Organism's structures help them grow, survive, and reproduce. Organisms are affected by their environment.

Unit Name: **Motion and Matter**	**Length:** 12 weeks
Standards: * I can understand the effects of balanced and unbalanced forces on motion. * I can understand motion and the factors that affect motion. * I can show cause and effect relationships of magnetism. * I can engineer an effective cart design.	**Outcome:** Motion is caused by force but it can be affected by variables.
Essential Questions: How does force and gravity affect the movement and how can force be changed?	**Learning Targets:** *Students learn motion of an object is determined by force (pushes and pulls). *Students make predictions of outcomes based on knowledge of gravity and magnetism. *Students describe matter including its states and properties.
Topic 1: **Forces**	**Length:** 4 weeks
Standard(s): I can understand the effects of balanced and unbalanced motion.	**Academic Vocabulary:** magnetic force, push, pull, attract, repel, gravity, balanced and unbalanced motion
Lesson Frame: Two Forces	I can: -describe how magnetism and gravity are alike and different. -explore what happens when magnets interact with other magnets.
Lesson Frame: Magnetic-Force Investigation	I can -collect data on what affects magnetic force.
Lesson Frame: More about Forces	I can -describe what causes a change in motion.
Performance Tasks: interactive notebook Foss videos, graphic organizers, and student resource book completion of rubric	Notes: Hands on lessons include: Magnet exploration How magnets interact with other objects: desks, paper, wood etc. Magnet Magic Trick
Topic 2: **Patterns of Motion**	**Length:** 4 weeks
Standard(s): I can understand motion and the factors that affect motion.	**Academic Vocabulary:** system, axle, friction, variable
Lesson Frame: Wheel and Axle Systems	I can -make a system using trial and error to learn what works best. -describe how friction causes and object to stop.
Lesson Frame: Predicting Motion of New Systems	I can -observe and measure patterns in motion to predict what will happen next.
Lesson Frame: Twirly Birds	I can -apply variable to affect how gravity works on object's motion.

Performance tasks: interactive notebook Foss videos, graphic organizers, and student resource book completion of rubric	Notes: Hands on activities: Use discs and shafts to make a wheel and axle system Use cups and ramps with weights to see how different designs affect motion Use different variables such as weight and length of wings to see how it changes how gravity affects flight
Topic 3: **Engineering**	**Length:** 4 weeks
Standard(s): I can show a cause and effect relationship related to motion	**Academic Vocabulary:** system, axle, friction, variable, magnetic force, push, pull, attract, repel, gravity, balanced and unbalanced motion
Lesson Frame: From Here to There	I can: -use what I have learned about motion to design a working cart
Lesson Frame: Distance Challenge	I can: -improve on an original design by asking how it can work even better. -collect data.
Lesson Frame: Cart Tricks	I can: -combine my knowledge of magnetism, gravity, and wheels and axles(motion) to create a cart trick.
Performance Tasks: interactive notebook Foss videos, graphic organizers, and student resource book completion of rubric	Notes: design of a successful cart with limited supplies testing carts for best design designing a cart trick
End of Unit Engineering and Design tied into cart building and magic trick.	

Unit Name: **Water and Climate**	**Length:** 12 weeks
Standards: *I can discuss typical weather conditions expected during a particular season. *I can read about and understand information to describe climates in different regions of the world. *I can sate how the design of building/structure reduces the impact of a weather-related hazard.	**Outcomes:** Earth's water impacts weather, climate, and people including causing hazards.
Essential Questions: How does the Earth's water affect climate, weather, and the people who live in certain areas?	**Learning Targets:** Students will understand the Earth's water and its forms. Students will understand the water cycle and its importance to weather and climate. Students will learn the difference between weather and climate as well as track weather info. Students will use what they know about severe weather and its effect on people to design a system against floods.
Topic 1: **Water Observations**	**Length:** 4 weeks
Standard(s): *I can sate how the design of building/structure reduces the impact of a weather-related hazard.	**Academic Vocabulary:** absorb, repel, interact, properties, slope, surface tension
Lesson Frame: Drops of Water	I can -understand the different properties of water. -observe how water acts on different surfaces. -relate what I have learned to water flow in nature.
Lesson Frame: Water on a Slope	I can -observe how water acts on a slope. -relate what I have learned to water flow in nature. -predict the shape of water as it flows after noticing patterns in water movement.
Lesson Frame: Water in Nature	I can -collect samples and record action of water on natural surfaces.
Performance Tasks: interactive notebook Foss videos, graphic organizers, and student resource book completion of rubric	Notes: Hands on learning: Water actions on Diff. Surfaces Water domes and the shape of water Water on slopes Outdoor Observation of water in nature
Topic 2: **Hot Water, Cold Water** (section 3,4,5)	**Length:** 4 weeks
Standard(s): *I can read about and understand information to describe climates in different regions of the world.	**Academic Vocabulary:** sink, float, liquid, solid, gas, density
Lesson Frame: Sinking and Floating	I can -explain why things sink and float.

Lesson Frame: Water as Ice	I can -name the 3 states of water (matter) and describe how/why water turns to a solid (ice).
Lesson Frame: Ice Outdoors	I can -describe how temperature affects water and animals. -reason how animals can stall alive in cold climates.
Performance Tasks: interactive notebook Foss videos, graphic organizers, and student resource book completion of rubric	Notes: Hands on Activities include: Using colored water of diff temps to see how it affects sinking and floating Compare the density of water and ice Explore putting ice in diff places outdoors(including burying it) to see how it is affected.
Topic 3: **Weather and Water** (parts 2,5, and supplemental materials on water cycle)	**Length:** 4 weeks
Standard(s): *I can discuss typical weather conditions expected during a particular season. *I can read about and understand information to describe climates in different regions of the world.	**Academic Vocabulary:** evaporate, condensation, precipitation, water vapor
Lesson Frame: Evaporation	I can -explain the process of evaporation. -record the effects of variables like temp. on speed of evap.
Lesson Frame: Condensation	I can -define condensation and the conditions needed to make it happen.
Lesson Frame: Water Cycle	I can -draw and label a diagram of the water cycle as well as explain it.
Performance Tasks: interactive notebook Foss videos, graphic organizers, and student resource book completion of rubric	Notes: Hands on Activities Include: Paper towel evaporation activity Making condensation on beverages of diff temps. Make a water cycle in a bag
Topic 4: **Seasons and Climate** (Foss kit and supplemental activities from Weather Unit Purchased)	**Length:** 3 weeks
Standard(s): *I can discuss typical weather conditions expected during a particular season. *I can read about and understand information to describe climates in different regions of the world.	**Academic Vocabulary:** climate, weather, season, typical, embankment, sluice
Lesson Frame: Seasonal Weather	I can -describe the role of the sun in weather. -review data on historical weather in our area and notice patterns.
Lesson Frame: Describing Climate	I can -describe the difference between climate and weather. -name different climates and the regions they are located in relation to the equator.

Lesson Frame: Weather Related Hazards	I can -describe some damage that weather can cause. -show ways that people currently deal with weather damage.
Performance Tasks: supplemental unit materials Unit on Weather from TPT interactive notebook Foss videos, graphic organizers, and student resource book completion of rubric	Notes: Hands on Activities include: Group data analysis Design a way to help stop flooding of a Lego house with limited materials using knowledge of water
*End of Unit Engineering and Design: Create a boat that floats from limited materials, design, improve your design, and restructure a boat that shows you have knowledge of sinking, floating, and density.	

Unit Name: **Structures of Life**	**Length:** 12 weeks
Standards(s): *I can draw and label models of lifecycles. *I can explain how an organism's behaviors help them grow, and reproduce. *I can understand how an animal and its traits are influenced by its environment. *I can examine how adaptations help plants and animals survive. *I can examine how fossils teach us about animals and their environments from long ago.	**Outcomes:** All living things are affected by their environment which changes over time.
Essential Questions: How does an organism's environment affect how it grows, reproduces, and survives?	**Learning Targets:** *Students note living things have needs and they grow and change. *Living things change due to their environment. *Students can describe how characteristics or living things help it mate, reproduce, and survive.
Topic 1: **Origin of Seeds**	**Length:** 4 weeks
Standard(s): *I can draw and label models of lifecycles. *I can explain how an organism's behaviors help them grow and reproduce. *I can explain how adaptations help plants and animals survive.	**Academic Vocabulary:** germinate, reproduce, embryo, disperse, seedling
Lesson Frame: Seed Search	I can -name the parts of a bean seed and see what happens when water is added to a seed. -look at and compare different kinds of seeds and their characteristics. -define what parts of a plant help it reproduce.
Lesson Frame:Seed soak/sprout (combined)	I can -describe what a plant needs from its environment to reproduce.
Lesson Frame: Seed Dispersal	I can -I can explain how a plants adaptations help it disperse in order to reproduce.
Performance Tasks: interactive notebook Foss videos, graphic organizers, and student resource book completion of rubric seed hunt outdoors	Notes: Hands on activities: seed exploration of different seeds and outdoor search seed soak and sprout
Topic 2: **Meet the Crayfish**	**Length:** 4 weeks
Standard(s): *I can explain how an organism's behaviors help them grow, and reproduce. *I can understand how an animal and its traits are influenced by its environment. *I can examine how adaptations help plants and animals survive.	**Academic Vocabulary:** adaptation, behavior, territory, structure, function

Lesson Frame: Crayfish Structures	I can -I can describe and label crayfish structures and talk about their purpose.
Lesson Frame: Adaptation/Behavior combined	I can -describe and define adaptation as associated with crayfish. -find and apply knowledge of crayfish adaptations to other species. -describe and view how a crayfish's behavior helps it survive in its territory.
Lesson Frame: Compare crayfish and other animals	I can -compare what I have learned about crayfish structures and apply it to other animals.
Performance Tasks: interactive notebook Foss videos, graphic organizers, and student resource book completion of rubric seed hunt outdoors	Notes: Hands on activities: seed hunt walk outdoors handling live crayfish sprouting and taking apart bean seeds online games "Crayfish vs. Snail vs. Mantis ***FIELD TRIP TO CENTRAL WISCONSIN ENVIR. STATION FOR: ANIMAL ADAPTATIONS EXPLORATION
Topic 3: **Human and Dino bodies**	Length: 4 weeks
Standard(s): *I can examine how fossils teach us about animals and their environments from long ago.	**Academic Vocabulary:** function, inherit, skeleton
Lesson Frame: Counting Bones	I can -describe the function of a skeleton and some are in the inside and some outside. -be familiar with human and animal bones.
Lesson Frame: Joints and Muscles	I can -describe how our skeleton supports us but we need joints and muscles to help us move.
Lesson Frame: Dino Bones see TE pg 301 and SB pg 81 **supplemental materials also needed	I can -list what dinosaur bones can tell us about them.
Performance Tasks: interactive notebook Foss videos, graphic organizers, and student resource book completion of rubric	Notes: Fossil exploration taping joints leg model Mr. Bones puzzle
* End of unit Engineering and Design Project: Make an imaginary animal and describe its environment. Use your knowledge of adaptations and growth, survival etc. to create a realistic critter that has structures to help it grow, reproduce, and survive in its environment.	

Course Name:	Fourth Grade Science		
Credits:	n/a		
Prerequisites:	n/a		
Description:	Students will explore the area of energy, through electricity and magnetism. Students will explore environments and how living organisms depend on them and one another for survival. Students will explore soil, rocks, and landforms to study changes in the Earth's surface.		
Academic Standards:	Next Generation Science Standards		
Units:	**Unit Length:**	**Unit Standards:**	**Unit Outcomes:**
Energy	12 weeks	I can use evidence to construct an explanation relating the speed of an object to the energy of that object. I can make observations to provide evidence that energy can be transferred from place to place by sound, light heat, and electric currents. I can ask questions and predict outcomes about the changes in energy that occur when objects collide. I can apply scientific ideas to design, test, and refine a device that converts energy from one form to another. I can develop model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. I can develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. I can generate and compare multiple solutions that use patterns to transfer information. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	Energy is everywhere, electricity and magnetism are related, energy transfers through waves, repeating patterns of motion, that result in sound and motion.

Environments	12 weeks	I can construct an argument that plants and animals have internal and external structure that function to support survival, growth, behavior, and reproduction. I can use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	Organisms have structures and behaviors that serve functions in growth, survival and reproduction and living organisms depend on one another and on their environment for their survival and the survival of populations
Soil, Rocks, and Landforms	12 weeks	I can identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. I can make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. I can analyze and interpret data from maps to describe patterns of Earth's features. I can obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. I can generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	Students will have firsthand experiences with soils and rocks and modeling experiences using tools such as topographic maps and stream tables to study changes to rocks and landforms at Earth's surface.

Unit Name: **Energy**	**Length:** 12 weeks
Standards: I can use evidence to construct an explanation relating the speed of an object to the energy of that object. I can make observations to provide evidence that energy can be transferred from place to place by sound, light heat, and electric currents. I can ask questions and predict outcomes about the changes in energy that occur when objects collide. I can apply scientific ideas to design, test, and refine a device that converts energy from one form to another. I can develop model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. I can develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. I can generate and compare multiple solutions that use patterns to transfer information. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**Outcomes:** Energy is everywhere, electricity and magnetism are related, energy transfers through waves, repeating patterns of motion, that result in sound and motion.
Topic 1: **Energy and Circuits**	**Length:** 5 days
Essential Questions: 1. What is needed to light a bulb? 2. What is needed to make a complete pathway for current to flow in a circuit? 3. How can you light two bulbs brightly with one D-cell? 4. Which design is better for manufacturing long strings of lights - series or parallel?	**Learning Targets:** Students will understand that an electric circuit is a system that includes a complete pathway through which electric current flows from an energy source to its components. Students will understand that conductors are materials through which electric current can flow: all metals are conductors. Students will understand the difference between a series circuit and a parallel circuit. Students will understand that the energy of two energy sources adds when they are wired in a series, delivering more energy than a single source. Two cells in parallel deliver the same energy as a single cell.
Standard(s): I can make observations to provide evidence that energy can be transferred from place to place by sound, light heat, and electric currents. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**Academic Vocabulary:** component, energy source, circuit, electric current, terminal, contact points, filament, component, insulators, conductor, insulator, closed circuit, open circuit, switch, parallel circuit, series circuit.
Lesson Frame: Lighting a Bulb	I can make a complete circuit to light a bulb.

Lesson Frame: Conductors and Circuits	I can make a pathway for a current to flow. I can determine which materials can complete the pathway and which cannot.
Lesson Frame: Series and Parallel Circuits	I can light two bulbs with on D-cell.
Lesson Frame: Solving the String-of-Lights Problem	I can decide which type of circuit would be the best design for a string of lights.
Performance Task: Using wires, an energy source and a bulb, light the bulb. Use a switch and motor to make a circuit. Determine which materials can complete a pathway. Devise a series circuit to operate two bulbs. Wire two bulbs in parallel. Analyze a design to light a string of lights. Interactive notebook.	Notes: Student copies of Energy book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment
Topic 2: **The Force of Magnetism**	**Length:** 4 days
Essential Questions: 1. What materials stick to magnets? 2. What happens when two or more magnets interact? 3. What happens when a piece of iron comes close to or touches a permanent magnet?	**Learning Targets:** Students will understand that magnets stick to objects that contain iron. Students will learn that magnets are surrounded by an invisible magnetic field, when an object enters a magnetic field, the object becomes a temporary magnet. All magnets have two poles. Students will learn the magnetic force acting between magnets declines as the distance between them increases. Earth has a magnetic field.
Standard(s): I can make observations to provide evidence that energy can be transferred from place to place by sound, light heat, and electric currents. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved	**Academic Vocabulary:** attract, compass, force, gravity, induced magnetism, interact, iron, magnet, magnetic field, magnetic, North pole, opposite, permanent magnet, pole, repel, South pole, steel, temporary magnet.
Lesson Frame: Magnets and Materials	I can determine what materials stick to magnets.
Lesson Frame: Magnetic Fields	I can understand what happens when two or more magnets interact. I can understand what happens when a piece of iron comes close to or touches a permanent magnet.
Lesson Frame: Magnetic Force	I can understand what happens to the force of attraction between two magnets as the distance between them changes.

Performance Tasks: Students discover that iron-containing objects stick to magnets. Students generate a rule for magnetic interaction with materials. Observe two sides of a magnet are different, that magnetism acts through air, most metals and all nonmetals, bringing a magnet close to a piece of iron induces magnetism, there is an invisible field surrounding every magnet. Using a balance, measure the force of attraction between magnets. Interactive notebook.	Notes: Student copies of Energy book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment
Topic 3: **Electromagnets**	**Length:** 4 days
Essential Questions: How can you turn a steel rivet into a magnet that turns on and off? How does the number of winds of wire around a core affect the strength of the magnetism? How can you reinvent the telegraph using your knowledge of energy and electromagnetism?	**Learning Targets:** Students will understand that a magnetic field surrounds a wire through which electric current is flowing. Students will understand the magnetic field produced by a current carrying wire can induce magnetism in a piece of iron or steel. Students will understand an electromagnet is made by sending electric current through an insulated wire wrapped around an iron core. Students will understand the number of winds of wire affects the strength of the magnetism. Students will understand a telegraphic system is an electromagnet based technology used for long distance communication.
Standard(s): I can make observations to provide evidence that energy can be transferred from place to place by sound, light heat, and electric currents. I can apply scientific ideas to design, test, and refine a device that converts energy from one form to another. I can generate and compare multiple solutions that use patterns to transfer information. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved	**Academic Vocabulary:** code, coil, core, electromagnet, electromagnetism, key, rivet, telegraph
Lesson Frame: Building an Electromagnet	I can turn a steel rivet into a magnet that turns on and off.
Lesson Frame: Changing the Strength	I can determine the number of winds of wire around a core affect the strength of the magnetism.
Lesson Frame: Reinventing the Telegraph	I can reinvent the telegraph using knowledge of energy and electromagnetism.

Performance Tasks: Students discover a steel core becomes a magnet when current flows through an insulated wire around the steel core. Students experiment to find out how the number of winds of wire affects the strength of magnetism. Students apply their knowledge of circuitry and electromagnetism to build a telegraph, they invent a code and send messages to each other, they wire two telegraph units together using long wires.	Notes: Student copies of Energy book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment
Topic 4: **Energy Transfer**	**Length:** 4 days
Essential Questions: 1. What do we observe that provides evidence that energy is present? 2. How does the starting position affect the speed of a ball rolling down a ramp? 3. What happens when objects collide?	**Learning Targets:** Students will understand energy is evident whenever there is motion, electric current, sound, light, or heat. Energy can be transferred from place to place. Students will understand that objects in motion have energy. The faster an object moves, the more kinetic energy it has Students will understand when objects collide, energy transfers between objects, changing their motion Students will understand kinetic energy is energy of motion, potential energy is energy of position. Objects at higher positions have more potential energy than objects at lower positions.
Standard(s): I can use evidence to construct an explanation relating the speed of an object to the energy of that object. I can ask questions and predict outcomes about the changes in energy that occur when objects collide. I can generate and compare multiple solutions that use patterns to transfer information. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**Academic Vocabulary:** collide, collision, friction, fuel, heat, Kinetic energy, potential energy, sound, stationary, transfer of energy
Lesson Frame: Presence of Energy	I can explore evidence of energy when sound, heat and light are produced and when objects are in motion.
Lesson Frame: Rolling Balls Down Slopes	I can investigate how variables affect the speed of a rolling ball.
Lesson Frame: Collisions	I can test variables of mass and starting position to find out how these variables affect energy transfer.

Performance Tasks: Observe and compare the behavior of balls on ramps Design and conduct controlled experiments to find out how collisions affect the transfer of energy	Notes: Student copies of Energy book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment
Topic 5: **Waves**	**Length:** 4 days
Essential Question: 1. How are waves involved in energy transfer? 2. How does light travel? 3. How can you make a motor run faster using solar cells?	**Learning Targets:** Students will understand that waves: are a repeating pattern of motion that transfer energy from place to place, there are sound waves, light waves, radio waves, microwaves, and ocean waves, waves have properties - amplitude, wavelength, and frequency. Students will understand that light travels in a straight line and can reflect off surfaces, an object is seen only when light from that object enters and is detected by an eye, and light can refract when it passes from one transparent material into another Students will understand two energy sources deliver more power than a single source
Standard(s): I can develop model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. I can develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. I can generate and compare multiple solutions that use patterns to transfer information. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved	**Academic Vocabulary:** amplitude, compression cycle, frequency, mirror, peak ray, reflect, reflection, refract, refraction, solar cell trough, wave, wavelength
Lesson Frame: Forms of Waves	I can understand the general properties of waves - amplitude, wavelength, and frequency.
Lesson Frame: Light Travels	I can understand how light travels.
Lesson Frame: Engineering with Solar Cells	I can understand and use alternative energy sources.
Performance Tasks: Experience waves through firsthand experiences using ropes, demonstrations with waves in water, spring toys, and a sound generator Use mirrors to experience reflecting light, students build a conceptual model about how light travels Design series and parallel solar cell circuits and observe the effect on the speed of a motor. Read about alternative energy sources	Notes: Student copies of Energy book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment

Unit Name: **Environments**	**Length:** 12 weeks
Standards: I can construct an argument that plants and animals have internal and external structure that function to support survival, growth, behavior, and reproduction. I can use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**Outcomes:** Organisms have structures and behaviors that serve functions in growth, survival and reproduction and living organisms depend on one another and on their environment for their survival and the survival of populations
Topic 1: **Environmental Factors**	**Length:** 4 days
Essential Questions: 1. How do mealworm structures and behaviors help them grow and survive? 2. What moisture conditions do isopods prefer? 3. What light conditions do isopods prefer? 4. What are the characteristics of animals living in the leaf-litter environment?	**Learning Targets:** Students will describe how an environment is everything living and nonliving that surrounds and influences an organism. Students will describe the relationship between environmental factors and how well organisms grow. Students will describe animal structures and behaviors that function to support survival, growth, and reproduction. Students will demonstrate how by controlling some factors they affect other factors. Students will describe how organisms (specifically isopods) have a preferred set of environmental conditions.
Standard(s): I can construct an argument that plants and animals have internal and external structure that function to support survival, growth, behavior, and reproduction. I can use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**Academic Vocabulary:** adult, antennae, behavior, condition, darkling beetle, environment, environmental factors, function, inference, isopod, larva, life cycle, living, mealworm, molting, nonliving, observation, organism, pillbug, preferred environment, pupa, pupate, sow bug, stage, structure
Lesson Frame: Observing Mealworms	I can use the structure and behavior of mealworms to provide a proper environment for them to survive
Lesson Frame: Designing an Isopod Environment	I can learn how isopods respond to environmental factors of water and light. I can create an isopod environment
Lesson Frame: Leaf-Litter Critters	I can become familiar with small animals living in natural ground litter

Performance Tasks: Observe mealworms, determine what is needed to provide a proper environment for them to survive. Keep the environments at room temperature have one environment at a colder temperature. Conduct two different investigations to find out how isopods respond to factors of water and light Collect, observe, and sort small animals living in natural ground litter. Use a Critter Replicator to become familiar with the anatomical parts of animals they find. Use a concept grid to organize the information they have gathered	Notes: Student copies of Environment book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment
Topic 2: **Ecosystems**	**Length:** 4 days
Essential Questions: 1. What are the environmental factors in an aquatic system? 2. What are the roles of organisms in a food chain? 3. How does food affect a population in its home range? 4. How do animals use their sense of hearing?	**Learning Targets:** Students will explain how aquatic environments include living and nonliving factors. Students will describe how organisms that live in water have structures to meet their needs. Students will explain that an ecosystem is the interaction of organisms with one another and the nonliving environment. Students will explain how organisms have structures that allow them to feed and compete for resources. Students will explain that producers make their own food, which is used by animals (consumers). Students will explain that decomposers eat and recycle the nutrients in the system. Students will explain that animals have different systems for obtaining oxygen. Students will describe how organisms interact in ecosystems. Students will explain that when environments change, plants and animals survive and reproduce, move to new locations, or die. Students will describe how animals communicate to warn others of danger, scare off predators, and locate others of their kind. Students will explain how organisms have sensory systems to gather information about their environment and act on it. Students will describe how animals detect sounds, interpret, and act on them.
Standard(s): I can construct an argument that plants and animals have internal and external structure that function to support survival, growth, behavior, and reproduction. I can use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**Academic Vocabulary:** algae, aquarium, aquatic environment, carnivore, carrying capacity, competition, consumer, decomposer, ecosystem, elodea, energy, food chain, food web, freshwater environment, herbivore, home range, interaction, microorganism, omnivore, phytoplankton, population, predator, prey, producer, zooplankton
Lesson Frame: Designing an Aquarium	I can describe the environmental factors in an aquatic system
Lesson Frame: Food Chains and Food Webs	I can discuss the roles of organisms in a food chain

Lesson Frame: Population Simulation	I can describe how food affects a population
Lesson Frame: Sound Off	I can replicate how animals use their sense of hearing
Performance Tasks:	Notes: Student copies of Environment book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment
Topic 3: **Brine Shrimp Hatching**	**Length:** 4 days
Essential Questions: 1. How can we find out if salinity affects brine shrimp hatching? 2. How does salinity affect the hatching of brine shrimp eggs? 3. Does changing the salt environment allow the brine shrimp eggs to hatch? 4. What are some benefits of having variation within a population?	**Learning Targets:** Students will explain that brine shrimp are crustaceans that live in marine or salt-pond environments. Students will describe how environmental factors (living or nonliving) are one part of an environment. Students will describe the range of tolerance organisms have for environmental factors. Students will explain how there are optimum conditions for reproduction and growth within a range of tolerance. Students will describe how brine shrimp can hatch in a range of salt concentrations. Students will explain that when environments change, plants and animals survive and reproduce, move to new locations, or die. Students will describe how humans impact natural environments. Students will describe how individuals of the same kind differ in characteristics, and sometimes the differences give individuals an advantage in surviving and reproducing.
Standard(s): I can construct an argument that plants and animals have internal and external structure that function to support survival, growth, behavior, and reproduction. I can use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**Academic Vocabulary:** brine, brine shrimp, concentration, controlled experiment, inherited trait, migrate, optimum, range of tolerance, reproduce, salinity, salt lake, survive, thrive, tolerance, variation, viable
Lesson Frame: Setting Up the Environment	I can identify if salinity affects brine shrimp hatching.
Lesson Frame: Determining Range of Tolerance	I can determine how salinity affects the hatching of brine shrimp eggs.
Lesson Frame: Determining Viability	I can determine how changing the salt environment allows the brine shrimp eggs to hatch.

Lesson Frame: Variation in a Population	I can understand some benefits of having variation within a population.
Performance Tasks:	Notes: Student copies of Environment book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment
Topic 4: **Range of Tolerance**	**Length:** 4 days
Essential Question: 1. How much water is needed for early growth of different kinds of plants? 2. What is the salt tolerance of several common farm crops? 3. How does mapping the plants in the schoolyard help us to investigate environmental factors? 4. What are some examples of plant adaptations?	**Learning Targets:** Students will describe the range of tolerance organisms have for factors in its environment. Students will describe the specific requirements for successful growth, development, and reproduction that organisms need. Students will describe the optimum conditions that are most favorable to an organism. Students will explain that adaptations are structures and behaviors of an organism that help it survive and reproduce. Students will explain the relationship that exists between environmental factors and how well organisms grow.
Standard(s): I can construct an argument that plants and animals have internal and external structure that function to support survival, growth, behavior, and reproduction. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**Academic Vocabulary:** adaptation, dominant plant, drought, irrigate, plant distribution, salt-sensitive, salt-tolerant
Lesson Frame: Water or Salt Tolerance and Plants	I can determine how much water is needed for early growth of different kinds of plants. I can determine the salt tolerance of several common farm crops.
Lesson Frame: Plant Patterns	I can map plants in the schoolyard to investigate environmental factors.
Lesson Frame: Plant Adaptations	I can identify some examples of plant adaptations.
Performance Tasks:	Notes:Student copies of Environment book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment

Unit Name: **Soil, Rocks, and Landforms**	**Length:** 12 weeks
Standards: I can identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. I can make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. I can analyze and interpret data from maps to describe patterns of Earth's features. I can obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. I can generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**Outcomes:** Students will have firsthand experiences with soils and rocks and modeling experiences using tools such as topographic maps and stream tables to study changes to rocks and landforms at Earth's surface.
Topic 1: **Soils and Weathering**	**Length:** 4 days
Essential Questions: 1. What is soil? 2. What causes big rocks to break down into smaller rocks? 3. How are rocks affected by acid rain? 4. What's in our schoolyard soil?	**Learning Targets:** Students will describe soil by their properties. Students will describe the amounts of earth materials and humus that soil is made of. Students will explain weathering as the breakdown of rocks and minerals at/near the Earth's surface. Students will explain the physical-weathering processes of abrasion and freezing as the breaking of rocks and minerals into smaller pieces. Students will explain that chemical weathering occurs when exposure to water and air changes rocks and minerals into something new.
Standard(s): I can make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**Academic Vocabulary:** abrasion, acid rain, basalt, calcite, chemical reaction, chemical weathering, clay, conglomerate, earth material, expand, freeze, granite, gravel, humus, limestone, marble, model, pebble, physical weathering, rock, sand, sandstone, silt, soil, system, weathering
Lesson Frame: Soil Composition	I can describe soils by their properties.
Lesson Frame: Physical Weathering	I can understand physical weathering.
Lesson Frame: Chemical Weathering	I can understand chemical weathering.
Lesson Frame: Schoolyard Soils	I can describe schoolyard soils by its properties.

Performance Tasks: Students observe and compare four different soils, they will speculate where each of the four came from: mountain, desert, river delta, or forest. Students tumble rocks and freeze water to see how these two types of physical weathering can break rocks. Students conduct an investigation to test rocks with "acid rain." Students collect and observe different soils from several locations in the schoolyard.	Notes: Student copies of Soils, Rocks, and Landforms book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment
Topic 2: **Landforms**	**Length:** 4 days
Essential Questions: 1. How do weathered rock pieces move from one place to another? 2. How does slope affect erosion and deposition? 3. How do floods affect erosion and deposition? 4. Where are erosion and deposition happening in our schoolyard? 5. How do fossils get in rocks and what can they tell us about the past?	**Learning Targets:** Students will describe how weathered rocks can be reshaped by erosion and deposition. Students will explain that erosion is the transport of weathered rock material by moving water or wind. Students will explain that deposition is the settling of sediments when the speed of moving water or wind declines. Students will explain how the rate and volume of erosion relates to the energy of moving water or wind. Students will explain that the energy of moving water depends on the mass of water in motion and its velocity. Students will describe how fossils provide evidence of organisms that lived long ago and clues to changes in past environments.
Standard(s): I can identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. I can make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved	**Academic Vocabulary:** alluvial fan, basin, canyon, cast, delta, deposition, erosion, flood, floodplain, fossil, imprint, landform, meander, mold, mountain, petrification, preserved remains, river channel, river mouth, sediment, sedimentary rock, slope, superposition, valley
Lesson Frame: Erosion and Deposition	I can understand how water moves earth's materials from one location to another.
Lesson Frame: Stream-Table Investigations	I can understand how environmental variables can affect erosion and deposition.
Lesson Frame: Schoolyard Erosion and Deposition	I can decide if erosion and deposition are happening in our schoolyard.
Lesson Frame: Fossil Evidence	I can understand how the sedimentation process can result in fossils.
Performance Tasks: Use stream tables to observe that water moves earth materials from one location to another Use stream tables to learn how environmental variables can affect erosion and deposition Look for evidence of erosion in our schoolyard Watch a video, make models, and read to learn about how sedimentation can result in fossils.	Notes: Student copies of Soils, Rocks, and Landforms book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment

Topic 3: **Mapping Earth's Surface**	**Length:** 4 days
Essential Questions: 1. How can we represent the different elevations of landforms? 2. How can we draw the profile of a mountain from a topographic map? 3. How can scientists and engineers help reduce the impacts that events like volcanic eruptions might have on people? 4. What events can change Earth's surface quickly?	**Learning Targets:** Students will demonstrate how topographic maps use contour lines to show the shape and elevation of the land. Students will explain how a change in elevation between two adjacent contour lines is always uniform. Students will describe how contour lines affect slope. Students will describe a profile as a side view or cross-section of a landform. Students will draw a profile map from information given on a topographic map. Students will describe how the surface of the Earth is constantly changing. Students will describe how catastrophic events have the potential to change the Earth's surface. Students will explain how scientists and engineers can do things to reduce the impacts of natural Earth processes on humans.
Standard(s): I can make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. I can analyze and interpret data from maps to describe patterns of Earth's features. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved	**Academic Vocabulary:** contour interval, contour line, crust, earthquake, elevation, landslide, lava, magma, mantle, profile, satellite cone, sea level, topographic map, volcano
Lesson Frame: Making a Topographic Map	I can understand and create a topographic map.
Lesson Frame: Drawing a Profile	I can create a two-dimensional profile.
Lesson Frame: Mount St. Helens Case Study	I can compare two topographic maps.
Lesson Frame: Rapid Changes	I can understand processes that cause rapid changes to Earth's surface.
Performance Tasks: Build a model mountain of MT. Shasta, trace outlines creating a topographic map Use topographic maps to produce two-dimensional profiles Compare two topographic maps. Draw profiles of Mount St. Helens before and after eruption Think about processes that cause rapid changes to Earth's surfaces	Notes: Student copies of Soils, Rocks, and Landforms book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment
Topic 4: **Natural Resources**	**Length:** 4 days

Essential Questions: 1. What are natural resources and what is important to know about them? 2. How are natural resources used to make concrete? 3. How do people use natural resources to make or build things?	**Learning Targets:** Students will explain how natural resources are taken from the environment and used by humans. Students will explain natural resources as renewable or nonrenewable and describe which resources are which. Students will explain alternative sources of energy (solar, wind, and geothermal energy). Students will describe the earth materials that make concrete. Students will explain how natural resources are important for shelter and transportation. Students will explain how scientists and engineers work to improve how people use natural resources.
Standard(s): I can obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. I can generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. I can define a simple design problem reflecting a need or a want that includes specific criteria for success and constraints on materials, time, or cost. I can generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. I can plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	**Academic Vocabulary:** aggregate, cement, concrete, fossil fuel, geothermal power, natural resource, nonrenewable resource, renewable resource, solar energy, wind power
Lesson Frame: Introduction to Natural Resources	I can review what I have learned in the module about soils, rocks, and landforms.
Lesson Frame: Making Concrete	I can make a concrete stepping stone.
Lesson Frame: Earth Materials in Use	I can identify what natural resources were used to construct objects.
Performance Tasks: Write a story or draw a concept map to bring ideas together about what they have learned in this module, focusing on renewable and nonrenewable resources Use local natural resources to make a stepping stone Walk around the school searching for materials in use	Notes: Student copies of Soils, Rocks, and Landforms book Materials in FOSS kits Various videos mentioned in FOSS TE Online activities I Check Assessment

Course Name:	5th Grade Science		
Credits:	n/a		
Prerequisites:	n/a		
Description:	General Education 5th Grade Science Curriculum		
Academic Standards:	Next Generation Science Standards		
Units:	**Unit Length:**	**Unit Standards:**	**Unit Outcomes:**
Earth and Sun	43 Sessions	5-ESS1-2 5 -PS2-1 5-ESS1-2 5-PS1-1 5-ESS2-1 5-ESS2-2	Shadows change because of the Sun's position and how it changes in the sky. Day is when half of the Earth's surface is illuminated by sunlight and night is when half of the Earth's surface is in its own shadow. The solar system includes the Sun and other objects that orbit it, including Earth, the Moon, other planets, satellites, and smaller objects. Gravity is the force that keeps the planets and other objects in orbit. Air is a mixture of gases held by gravity near Earth's surface. Earth's atmosphere has different layers and most of the air is found in the troposphere. Evaporation and condensation contribute to the movement of water through the water cycle, redistributing water over Earth's surface. The Sun's energy drives the weather.
Living Systems	14 Sessions	5-ESS2-1 5-LS2-1	A system is a collection of interacting parts that together constitute a whole or perform a function. Systems are often composed of subsystems. Earth can be described as the interaction of four earth systems: the rocky part (the geosphere), the atmosphere, the water (the hydrosphere), and the complexity of living organisms (the biosphere). Food webs are subsystems within ecosystems. They describe the transfer of matter and energy within the system. Food webs are made up of producers (organisms that make their own food), consumers (organisms that eat other organisms to obtain food), and decomposers (organisms that consume and recycle dead organisms and organic waste).
Mixtures and Solutions	27 Sessions	5-PS1-1 5-PS1-2 5-ETS1-1 5-ETS1-2 5-ETS1-3 5-PS1-1 5-PS1-2 5-PS1-3 5-ETS1-1 5-ETS1-2 5-PS1-4	A mixture is two or more materials together. Mixtures can be separated into the materials used to make the mixture. The mass of a mixture is equal to the mass of its parts. A solution is a mixture in which a substance dissolves in water to make a transparent liquid. Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria).

Unit Name: **Earth and Sun**	**Length:** 43 sessions
Standard(s): 5-ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. 5 -PS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. 5-ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. 5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen. 5-ESS2-1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. 5-ESS2-2 Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.	**Outcomes:** Shadows change because of the Sun's position and how it changes in the sky. Day is when half of the Earth's surface is illuminated by sunlight and night is when half of the Earth's surface is in its own shadow. The solar system includes the Sun and other objects that orbit it, including Earth, the Moon, other planets, satellites, and smaller objects. Gravity is the force that keeps the planets and other objects in orbit. Air is a mixture of gases held by gravity near Earth's surface. Earth's atmosphere has different layers and most of the air is found in the troposphere. Evaporation and condensation contribute to the movement of water through the water cycle, redistributing water over Earth's surface. The Sun's energy drives the weather.
Topic 1: **The Sun**	**Length:** 11 sessions
Standard(s): 5-ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.	**Academic Vocabulary:** Axis, Compass, Day, Night, North Pole, North Star, Orbit, Orientation, Revolution, Rotation Shadow, Sun, Sunrise, Sunset
Essential Questions: How and why does your shadow change during the day? What can be learned by studying the length and direction of shadows? What causes day and night?	**Learning Targets:** The student will understand that shadows are the dark areas that result when light is blocked. The student will learn that shadows change during the day because the position of the Sun changes in the sky. The student will discover that the length and direction of a shadow depends on the Sun's position in the sky. The student will know that day is the half of Earth's surface being illuminated by sunlight, night is the half of Earth's surface in its own shadow.
Lesson Frame: Shadow Shifting	I can understand how and why my shadow changes during the day.
Lesson Frame: Sun Tracking	I can learn that shadows change because of the position of the Sun and how it changes in the sky.
Lesson Frame: Day and Night	I can discover what causes day and night.

Performance Tasks: Survey Benchmark Assessment Notebook entries Analyze and discuss text Investigation 1 I-Check Assessment	**Notes:** Science Resources Book: "Changing Shadows", "Sunrise and Sunset" Online Activities: "Shadow Tracker", "Tutorial: Sun Tacking", "Seasons" Videos from Earth and Sun T.E. Student copies of Earth and Sun text FOSS kit materials I Check Assessment Student Science Notebooks
Topic 2: Planetary Systems	**Length:** 21 sessions
Standard(s): 5 -PS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. 5-ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.	**Academic Vocabulary:** asteroid, asteroid belt, comet, constellation, crescent Moon, dwarf planet, first-quarter Moon, force, full Moon, gas giant planet, gibbous Moon, gravity, Kuiper belt, lunar cycle, Moon, night sky, new Moon, phase, planet,solar system, star, terrestrial planet, third-quarter Moon, waning Moon, waxing Moon
Essential Questions: How can you explain why we see some natural objects only in the night sky, some only in the day sky, and some at both times? How would you describe the size of and distance between Earth, the Moon, and the Sun? How does the shape of the Moon change over 4 weeks? How do the parts of the solar system interact? Why do stars appear to move across the night sky?	**Learning Targets:** The student will learn that the solar system includes the Sun and the objects that orbit it, including Earth, the Moon, seven other planets, their satellites, and smaller objects. The student will understand that the Moon is much smaller than the Earth and orbits at a distance equal to about 30 Earth diameters. The student will learn that the Sun is 12,000 Earth diameters away from Earth and is more than 100 times larger than Earth. The student will understand that the pulling force of gravity keeps the planets and other objects in orbit by continuously changing their direction of travel. The student will know that a great deal of light travels through space to Earth from the Sun and from distant stars. The student will learn that stars are at different distances from Earth. The student will learn that stars are different sizes and have different brightnesses.
Lesson Frame: Night-Sky Observations	I can explain why I see some natural objects only in the night sky, some only in the day sky, and some at both times.
Lesson Frame: How Big and How Far?	I can describe the size and distance between Earth, the Moon, and the Sun.
Lesson Frame: Phases of the Moon (optional)	I can describe the phases of the Moon and why the shape of the moon changes every 4 weeks.
Lesson Frame: The Solar System	I can analyze and interpret data about the interaction of the parts of the solar system.
Lesson Frame: Stars	I can learn that stars are at different distances from Earth. I can determine that stars are different sizes and have different brightnesses.

Performance Tasks: Performance Assessment Notebook entries Analyze and discuss text Investigation 2 I-Check Assessment	Notes: Science Resources Book: The Night Sky, Looking through Telescopes, Comparing the Size of the Earth and the Moon, Apollo 11 Space Mission, How Did Earth's Moon Form?, Exploring the Solar System, Planets of the Solar System, Why Doesn't Earth Fly Off into Space?, Stargazing, Star Scientists, Our Galaxy Online Activities: Lunar Calendar, Star Maps, Stellar Motions Videos from Earth and Sun T.E. Student copies of Earth and Sun text FOSS kit materials I Check Assessment
Topic 3: **Earth's Atmosphere**	**Length:** 4 sessions
Standard(s): 5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen. 5-ESS2-1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. 5-ESS2-2 Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.	**Academic Vocabulary:** air, air pressure, atmosphere, barometer, compress, hygrometer, mass, matter, troposphere, weather
Essential Questions: What is air? What is Earth's atmosphere?	**Learning Targets:** The student will understand that air is a mixture of gases held by gravity near Earth's surface. The student will understand that air has mass, takes up space, and is compressible. The student will determine that most of Earth's air resides in the troposphere, the layer of the atmosphere closest to Earth's surface. The student will understand that weather happens in the troposphere.
Lesson Frame: The Air Around Us	I can define air as a mixture of gases held by gravity near Earth's surface. I can explain that air has mass, takes up space, and is compressible.
Lesson Frame: The Atmosphere	I can recognize that Earth's atmosphere has different layers and most of the air is found in the troposphere.

Performance Tasks: Performance Assessment Notebook entries Analyze and discuss text Investigation 3 I-Check Assessment	**Notes:** Science Resources Book: What is Air, Earth's Atmosphere Online Activities: Tutorial: Air and Atmosphere Videos from Earth and Sun T.E. Student copies of Earth and Sun text FOSS kit materials I Check Assessment Student Science Notebooks
Topic 4: **Water Planet**	**Length:** 7 sessions
Standard(s): 5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen. 5-ESS2-1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. 5-ESS2-2 Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.	**Academic Vocabulary:** climate, climatologist, condensation, condense, dew, drought, evaporate, evaporation, fog, fresh water, glacier, groundwater, hurricane, ice cap, lake, ocean, recycle, river, saltwater, severe weather, thunderstorm, tornado, water cycle, water vapor
Essential Questions: What causes condensation to form? How does water vapor get into the air? What is the water cycle?	**Learning Targets:** The student will define condensation as the process by which gas (water vapor) changes into liquid (water). The student will identify evaporation as the process by which liquid changes into gas. The student will recall that as temperature increases, the rate of evaporation increases. The student will recognize that most of Earth's water (97%) is salt water in the ocean and that Earth's freshwater is found in many locations including the atmosphere, lakes and rivers, soil, ground ice, groundwater, and glaciers. The student will determine that evaporation and condensation contribute to the movement of water through the water cycle, redistributing water over Earth's surface. The student will recognize that the Sun's energy drives weather.
Lesson Frame: Water Cycle	I can draw and label a model of the water cycle.
Lesson Frame: Condensation	I can explain what causes condensation to form.
Lesson Frame: Evaporation	I can determine how water vapor gets into the air.

Performance Tasks:	**Notes:**
Performance Assessment Notebook entries Analyze and discuss text Posttest	Science Resources Book: Condensation, Where is Earth's Water?, The Water Cycle Online Activities: Water Cycle Game Videos: Water Cycle Student copies of Earth and Sun text FOSS kit materials I Check Assessment Student Science Notebooks

Unit Name: **Living Systems**	**Length:** 14 sessions
Standards: 5-ESS2-1 Model of 4 Earth's spheres interactions 5-LS2-1 Model of matter in an environment	**Outcomes:** A system is a collection of interacting parts that together constitute a whole or perform a function. Systems are often composed of subsystems. Earth can be described as the interaction of four earth systems: the rocky part (the geosphere), the atmosphere, the water (the hydrosphere), and the complexity of living organisms (the biosphere). Food webs are subsystems within ecosystems. They describe the transfer of matter and energy within the system. Food webs are made up of producers (organisms that make their own food), consumers (organisms that eat other organisms to obtain food), and decomposers (organisms that consume and recycle dead organisms and organic waste).
Topic 1: **Systems**	**Length:** 14 sessions
Standard(s): 5-ESS2-1 Model of 4 Earth's spheres interactions 5-LS2-1 Model of matter in an environment	**Academic Vocabulary:** aquatic ecosystem, algae, atmosphere, bacteria, biosphere, carnivore, compost, consumer, decomposer, ecosystem, energy, food chain, food web, freshwater ecosystem, geosphere (lithosphere), herbivore, hydrosphere, interact, kelp forest, living, marine ecosystem, microorganism, nonliving, omnivore, phytoplankton, predator, prey, producer, recycle, redworm, subsystem, system, terrestrial ecosystem, zooplankton
Essential Questions: How can you identify a system? Is planet Earth a system? What organisms are both predators and prey in the kelp forest ecosystems? What happens when compost worms interact with organic litter?	**Learning Targets:** A system is a collection of interacting objects, ideas, and/or procedures that together define a physical entity or process. A subsystem is a small system that is inside a larger system. Earth can be described as the interaction of four earth systems: the rocky part (the geosphere), the atmosphere, the water (the hydrosphere), and the complexity of living organisms (the biosphere). Food webs are subsystems within ecosystems. They describe the transfer of matter and energy within the system. A kelp forest has similarities to a rainforest (vertical layering). Phytoplankton are the major producers in most aquatic systems. Food webs and competition for resources exist in marine systems. Food webs are made up of producers (organisms that make their own food), consumers (organisms that eat other organisms to obtain food), and decomposers (organisms that consume and recycle dead organisms and organic waste).
Lesson Frame: Everyday Systems	I can tell a subsystem within a larger system.
Lesson Frame: The Earth System	I can develop and create a model to describe the interaction between geosphere, atmosphere, hydrosphere, and biosphere proving Earth is a system. I can explain the difference between a food chain and a food web. I can categorize producers, consumers, and decomposers.
Lesson Frame: Kelp Forest Food Web	I can understand competition for resources. I can develop and create a model to describe the movement of matter among plants, animals, decomposers, and the environment.
Lesson Frame: Recycling	I can describe a decomposers role as a recycler in the ecosystem. I can assemble a worm habitat to show decomposition in nature.

Performance Tasks: Survey Benchmark Assessment Notebook entries Analyze and discuss text Create Worm Habitats Investigation 1 I-Check Assessment	Notes: Science Resources Student book, read "Introduction to Systems", "Is Earth a System?", "The Biosphere", "Monterey Bay National Marine Sanctuary", "Comparing Aquatic and Terrestrial Ecosystems", "Nature's Recycling System" FOSS videos: "Physical Systems", "Web of Life: Life in the Sea" Food web cards, from FOSS kit Performance Assessment Checklist (for worm activity) Online activities: "Food Webs" simulation and can create additional food webs in different ecosystems FOSS kit materials

Unit Name: **Mixtures and Solutions**	**Length:** 27 sessions
Standards: 5-PS1-1 5-PS1-2 5-ETS1-1 5-ETS1-2 5-ETS1-3 5-PS1-1 5-PS1-2 5-PS1-3 5-ETS1-1 5-ETS1-2 5-PS1-4	**Outcomes:** A mixture is two or more materials together. Mixtures can be separated into the materials used to make the mixture. The mass of a mixture is equal to the mass of its parts. A solution is a mixture in which a substance dissolves in water to make a transparent liquid. Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria).
Topic 1: **Separating Mixtures**	**Length:** 12 sessions
Essential Questions: How can a mixture be separated? Where does the solid material go when a solution is made? How can you separate a mixture of dry materials? Are there materials outdoors that will dissolve in water?	**Learning Targets:** A mixture is two or more materials intermingled. An aqueous solution is a mixture in which a substance disappears (dissolves) in water to make a clear liquid. Mixtures can be separated into their constituents. The mass of a mixture is equal to the mass of its constituents. Mixtures can be separated into their constituents. Mixtures and solutions can be separated, using screens, filters, and evaporation. Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). A mixture is two or more materials intermingled. An aqueous solution is a mixture in which a substance disappears (dissolves) in water to make a clear liquid.
Standard(s): 5-PS1-1 5-PS1-2 5-ETS1-1 5-ETS1-2 5-ETS1-3	**Academic Vocabulary:** constraint, criteria, crystal, diatomaceous earth, dissolve, engineer, evaporation, extract, filter, gravel, magnet, mass, mixture, powder, property, salt, screen, separate, solute, solution, solvent, transparent
Lesson Frame: Making and Separating Mixtures	I can define the word mixture. I can formulate a mixture of different materials. I can utilize appropriate tools to separate a mixture. I can restate that a solution can't be separated the same as a solids mixture.
Lesson Frame: Separating a Salt Solution	I can recognize that mixtures can be broken down into constituent parts. I can infer and then design an investigation to see where salt has gone, while mass remains the same.

Lesson Frame: Separating a Dry Mixture	I can design a solution to a problem and test my design.
Lesson Frame: Outdoor Solutions	I can test natural items to see if they create solutions. I can experiment with separation methods on created solutions.
Performance Tasks: Survey Benchmark Assessment Student notebook entries Predicting and designing an investigation Investigation 1 I-Check Assessment	Notes: copy: *Mixtures, Separations* workbook entries online activities: *Tutorial: Mixtures, Tutorial: Solutions, Separating Mixtures, Virtual Investigation: Separating Mixtures* Resources book: "Mixtures", "Taking Mixtures Apart", "Science Practices", "Engineering Practices", "Extracts", "The Story of Salt" (optional) FOSS video: *Elements, Compounds, and Mixtures,* Materials from the FOSS kits in science lab Response Sheet- Investigation 1 (assess in Part 2) Performance Assessment Checklist (assess in Part 3) Review Outdoor Safety
Topic 2: **Reaching Saturation**	**Length:** 13 sessions
Essential Questions: Is there a limit to the amount of salt that will dissolve in 50 mL of water? Does it always take the same amount of solid materials to saturate 50 mL of water? What is the identity of the mystery substance? What is in our water sample? What is a design to remove salt from ocean water?	**Learning Targets:** A solution is saturated when as much solid material as possible has dissolved in the liquid. Solutions are composed of a solvent (liquid) and a solute (solid); the solute is dissolved in the solvent. A solution is saturated when as much solid material as possible has dissolved in the liquid. Solubility is the property that indicates how readily a solute dissolves in a solvent. Solubility varies from substance to substance and is affected by kind of solvent, temperature, and other factors. Solubility is the property that indicates how readily a solute dissolves in a solvent. A substance is a single, pure material. Substances form predictable, identifiable crystals when solutions evaporate. Apply techniques used to separate mixtures and solutions.
Standard(s): 5-PS1-1 5-PS1-2 5-PS1-3 5-ETS1-1 5-ETS1-2	**Academic Vocabulary:** citric acid, Epsom salts, insoluble, saturated solution, soluble, solubility, substance, supersaturated
Lesson Frame: Salt Saturation	I can report that a solution is saturated when as much solid material as possible has dissolved in the liquid.
Lesson Frame: Epsom Salt Saturation	I can restate that solubility is the property that indicates how readily a solute dissolves in a solvent. I can recall that solubility varies from substance to substance and is affected by kind of solvent, temperature, and other factors.
Lesson Frame: The Saturation Puzzle	I can cite examples of substances that are pure materials. I can formulate and carry out a plan to identify an unknown substance. I can illustrate that substances form predictable, identifiable crystals when solutions evaporate.

Lesson Frame: What's in Your Water?	I can utilize tools and techniques to test local water quality. I can clearly communicate my design ideas.
Performance Tasks: Student notebook entries Participate in salt-and-bottle activity Engage in argumentation/provide evidence to support their claim. Devise a solution to remove dissolved salt water. Investigation 4 I-Check Assessment	Notes: **Student Resource Book:** "The Bends", "A Sweet Solution", "Sour Power", "East Bay Academy for Young Scientists", "Drinking Ocean Water", "Creative Solutions", **videos:** *The Water Cycle* **Online Activities:** "Tutorial: Saturation", "Virtual Investigation: Solubility" Response Sheet-Investigation 4 (notebook sheet 15) for assessing part 2 Performance Assessment Checklist- for part 3
Topic 3: **Fizz Quiz**	**Length:** 2 sessions
Essential Questions: What is the effect of mixing two substances with water?	**Learning Targets:** Some mixtures of substances result in a chemical reaction. During reactions, starting substances (reactants) change into new substances (products). Formation of a gas or precipitate is evidence of a chemical reaction.
Standard(s): 5-PS1-4	**Academic Vocabulary:** Investigation 5: Fizz Quiz baking soda, calcium chloride, gas, carbon dioxide, precipitate, chemical reaction, products, reactants
Lesson Frame: Chemical Reactions	I can demonstrate that some mixtures of substances result in a chemical reactions. I can repeat that during a reaction, starting substances (reactants) change into new substances (products). I can report that formation of a gas or precipitate is evidence of a chemical reaction.
Performance Tasks: Student notebook entries Carry out an investigation Analyze and Interpret data	Notes: **online activities:** "Fizz Quiz" **Resources book:** "Ask a Chemist" Materials from the FOSS kits in science lab

Course Name:	6th Grade Science
Credits:	N/A
Prerequisites:	N/A
Description:	Students will explore weather through focusing on the causes and effects of wind and water on the environment and the impact of global warming upon the Earth. Students will explore organisms focusing on both internal and external structures that produce and affect life. Students will explore robotics focusing on the force and energy necessary for operation, the design and coding aspects, and the advancements and contributions to society.
Academic Standards:	Next Generation Science Standards

Units:	**Unit Length:**	**Unit Standards:**	**Unit Outcomes:**
Weather and Water	48 sessions	MS.ESS1.1 MS.ESS2.4 MS.ESS2.5 MS.ESS2.6 MS.ESS3.2 MS.ESS3.4 MS.ESS3.5	Weather is the product of predictable patterns and circumstances. Climate is the average weather collected over time.Climate changes over time due to natural Earth cycles and human-induced changes.
Diversity of Life	60 sessions	MS.LS1.1 MS.LS1.2 MS.LS1.3 MS.LS1.4 MS.LS1.5 MS.LS1.6 MS.LS1.7 MS.LS3.2	All living things are made of cells. All organisms exhibit common characteristics and have certain requirements. Plants reproduce in a variety of ways. Genes are responsible for an organism's traits. Asexual reproduction results in offspring with identical genetic information. Sexual reproduction results in offspring with genetic variation, similar to parents but not identical. Organisms have structures and behaviors that enhance their chances of surviving and reproducing in their environment. Biodiversity is the wide range of existing life-forms that have adapted to the variety of conditions on Earth.
Robotics	24 sessions	MS.PS2.2 MS. PS2.3 MS.PS2. 5 MS.PS3.2 MS. PS3.5 MS. ESS3.4 MS. ETS1.1 MS. ETS1.2 MS. ETS1.3 MS. ETS1.4	Force is a push or pull. Friction is a force that acts to oppose a force acting to put a mass in motion. Magnets have two poles; like poles repel and opposite poles attract. Magnets are surrounded by an invisible magnetic force field that acts through space and through all nonmagnetic materials. Energy cannot be created or destroyed, only transferred. Energy sources are either renewable or nonrenewable. Coding is used to allow robots to act without manual control. Technological advancements contribute to our society. Technological advancements are increasing at an alarming rate. Force and friction are both factors that affect robot coding.

Unit Name: **Weather and Water**	**Length:** 48 sessions
Standards: MS.ESS1.1 MS.ESS2.4 MS.ESS2.5 MS.ESS2.6 MS.ESS3.2 MS.ESS3.4 MS.ESS3.5	**Outcomes:** Weather is the product of predictable patterns and circumstances. Climate is the average weather collected over time.Climate changes over time due to natural Earth cycles and human-induced changes.
Topic 1: **What is Weather?**	**Length:** 4 sessions
Standard(s): MS.ESS2.4 MS.ESS2.5 MS.ESS3.2	**Academic Vocabulary:** air pressure, climate, forecast, humidity, meteorologist, meteorology, precipitation, prediction, severe weather, temperature, weather, wind
Essential Questions: What is weather? How can we measure the weather?	**Learning Targets:** Students will learn that weather is the condition of Earth's atmosphere at a given time in a given place. Students will understand that severe weather has the potential to cause death and destruction in the environment. Students will identify meteorology as the science of weather, and meteorologists are the people who study Earth's weather. Students will comprehend that weather and climate are different.
Lesson Frame: Into the Weather	I can explain the difference between weather and climate.
Lesson Frame: Local Weather	I can identify the different ways to measure the weather of any location.
Performance Tasks: Science notebook entries Observations	Notes:
Topic 2: **Where's the Air?**	**Length:** 4 sessions
Standard(s): MS.ESS2.5	**Academic Vocabulary:** air, atmosphere, compress, exosphere, expand, mass, matter, mesosphere, particle, permanent, gas, pressure, state, stratosphere, thermosphere, troposphere, variable gas, weight

Essential Questions: What is air? What is the atmosphere?	**Learning Targets:** Students understand the air is matter; it occupies space, has mass, and can be compressed. Students will learn that the atmosphere is the layers of gases surrounding Earth. Students will identify that weather happens in the troposphere, the layer of the atmosphere closest to Earth's surface. Students will recognize that the troposphere is a mixture of nitrogen, oxygen, and other gases, including argon, carbon dioxide, and water vapor.
Lesson Frame: The Air around Us	I can prove that air is matter and it occupies space, has mass, and can be compressed.
Lesson Frame: Earth's Atmosphere	I can identify the various layers of the atmosphere and their compositions.
Performance Tasks: Science notebook entries Observations Investigation 1-2 I-Check	Notes:
Topic 3: **Air Pressure and Wind**	**Length:** 3 sessions
Standard(s): MS.ESS2.5	**Academic Vocabulary:** atmospheric pressure, bar, barometer, density, equilibrium, isobar, kinetic energy, millibar (mb)
Essential Questions: How does pressure affect air? What happens when two areas of air have different pressures?	**Learning Targets:** Students will comprehend that pressure exerted on a gas reduces its volume and increases its density. Students will understand that wind is a large-scale movement of air. Students will learn that air tends to move from regions of high pressure to regions of low pressure. Students will identify that air pressure is represented on a map by contour lines called isobars.
Lesson Frame: Air-Pressure Inquiry	I can demonstrate how pressure affects air.
Lesson Frame: Pressure Maps	I can identify the isobars on a pressure map. I can explain how pressure creates wind.
Performance Tasks: Science notebook entries Observations Investigation 3 I-Check	Notes:
Topic 4: **Convection**	**Length:** 6 sessions
Standard(s): MS.ESS2.6	**Academic Vocabulary:** convection, convection cell, energy transfer, fluid, model

Essential Questions: What is the relationship between layering of fluids and density? How does heat affect density of fluids? How do gases flow in the atmosphere	**Learning Targets:** Students will understand that density is the ratio of a mass to its volume. Students will recognize that if two solutions have equal volumes but differ in mass, the one with the greater mass is more dense. Students will learn that as matter heats up, it expands, causing the matter to become less dense. Students will identify that convection is the circulation of fluid that results from energy transfer; relatively warm masses rise and relatively cool masses sink.
Lesson Frame: Density of Fluids	I can compare the density of various matters and/or solutions to identify what will float or sink.
Lesson Frame: Convection of Water	I can explain how the variation of temperature within a fluid causes convection within that fluid.
Lesson Frame: Convection of Air	I can explain how the variation of temperature within a gas causes convection within that gas.
Performance Tasks: Science notebook entries Observations Investigation 4 I-Check	Notes:
Topic 5: **Heat Transfer**	**Length:** 6 sessions
Standard(s): MS.ESS1.1 MS.ESS2.6	**Academic Vocabulary:** absorb, climatologist, climatology, differential heating, evidence, heat, latitude, radiant energy, radiation, ray, solar angle, wave
Essential Questions: How does weather differ between locations? How does the Sun affect the temperature of locations on Earth? What factors affect the surface temperature on Earth?	**Learning Targets:** Students will determine that latitude is a factor that affects local weather and climate. Students will recognize that the angle at which light from the Sun strikes the surface of Earth is the solar angle. Students will understand that the lower the solar angle is, the less intense the light is on Earth's surface. Students will recognize that the sun is the major source of energy that heats the atmosphere, and solar energy is transferred by radiation. Students will determine that heat is the increase of kinetic energy of particles.
Lesson Frame: Latitude	I can explain how latitude affects weather and climate.
Lesson Frame: Solar Angle	I can demonstrate how solar angle affects affects weather and climate.
Lesson Frame: Heating Earth	I can explain how radiation heats the earth. I can demonstrate how heat is the result of kinetic energy of particles.
Performance Tasks: Science notebook entries Observations Investigation 5 I-Check	Notes:
Topic 6: Air Flow	**Length:** 4 sessions

Standard(s): MS.ESS2.5 MS.ESS2.6	**Academic Vocabulary:** air mass, conduction, Coriolis effect, jet stream, land breeze, prevailing winds, sea breeze
Essential Questions: How does the atmosphere heat up? How does energy from the Sun affect wind on Earth? What affects the direction of global winds?	**Learning Targets:** Students will determine that energy can move from one material to another by conduction. Students will learn that differential heating of Earth's surface by the Sun can create high- and low-pressure areas. Students will recognize that local winds blow in predictable patterns determined by local differential heating. Students will understand that convection cells and Earth's rotation determining prevailing winds on Earth.
Lesson Frame: Conduction	I can explain how energy transfers from one material to another through conduction.
Lesson Frame: Local Winds	I can explain how differential heating causes predictable wind patterns.
Lesson Frame: Global Winds	I can identify the predictable wind patterns caused by the rotation of the earth and convection cells.
Performance Tasks: Science notebook entries Observations Investigation 6 I-Check	Notes:
Topic 7: **Water in the Air**	**Length:** 7 sessions
Standard(s): MS.ESS2.4	**Academic Vocabulary:** condensation, condensation nucleus, dew point, evaporation, precipitation, saturated, transpiration
Essential Questions: Is there water vapor in the air? How does energy transfer when water changes phases? What causes clouds to form?	**Learning Targets:** Students will determine that water changes from gas to liquid by condensation. Students will verify that water changes from liquid to gas (vapor) by evaporation. Students will recognize that temperature change, which is evidence of energy transfer, accompanies evaporation. Students will learn that the dew point is the temperature at which air is saturated with water vapor and vapor condenses into liquid. Students will recognize that increasing the pressure of a given volume of air increases the temperature of air.
Lesson Frame: Is Water Really There?	I can demonstrate how condensation occurs.
Lesson Frame: Phase Change and Energy Transfer	I can explain how temperature affects the physical state of gases and liquids.
Lesson Frame: Clouds and Precipitation	I can describe how clouds are formed and the point at which precipitation will occur.

Performance Tasks: Science notebook entries Observations Investigation 7 I-Check	Notes:
Topic 8: **Meteorology**	**Length:** 5 sessions
Standard(s): MS.ESS2.5 MS.ESS2.6 MS.ESS3.2	**Academic Vocabulary:** cold front, radiosonde, warm front
Essential Questions: Why are data from weather balloons important? What information can you get from a weather map?	**Learning Targets:** Students will learn that weather balloons travel high in the atmosphere and collect physical data using a radiosonde. Students will understand that the data from weather-balloon radiosonde can be used to determine dew point and the likelihood of clouds forming. Students will recognize that weather maps combine many kinds of atmospheric and surface data, including pressure, temperature, wind direction, wind speed, and precipitation. Students will identify that fronts are areas where large air masses collide.
Lesson Frame: Weather Balloons	I can describe what information is collected by weather balloons and its purpose.
Lesson Frame: Weather Maps	I can use weather maps to make predictions about the weather.
Performance Tasks: Science notebook entries Observations	Notes:
Topic 9: **The Water Planet**	**Length:** 5 sessions
Standard(s): MS.ESS2.4 MS.ESS2.6 MS.ESS3.4	**Academic Vocabulary:** El Niño, groundwater, gyre, ocean current, salinity, water cycle
Essential Questions: What is the water cycle? What affects the direction that ocean water flows? How does the ocean affect climate on land?	**Learning Targets:** Students will learn that most of Earth's water is saltwater in the ocean, and Earth's freshwater is found in many locations. Students will demonstrate that a water particle might follow many different paths as it travels in the water cycle. Students will understand that ocean currents are caused primarily by winds, convection of ocean water, and the Coriolis effect. Students will recognize that a location's proximity to a large body of water generally results in less temperature variation and more precipitation.

Lesson Frame: Water-Cycle Simulation	I can create a diagram of the water cycle. I can explain how the water cycle is a complex system.
Lesson Frame: Ocean Currents	I can use my knowledge of air currents and land masses to determine ocean currents.
Lesson Frame: Ocean Climates	I can describe how the ocean affects climate on land.
Performance Tasks: Science notebook entries Observations Investigation 8-9 I-Check	Notes:
Topic 10: **Climate over Time**	**Length:** 4 sessions
Standard(s): MS.ESS3.2 MS.ESS3.5	**Academic Vocabulary:** carbon dioxide, carbon sequestration, climate change, emission, global warming, greenhouse effect, greenhouse gas, ice core, infrared, paleoclimatology, pollutant
Essential Questions: How have climates changed over time? How do greenhouse gases in the atmosphere affect Earth's temperature? What are the effects of a slight rise in global temperatures? What is the difference between weather and climate?	**Learning Targets:** Students will understand that weather is the condition of the atmosphere at a specific time and location; climate is the average weather in a region over a long period of time. Students will identify that climate can change over time because of natural Earth cycles or human-induced changes. Students will recognize that when greenhouse-gas concentrations in the atmosphere increase, the global temperature rises. Students will verify that human activity can affect Earth's weather and climate.
Lesson Frame: Climate Change	I can explain how climate has changed over time.
Lesson Frame: The Role of Carbon Dioxide	I can identify the relationship between greenhouse gases and the increase of global temperatures.
Lesson Frame: Climate in the News	I can recognize how human activity affects Earth's weather and climate.
Lesson Frame: Identify Key Ideas	I can describe the differences between weather and climate.
Performance Tasks: Science notebook entries Observations Posttest	Notes:

Unit Name: **Diversity of Life**	**Length:** 60 sessions
Standards: MS.LS1.1 MS.LS1.2 MS.LS1.3 MS.LS1.4 MS.LS1.5 MS.LS1.6 MS.LS1.7 MS.LS3.2	**Outcomes:** All living things are made of cells. All organisms exhibit common characteristics and have certain requirements. Plants reproduce in a variety of ways. Genes are responsible for an organism's traits. Asexual reproduction results in offspring with identical genetic information. Sexual reproduction results in offspring with genetic variation, similar to parents but not identical. Organisms have structures and behaviors that enhance their chances of surviving and reproducing in their environment. Biodiversity is the wide range of existing life-forms that have adapted to the variety of conditions on Earth.
Topic 1: **What is Life?**	**Length:** 6 sessions
Standard(s): MS.LS1.1 MS.LS1.3	**Academic Vocabulary:** evidence, habitat, living, non living, organism, dead, dormant
Essential Questions: How do you know if something is living?	**Learning Targets:** Students will learn that any free-living thing is an organism. Students will recognize that all organisms exhibit common characteristics and have certain requirements. Students will understand that something can be dead only if it was once living. Students will learn that some organisms can become dormant to survive in an unsuitable environment.
Lesson Frame: Living or Nonliving	I can identify if something is living or nonliving.
Lesson Frame: Is Anything Alive in Here?	I can identify the common characteristics and requirements for all organisms.
Performance Tasks: Science notebook entries Observations	Notes:
Topic 2: **The Microscope**	**Length:** 6 sessions
Standard(s): MS.LS1.1 MS.LS1.2	**Academic Vocabulary:** compound microscope, field of view, magnification, magnify, power, scale

Essential Questions: How do objects appear when they are viewed through a microscope? How can we estimate the size of an object by looking at it through a microscope? What evidence can we find that brine shrimp are living organisms?	**Learning Targets:** Students will recognize the components of a compound optical microscope. Students will learn that a microscope's optical power is the product of the magnification of the eyepiece and the objective lens. Students will determine that the field of view is the diameter of the circle of light seen through the microscope which decreases and the power increases. Students will recognize that a microscope may reverse and invert images. Students will recognize the common characteristics of life within a microscopic organism contained on a wet mount slide.
Lesson Frame: Meet the Microscope	I can identify the different parts of a compound optical microscope.
Lesson Frame: Field of View	I can determine the size of the field of view based upon the optical power being used.
Lesson Frame: Microscopic LIfe	I can recognize that a microscopic organism can exhibit common characteristics of life.
Performance Tasks: Science notebook entries Observations	Notes:
Topic 3: **The Cell**	**Length:** 8 sessions
Standard(s): MS.LS1.1 MS.LS1.2 MS.LS3.2	**Academic Vocabulary:** Asexual reproduction, cell, cell membrane, cell structure, cell wall, chlorophyll, chloroplast, cytoplasm, dormancy, elodea, mitochondrion, multicellular organism, nucleus, organelle, paramecium, protist, single-celled organism
Essential Questions: What microscopic structures make up organisms such as elodea? How are elodea and the paramecium alike, and how are they different? Is there life in the mini habitats? If so, where did it come from? What microscopic structures make up organisms such as humans (you)?	**Learning Targets:** The cell is the basic unit of life. All living things are made up of one or more cells. Every cell has structures that enable it to carry out life's functions. Both single-celled and multicellular organisms exhibit all the characteristics of life. Some organisms can become dormant to survive in an unsuitable environment. Asexual reproduction is a method of reproduction that results in offspring with identical genetic information.
Lesson Frame: Discovering Cells	I can diagram and define plant cell structures and functions.
Lesson Frame: Paramecia	I can diagram and define protist cell structures and functions. I can explain the concept of asexual reproduction.
Lesson Frame: Microworlds	I can describe how and why some organisms become dormant.
Lesson Frame: Human Cheek Tissue	I can diagram and define animal cell structures and functions.

Performance Tasks: Science notebook entries Observations Investigation 1-3 I-Check	Notes:
Topic 4: **Domains**	**Length:** 9 sessions
Standard(s): MS.LS1.1 MS.LS1.2 MS.LS3.2	**Academic Vocabulary:** Archaea, atom, bacteria, classification, colony, control, culture, decomposer, domain, E. coli, eukaryote, fungus, microorganism, molecule, penicillium, plasmid, prokaryote, spore
Essential Questions: What are the building blocks of cell structures? What evidence is there that bacteria are living organisms? What evidence is there that fungi are living organisms? What are the characteristics of archaea?	**Learning Targets:** Cells are made of cell structures which are made of molecules, which are made of atoms. Bacteria, fungi, and archaea demonstrate all the characteristics of life. Life is classified into three domains (Archaea, Bacteria, Eukarya), depending upon cellular and molecular characteristics.
Lesson Frame: Comparing Living Things	I can explain that cells are made of molecules which are made of atoms.
Lesson Frame: Bacteria	I can describe how bacteria demonstrates all the characteristics of life.
Lesson Frame: Fungi	I can describe how fungi demonstrates all the characteristics of life.
Lesson Frame: Archaea: The Three Domains	I can identify the three domains of life based upon cellular and molecular characteristics.
Performance Tasks: Science notebook entries Observations Investigation 4 I-Check	Notes:
Topic 5: **The Vascular System**	**Length:** 8 sessions
Standard(s): MS.LS1.1 MS.LS1.3 MS.LS1.6 MS.LS1.7	**Academic Vocabulary:** absorb, climatologist, climatology, differential heating, evidence, heat, latitude, radiant energy, radiation, ray, solar angle, wave

Essential Questions: What happened to the water? How does water travel through a plant? How do plants use water?	**Learning Targets:** Transpiration is the process by which water is carried through vascular plants from the roots to stomata, ensuring that all the cells have access to water. The vascular system of plants consists of xylem and phloem. Plants use photosynthesis and aerobic cellular respiration to make usable energy from the Sun's energy. Cells are the building blocks of tissues, which are the building blocks of organs, which are the building blocks of organ systems, which are the building blocks of multicellular organisms.
Lesson Frame: What Happened to the Water?	I can explain the process of transpiration.
Lesson Frame: Looking at Plant Structures	I can demonstrate how the vascular system of plants works.
Lesson Frame: Transpiration and Photosynthesis	I can describe how transpiration and photosynthesis are necessary for cell life.
Performance Tasks: Science notebook entries Observations Investigation 5 I-Check	Notes:
Topic 6: **Plant Reproduction and Growth**	**Length:** 8 sessions
Standard(s): MS.LS1.4 MS.LS1.5 MS.LS3.2	**Academic Vocabulary:** adaptation, coevolve, egg, environmental factor, fertilize, flower, genetic factor, germination, pollination, pollination syndrome, pollinator, salinity, salt tolerance, seed, sexual reproduction, sperm
Essential Questions: How do the structural adaptations of seeds help them survive? How do environmental factors affect the germination and early growth of different food crops? What is the role of a flower? What adaptations do flowering plants have to accomplish pollination?	Learning Targets: Environmental and genetic factors affect the germination and growth of plants. Flowering plants reproduce sexually, producing seeds, which contain dormant new plants. Flowering plants have characteristics that attract pollinators to ensure successful pollination and reproduction. Pollinators are attracted to flowers that meet their needs.
Lesson Frame: Lima Bean Dissection	I can explain how flowering plants reproduce.
Lesson Frame: Environmental and Genetic Factors	I can describe how environmental and genetic factors affect plants.
Lesson Frame: Flowering-Plant Reproduction	I can create a diagram of the sequence for flowering plant reproduction.
Lesson Frame: Flowers and Pollinators	I can determine the characteristics of a flowering plant that attracts pollinators.
Performance Tasks: Science notebook entries Observations Investigation 6 I-Check	Notes:

Topic 7: **Variation of Traits**	**Length:** 4 sessions
Standard(s): MS.LS3.2	**Academic Vocabulary:** allele, characteristic, chromosome, cross, DNA, dominant, feature, filial, gene, generation, genotype, heredity, heterozygous, homozygous, inheritance, phenotype, population, punnett square, recessive, trait, variation
Essential Questions: How do traits pass from parents to offspring? how does sexual reproduction produce variation in offspring?	**Learning Targets:** During reproduction (both sexual and asexual), organisms transfer genetic information to offspring. Genes define an organism's genotype. Genes code for proteins, which determine an organism's phenotype. In sexually reproducing organisms, each parent contributes half the offspring's alleles, so that offspring have genotypes that are similar but not identical to either parent. Variation of traits in a population of plants or animals is established in part as a result of sexual reproduction.
Lesson Frame: Inheriting Traits	I can explain how parents transfer genetic information to their offspring.
Lesson Frame: Modeling Heredity	I can use a Punnett square to predict the ratio of genotypes in future generations of sexually reproducing organism.
Performance Tasks: Science notebook entries Observations Investigation 7 I-Check	Notes:
Topic 8: **Insects**	**Length:** 5 sessions
Standard(s): MS.LS1.3 MS.LS1.4	**Academic Vocabulary:** behavior, function, structure
Essential Questions: How do the structures and behaviors of the Madagascar hissing cockroach enable life's functions? How is the insect transport system like plant and human transport systems and how is it different?	**Learning Targets:** The structures and behaviors of an organism have functions that enhance the organism's chance to survive and reproduce in its habitat. Cells are the building blocks of tissues, which are the building blocks of organs, which are the building blocks of organ systems, which are the building blocks of multicellular organisms. Insects have open circulatory systems that transport substances to and away from their cells.
Lesson Frame: Structure, Function, and Behavior	I can recognize the structures and behaviors of an organism that enhances its chances to survive and reproduce.
Lesson Frame: Insect Systems	I can compare the insect circulatory system to the plant vascular system and the human cardiovascular system.

Performance Tasks: Science notebook entries Observations	Notes:
Topic 9: **Diversity of Life**	**Length:** 6 sessions
Standard(s): MS.LS1.1	**Academic Vocabulary:** biodiversity, virus
Essential Questions: What is the water cycle? What affects the direction that ocean water flows? How does the ocean affect climate on land?	**Learning Targets:** Biodiversity is the variety of life that exists in a particular habitat or ecosystem. Measuring biodiversity includes measuring both the variety of organisms and the number of organisms in a habitat or ecosystem. Scientific debate regarding whether viruses are living is ongoing.
Lesson Frame: Bioblitz	I can identify the biodiversity within a habitat or ecosystem.
Lesson Frame: What is Life?	I can use my knowledge of living characteristics to debate whether a virus is a living organism.
Performance Tasks: Science notebook entries Observations Posttest	Notes:

Unit Name: **Robotics**	**Length:** 24 sessions
Standards: MS.PS2.2 MS.PS2.3 MS.PS2.5 MS.PS3.2 MS.PS3.5 MS.ESS3.4 MS.ETS1.1 MS.ETS1.2 MS.ETS1.3 MS.ETS1.4	**Outcomes:** Force is a push or pull. Friction is a force that acts to oppose a force acting to put a mass in motion. Magnets have two poles; like poles repel and opposite poles attract. Magnets are surrounded by an invisible magnetic force field that acts through space and through all nonmagnetic materials. Energy cannot be created or destroyed, only transferred. Energy sources are either renewable or nonrenewable. Coding is used to allow robots to act without manual control. Technological advancements contribute to our society. Technological advancements are increasing at an alarming rate. Force and friction are both factors that affect robot coding.
Topic 1: **What is Force?**	**Length:** 3 sessions
Standard(s): MS.PS2.2	**Academic Vocabulary:** friction, force, kinetic energy
Essential Questions: What makes things move? How does friction affect the force needed to move an object? How do multiple forces affect motion?	**Learning Targets:** Students will learn that a force is a push or a pull. Students will understand that the metric unit for force is the newton (N). Students will recognize that friction is a force that acts to oppose a force acting to put a mass in motion. Students will learn that net force is the sum of the forces acting on a mass.
Lesson Frame: Push and Pull	I can identify that a force is a push or a pull.
Lesson Frame: Friction	I can demonstrate that friction is a force that acts to oppose a force acting to put a mass in motion.
Lesson Frame: Forces in Action	I can determine the net force of the forces acting upon a mass.
Performance Tasks: Science notebook entries Observations Investigation 1 I-Check	Notes:
Topic 2: **The Force of Magnetism**	**Length:** 3 sessions
Standard(s): MS.PS2.2 MS.PS2.3 MS.PS2.5 MS.PS3.2	**Academic Vocabulary:** attract, magnetic field, magnetic force, magnitude, pole, repel

Essential Questions: What happens when magnets interact? How can we detect a magnetic field? What factors affect the force of attraction between magnets?	**Learning Targets:** Students will recognize that magnets stick to (attract) objects that contain iron. Students will learn that all magnets have two poles; Like poles of magnets repel each other; opposite poles attract. Students will determine that magnets are surrounded by an invisible magnetic force field, which acts through space and through all nonmagnetic materials. Students will learn that magnetic materials may become magnets when they interact with magnetic fields. Students will recognize that the magnitude of the magnetic force between two interacting magnetic fields decreases as the distance between them increases.
Lesson Frame: Properties of Magnets	I can identify the poles of a magnet and what it will attract.
Lesson Frame: Magnetic Fields	I can demonstrate that a magnetic field surrounds a magnet and acts through nonmagnetic materials.
Lesson Frame: Force over Distance	I can recognize that the magnitude of the magnetic forces between to interacting fields decrease as they get closer together.
Performance Tasks: Science notebook entries Observations	Notes:
Topic 3: **Introduction to Robots**	Length: 6 sessions
Standard(s): MS.PS2.2 MS.PS2.3 MS.PS2.5 MS.LS3.2 MS.ETS1.1 MS.ETS1.2 MS.ETS1.3 MS.ETS1.4 MS.ESS3.3 MS.ESS3.4	**Academic Vocabulary:** circuit, code, electrical force, machine, magnetic force, programming, robot
Essential Questions: How does an electric motor work? How do robots work? What is the relationship between magnetic and electrical forces?	**Learning Targets:** Students will learn that energy transfers through an electric circuit from a source to components. Students will understand that energy cannot be created or destroyed, only transferred. Students will recognize the difference between a machine and a robot. Students will determine whether an energy source is renewable or nonrenewable. Students will recognize how technological advancements are contributing to society.
Lesson Frame: Electric Motors	I can explain how energy transfers through a motor to other components.
Lesson Frame: What is a Robot?	I can identify the difference between a machine and a robot and their benefits.
Lesson Frame: Force and Energy	I can determine if an energy source is renewable or nonrenewable.

Performance Tasks: Science notebook entries Observations Robot Presentation	Notes:
Topic 4: **Programming**	**Length:** 12 sessions
Standard(s): MS.PS2.2 MS.PS2.3 MS.PS2.5 MS.LS3.2 MS.ETS1.1 MS.ETS1.2 MS.ETS1.3 MS.ETS1.4 MS.ESS3.3 MS.ESS3.4	**Academic Vocabulary:** code, commands, eye, force, gyro, infrared, interactive, pressure
Essential Questions: What is coding? How does a blueprint help during construction? How does force and motion affect a turning car? How does friction and weight affect a moving vehicle?	**Learning Targets:** Students will learn the basic fundamentals of coding. Students will understand the importance of blueprints and how to interpret them. Students will recognize that force and motion affect the distance a vehicle moves. Students will plan and modify a design based upon the force and motion exerted upon the vehicle. Students will plan, build, and modify a robot for the sole intent of a specific purpose.
Lesson Frame: Coding	I can determine what commands to use to create an interactive computer game.
Lesson Frame: Basic Unit	I can construct a basic robot using a blueprint and building instructions.
Lesson Frame: 3 Point Turn	I can use my knowledge of coding and energy to program a robot to execute a 3 point turn.
Lesson Frame: Task Specific Programming	I can determine which coding principles to use to manipulate a basic unit and overcome the friction and other forces applied to complete a specific task.
Performance Tasks: Science notebook entries Observations Mechanical Designs Coding Project Completion Posttest	Notes:

Course Name:	7/8 Science Course A		
Credits:	n/a		
Prerequisites:	n/a		
Description:	Course covering aspects within Physical, Earth and Life Sciences.		
Academic Standards:	Next-Generation Science Standards		
Units:	**Unit Length:**	**Unit Standards:**	**Unit Outcomes:**
Chemical Interactions	approximately 63 days	MS-PS1-1, MS-PS1-2, MS-PS1-3, MS-PS1-4, MS-PS1-5, MS-PS1-6, MS-PS3-3, MS-PS3-4, MS-PS3-5, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4	Students observe a mystery-mixture reaction and begin to consider the definition of substance and chemical reaction. They identify the two substances in the mystery mixture by observing the characteristics of the reactions that occur when they mix pairs of known substances. Students learn about the periodic table of the elements. They use an online resource to consider properties and categories of elements, and to research individual elements. Students read consumer-product labels to think about the presence of elements in familiar substances. Students recreate the mystery-mixture reaction, using a setup that allows them to capture and study the resulting gas. They learn that the gas is carbon dioxide, which leads them to a study of air. They use syringes to discover that air can be compressed and expanded. Students start to develop a particulate model for matter. Students observe expansion and contraction of solids, liquids, and gases, and explain the phenomena in terms of kinetic theory—the constant motion of particles. Students learn one way that energy moves and how to conceptualize energy transfer as changes of the kinetic energy of particles resulting from particle collisions. Students mix equal volumes of hot and cold water and predict the final temperature. They use the result to determine an algorithm for calculating final temperature. Students are introduced to the calorie as a unit of energy transfer. Students use their understanding of energy transfer to face an engineering problem: how to build a container that keeps hot liquids hot and cold liquids cold. They test materials for their insulating properties in preparation for the design challenge. They determine criteria and constraints in the engineering design process and test their designs. Students explore the difference between melting and dissolving. They go on to study dissolving by comparing aqueous mixtures, one with a soluble solid and one with an insoluble solid. They compare the two mixtures and then attempt to separate them with filters and evaporation. Students experience three common phases (states) of matter—solid, liquid, and gas— and investigate the conditions that induce substances to change from one phase to another. Students engage in an engineering challenge to design a classroom “freezer” that will freeze water. Students blow bubbles into limewater, observe the precipitate, and move atom tiles (representations) to simulate the rearrangement of atoms to form new substances (particles). Students study another reaction involving hydrochloric acid and baking soda and learn to use models to balance chemical equations. Students conduct more chemical reactions, learning about limiting factors and reactants in excess.

Human Systems Interactions	approximately 28 days	MS-LS1-1, MS-LS1-3, MS-LS1-7, MS-LS1-8	Students solve a disease mystery. On the path to diagnosis, students discover the structural levels in human bodies: that cells form tissues, tissues form organs, organs form organ systems, and systems form a complex multicellular organism, the human. They look for evidence of how the organ systems interact, each dependent on all the others for its needs. Students fatigue their muscles and think about how their cells obtain the food and oxygen they need from the digestive, respiratory, and circulatory systems. They learn how aerobic cellular respiration works in cells. They find out that the cells eliminate wastes produced during aerobic cellular respiration via circulatory, respiratory, and excretory systems. Students explore the different senses to understand how humans acquire information from the environment. They engage in a “neuron relay” to model how sensory information travels to the brain for processing and how information returns to the body for action. Students turn their attention to their own learning and memory formation.
Heredity and Adaptations	approximately 31 days	MS-LS3-1, MS-LS3-2, MS-LS4-1, MS-LS4-2, MS-LS4-3, MS-LS4-4, MS-LS4-5, MS-LS4-6, MS-ESS1-4	Students are introduced to the big question that drives the course: How can we explain the diversity of life that exists on Earth? They take a tour of the fossil record, looking for evidence of the existence, diversity, and transitions in life-forms throughout Earth’s history. Students start this investigation with an exploration of evolutionary relationships. They examine a family tree and build a cladogram. Students build a model for how traits are inherited, starting with themselves and moving to a population of imaginary animals, larkeys. They learn about the basis of heredity, chromosomes and genes, and how genetic variation arises in populations. Students use Punnett squares to predict the probability of trait inheritance when the genotypes of the parents are known. Students consider how mutations lead to variation in a population. They see how positive mutations lead to adaptations and how natural selection works, leading to changes in populations over time. They consider the evidence for the theory of evolution. Finally, they research genetic technologies that humans use to influence inheritance and disease.

Planetary Science	approximately 52 days	MS-ESS1-1, MS-ESS1-2, MS-ESS1-3, MS-ESS1-4, MS-ESS2-2, MS-ESS2-4, MS-ESS3-1, MS-ESS3-2, MS-ESS3-3, MS-ESS3-4, MS-PS2-4, MS-PS4-2, MS-ETS1-1	Students develop a sense of planet Earth as a tiny base from which to launch an inquiry into the vast reaches of the solar system and beyond. They observe the Moon and start a log of its changes. Students become familiar with the celestial relationship of the Sun and Earth. They think not only about what they know (Earth is round) but how they know it. They simulate the basic geometry of Earth and the Sun to explain day, night, and year. Students apply what they know about Earth's tilt and the revolution of Earth around the Sun to explain daylight length and seasons. Students learn the factors resulting in seasons, including latitude, tilt of Earth's axis, revolution, and rotation. Students study the surface features of the Moon and the size and distance of our closest celestial neighbor. They read myths to experience how other cultures explain the features and behavior of the Moon. Students analyze Moon log data to identify the pattern of Moon phases, then develop a physical model that can explain Moon phases. They explain how the motions of Earth and the Moon in relation to the Sun result in the phases of the Moon we observe on Earth. Students conduct simple experiments to determine if the craters on the Moon's surface could be caused by impact events of various magnitudes. They use Moon data to determine the number and frequency of major impacts. Students learn the major classifications in which cosmic objects are distributed: solar system, galaxy, universe. They sequence the events that led to the formation of the solar system. Students explore four theories of Moon origin. Students explore the scale of the solar system by making physical and graphical models. They explore the relationship of atmosphere, planet temperature, and liquid water. They search images of planets and satellites for evidence of water. Students are introduced to a tool used to study distant objects in planetary systems, the spectroscope. They use a simple spectroscope to become aware of the spectral signature of elements. Students use telescope images of the moons of Jupiter to determine their orbital patterns and distances from the planet. They study techniques used to search for planets and planetary systems around other stars in the Milky Way galaxy.

Unit Name: **Chemical Interactions**	**Length:** approximately 63 days
Standards: MS-PS1-1, MS-PS1-2, MS-PS1-3, MS-PS1-4, MS-PS1-5, MS-PS1-6, MS-PS3-3, MS-PS3-4, MS-PS3-5, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4	**Outcomes:** Students observe a mystery-mixture reaction and begin to consider the definition of substance and chemical reaction. They identify the two substances in the mystery mixture by observing the characteristics of the reactions that occur when they mix pairs of known substances. Students learn about the periodic table of the elements. They use an online resource to consider properties and categories of elements, and to research individual elements. Students read consumer-product labels to think about the presence of elements in familiar substances. Students recreate the mystery-mixture reaction, using a setup that allows them to capture and study the resulting gas. They learn that the gas is carbon dioxide, which leads them to a study of air. They use syringes to discover that air can be compressed and expanded. Students start to develop a particulate model for matter. Students observe expansion and contraction of solids, liquids, and gases, and explain the phenomena in terms of kinetic theory—the constant motion of particles. Students learn one way that energy moves and how to conceptualize energy transfer as changes of the kinetic energy of particles resulting from particle collisions. Students mix equal volumes of hot and cold water and predict the final temperature. They use the result to determine an algorithm for calculating final temperature. Students are introduced to the calorie as a unit of energy transfer. Students use their understanding of energy transfer to face an engineering problem: how to build a container that keeps hot liquids hot and cold liquids cold. They test materials for their insulating properties in preparation for the design challenge. They determine criteria and constraints in the engineering design process and test their designs. Students explore the difference between melting and dissolving. They go on to study dissolving by comparing aqueous mixtures, one with a soluble solid and one with an insoluble solid. They compare the two mixtures and then attempt to separate them with filters and evaporation. Students experience three common phases (states) of matter—solid, liquid, and gas— and investigate the conditions that induce substances to change from one phase to another. Students engage in an engineering challenge to design a classroom “freezer” that will freeze water. Students blow bubbles into limewater, observe the precipitate, and move atom tiles (representations) to simulate the rearrangement of atoms to form new substances (particles). Students study another reaction involving hydrochloric acid and baking soda and learn to use models to balance chemical equations. Students conduct more chemical reactions, learning about limiting factors and reactants in excess.

Essential Questions:

How can we find out what two substances are in the mystery mixture?
What is the periodic table of elements?
What makes up all the substances of Earth?
How can the gas produced in a chemical reaction be studied?
Is air matter? Does air have mass and take up space?
What is the relationship between particles in matter?
What happens to particles in a sample of air when the air is heated and cooled?
What happens to particles in a sample of liquid when the liquid is heated and cooled?
What happens to particles in a sample of solid when the solid is heated and cooled?
If two equal volumes of hot and cold water are mixed, what will the final temperature be?
How does energy transfer from one substance to another?
How is heat measured?
How can you reduce energy transfer to or from a sample of water?
What is the best thermos design?
What is the difference between dissolving and melting?
Do all substances form solutions in water?
What happens at the particle level when a substance melts?
What is the relationship between melting and freezing?
How can you freeze water in the classroom?
What are all the ways that a substance can change state?
How do atoms combine to make new substances?
What happens at the particle level during a chemical reaction?
What is the chemical reaction between hydrochloric acid and sodium bicarbonate?
What is a limiting factor in a chemical reaction?
What have I learned about chemical interactions?

Learning Targets:

Students will learn that:
•a substance is a form of matter with a unique composition and distinct physical and chemical properties that can be used to identify it
•substances can be represented with common names, chemical names, and chemical formulas
•a chemical reaction occurs when substances interact to form new substances (products)
•an element is a basic substance that cannot be broken into simpler substances during chemical interactions
•there are 90 naturally occurring elements on Earth
•elements combine to make all the substances on Earth
•the relative abundance of elements varies with location in the universe
•matter is made of particles; every substance is defined by a unique particle
•gas is matter -- it has mass and occupies space; in a gas, particles are widely spaced and in constant motion
•gas compresses when force is applied; gas expands when force is withdrawn
•during compression and expansion, the number and character of particles in a sample of gas do not change; the space between the particles does change
•solids, liquids, and gases vary in how their particles are arranged in relationship to one another, but the particles are always in motion, kinetic energy is energy of motion
•the particles in substances gain kinetic energy as they warm, and los kinetic energy as they cool
•matter expands when the kinetic energy of its particles increases; matter contracts when the kinetic energy of its particles decreases
•energy transfers between particles when they collide. Energy transfer by contact is conduction.
•energy always transfers from particles with more kinetic energy to particles with less kinetic energy.
•energy is conserved. The amount of energy in a system does not change- no energy is ever created or destroyed.
•temperature is a measure of the average kinetic energy of the particles of a substance.
•insulating materials reduce energy transfer via conduction.
•materials with more widely spaced particles serve as better insulators.
•engineers try to solve problems that satisfy a set of criteria and that conform to constraints placed on a solution to the problem.
•dissolving occurs when one substance (solute) is reduced to particles and is distributed uniformly throughout the particles of the second substance (solvent).
•dissolving involves both kinetic interactions (collisions) and attractive forces (bonds).
•not all substances are soluble in water.
•solutions can be separated into their original components, which are not chemically changed during dissolution.
•matter exists on Earth in three common states -- solid, liquid, and gas.
•change of state is the result of change of energy and motion of the particles in a sample of matter.
•during phase change, particles do not change; relationships between particles do change.
•the temperatures at which phase changes occur are different for different substances.
•the processes of phase change are evaporation, condensation, melting, freezing, sublimation, and deposition.
•all substances are made from some 90 different types of atoms (elements), which combine in various ways.
•a compound is a substance composed of two or more different kinds of atoms.
•atoms combine to make particles of substances: molecules and ionic compounds held together by attractive forces called bonds.
•a chemical reaction is a process in which the atoms of substances rearrange to form new

Topic 1: **Substances**	**Length:** 6 sessions
Standard(s): MS-PS1-2	**Academic Vocabulary:** chemical formula, chemical name, chemical reaction, matter, substance
Lesson Frame: Mystery Mixture	We will:
	I will:
Lesson Frame: Mixing Substances	We will:
	I will:
Essential Questions: How can we find out what two substances are in the mystery mixture?	**Outcomes:** Students observe a mystery-mixture reaction and begin to consider the definition of substance and chemical reaction. They identify the two substances in the mystery mixture by observing the characteristics of the reactions that occur when they mix pairs of known substances.
Performance Tasks: •Mix substances with water in an effort to determine the identity of an unknown mixture of substances •Analyze and interpret data on the properties of substances before and after a chemical reaction •Explain that as a result of a reaction initial substances change into new, different substances. •Explain how to identify the two substances in a mystery mixture	**Learning Targets:** Students will learn that: •a substance is a form of matter with a unique composition and distinct physical and chemical properties that can be used to identify it •substances can be represented with common names, chemical names, and chemical formulas •a chemical reaction occurs when substances interact to form new substances (products)
Topic 2: **Elements**	**Length:** 5 sessions
Standard(s): MS-PS1-1, MS-PS1-3	**Academic Vocabulary:** element, periodic table of elements, symbol
Lesson Frame: Periodic Table	We will:
	I will:
Lesson Frame: Elements in the World	We will:
	I will:
Essential Questions: •What is the periodic table of elements? •What makes up all the substances of Earth?	**Outcomes:** Students learn about the periodic table of the elements. They use an online resource to consider properties and categories of elements, and to research individual elements. Students read consumer-product labels to think about the presence of elements in familiar substances.

Performance Tasks: •Use graphical displays of information in the periodic the to analyze substances in terms of their elemental composition •Explain that all common matter is made of elements •Consider the composition of natural resources and synthetic materials	**Learning Targets:** Students will learn that: •an element is a basic substance that cannot be broken into simpler substances during chemical interactions •there are 90 naturally occurring elements on Earth •elements combine to make all the substances on Earth •the relative abundance of elements varies with location in the universe •the periodic table of the elements displays all naturally occurring and synthesized elements
Topic 3: **Particles**	**Length:** 8 sessions
Standard(s): MS-PS1-2, MS-PS1-4	**Academic Vocabulary:** compress, compression, expand, expansion, gas, liquid, particle, solid
Lesson Frame: Capture the Gas	We will:
	I will:
Lesson Frame: Air is Matter	We will:
	I will:
Lesson Frame: Air as Particles	We will:
	I will:
Essential Questions: •How can the gas produced in a chemical reaction be studied? •Is air matter? Does air have mass and take up space? •What is the relationship between particles in matter?	**Outcomes:** Students recreate the mystery-mixture reaction, using a setup that allows them to capture and study the resulting gas. They learn that the gas is carbon dioxide, which leads them to a study of air. They use syringes to discover that air can be compressed and expanded. Students start to develop a particulate model for matter.
Performance Tasks: •Carry out an investigation to determine the volume of gas produced in a chemical reaction •Plan experimentation to observe the effects of pressure on gases •Develop a model of gas as individual particles in constant motion •Apply the gas model to explain compression and expansion	**Learning Targets:** Students will Learn that: •matter is made of particles; every substance is defined by a unique particle •gas is matter -- it has mass and occupies space; in a gas, particles are widely spaced and in constant motion •gas compresses when force is applied; gas expands when force is withdrawn •during compression and expansion, the number and character of particles in a sample of gas do not change; the space between the particles does change
Topic 4: **Kinetic Energy**	**Length:** 7 sessions
Standard(s): MS-PS1-4	**Academic Vocabulary:** contract, contraction, kinetic energy, temperature, thermometer
Lesson Frame: Gas Expansion/ Contraction	We will:
	I will:
Lesson Frame: Liquid Expansion/Contraction	We will:
	I will:

Lesson Frame: Solid Expansion/Contraction	We will:
	I will:
Essential Questions: •What happens to particles in a sample of air when the air is heated and cooled? •What happens to particles in a sample of liquid when the liquid is heated and cooled? •What happens to particles in a sample of solid when the solid is heated and cooled?	**Outcomes:** Students observe expansion and contraction of solids, liquids, and gases, and explain the phenomena in terms of kinetic theory—the constant motion of particles.
Performance Tasks: •Carry out an investigation heating and cooling gas, liquid, and solid matter to observe expansion and contraction •Develop a model of kinetic energy at the particle level •Construct an explanation of how a thermometer works	**Learning Targets:** Students will learn that: •solids, liquids, and gases vary in how their particles are arranged in relationship to one another, but the particles are always in motion •kinetic energy is energy of motion •the particles in substances gain kinetic energy as they warm, and los kinetic energy as they cool •matter expands when the kinetic energy of its particles increases; matter contracts when the kinetic energy of its particles decreases
Topic 5: **Energy Transfer**	**Length:** 8 sessions
Standard(s): MS-PS1-4, MS-PS3-3, MS-PS3-4, MS-PS3-5	**Academic Vocabulary:** calorie, conduction, conservation of energy, cooling, energy transfer, equilibrium, heating
Lesson Frame: Mixing Hot and Cold	We will:
	I will:
Lesson Frame: Particle Collision	We will:
	I will:
Lesson Frame: Heat	We will:
	I will:
Essential Questions: •If two equal volumes of hot and cold water are mixed, what will the final temperature be? •How does energy transfer from one substance to another? •How is heat measured?	**Outcomes:** Students learn one way that energy moves and how to conceptualize energy transfer as changes of the kinetic energy of particles resulting from particle collisions. Students mix equal volumes of hot and cold water and predict the final temperature. They use the result to determine an algorithm for calculating final temperature. Students are introduced to the calorie as a unit of energy transfer.
Performance Tasks: •Plan an investigation to mix hot and cold water to observe energy transfer •Explain energy transfer in terms of the change of particle kinetic energy resulting from conduction •Calculate and discuss energy transfer in calories. •Analyze data to develop ideas about conservation of energy.	**Learning Targets:** Students will Learn that: •energy transfers between particles when they collide. Energy transfer by contact is conduction. •energy always transfers from particles with more kinetic energy to particles with less kinetic energy. •energy is conserved. The amount of energy in a system does not change- no energy is ever created or destroyed. •temperature is a measure of the average kinetic energy of the particles of a substance.

Topic 6: **Thermos Engineering**	**Length:** 5 sessions
Standard(s): MS-PS3-3, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4	**Academic Vocabulary:** constraint, criterion, engineering problem, insulation
Lesson Frame: Insulation	We will:
	I will:
Lesson Frame: Thermos Design	We will:
	I will:
Essential Questions: •How can you reduce energy transfer to or from a sample of water? •What is the best thermos design?	**Outcomes:** Students use their understanding of energy transfer to face an engineering problem: how to build a container that keeps hot liquids hot and cold liquids cold. They test materials for their insulating properties in preparation for the design challenge. They determine criteria and constraints in the engineering design process and test their designs.
Performance Tasks: •Apply principles of energy transfer and conduction to design, construct, and test a device that minimizes thermal-energy transfer •Collect energy-transfer data over multiple trials and multiple design iterations •Analyze data from tests of design solutions to identify characteristics that can be combined to satisfy the criteria for success	**Learning Targets:** Students will learn that: •insulating materials reduce energy transfer via conduction. •materials with more widely spaced particles serve as better insulators. •engineers try to solve problems that satisfy a set of criteria and that conform to constraints placed on a solution to the problem.
Topic 7: **Solutions**	**Length:** 3 sessions
Standard(s): MS-PS1-1, MS-PS1-2, MS-PS1-4	**Academic Vocabulary:** dissolve, melt, mixture, solubility, solute, solution, solvent
Lesson Frame: Dissolve and Melt	We will:
	I will:
Lesson Frame: Solubility	We will:
	I will:
Essential Questions: •What is the difference between dissolving and melting? •Do all substances form solutions in water?	**Outcomes:** Students explore the difference between melting and dissolving. They go on to study dissolving by comparing aqueous mixtures, one with a soluble solid and one with an insoluble solid. They compare the two mixtures and then attempt to separate them with filters and evaporation.

Performance Tasks: •Carry out an investigation to determine that some solids dissolve and others don't •Develop a particle model to explain the process of dissolving •Design methods to separate aqueous solutions. •Engage in argumentation from evidence to distinguish between dissolving and melting	**Learning Targets:** Students will learn that: •dissolving occurs when one substance (solute) is reduced to particles and is distributed uniformly throughout the particles of the second substance (solvent). •dissolving involves both kinetic interactions (collisions) and attractive forces (bonds). •not all substances are soluble in water. •solutions can be separated into their original components, which are not chemically changed during dissolution.
Topic 8: **Phase Change**	**Length:** 8 sessions
Standard(s): MS-PS1-4, MS-PS1-6, MS-3-4, MS-ETS1-2, MS-ETS1-3	**Academic Vocabulary:** condensation, deposition, evaporation, freeze, freezing point, melting point, phase change, state of matter, sublimation
Lesson Frame: Melting Temperature	We will:
	I will:
Lesson Frame: Adding Thermal Energy	We will:
	I will:
Lesson Frame: Freezing Water	We will:
	I will:
Lesson Frame: Changing Phase	We will:
	I will:
Essential Questions: •What happens at the particle level when a substance melts? •What is the relationship between melting and freezing? •How can you freeze water in the classroom? •What are all the ways that a substance can change state?	**Outcomes:** Students experience three common phases (states) of matter—solid, liquid, and gas— and investigate the conditions that induce substances to change from one phase to another. Students engage in an engineering challenge to design a classroom “freezer” that will freeze water.
Performance Tasks: •Carry out investigations to transfer heat to and from substances to observe phase change •Develop a model of state in terms of the relationship of particles to one another in a substance •Communicate information about phase change in terms of kinetic energy and energy transfer •Undertake a design project to construct, test, and modify a device that absorbs thermal energy by chemical processes.	**Learning Targets:** Students will learn that: •matter exists on Earth in three common states -- solid, liquid, and gas. •change of state is the result of change of energy and motion of the particles in a sample of matter. •during phase change, particles do not change; relationships between particles do change. •the temperatures at which phase changes occur are different for different substances. •the processes of phase change are evaporation, condensation, melting, freezing, sublimation, and deposition.
Topic 9: **Reaction**	**Length:** 9 sessions
Standard(s): MS-PS1-1, MS-PS1-2, MS-PS1-5	**Academic Vocabulary:** atom, bond, burning, compound, conservation of matter, crystal, ionic compound, molecule, precipitate, product, reactant

Lesson Frame: Substance Models	We will:
	I will:
Lesson Frame: Lime Water Reaction	We will:
	I will:
Lesson Frame: Baking Soda and Acid	We will:
	I will:
Essential Questions: •How do atoms combine to make new substances? •What happens at the particle level during a chemical reaction? •What is the chemical reaction between hydrochloric acid and sodium bicarbonate?	**Outcomes:** Students blow bubbles into limewater, observe the precipitate, and move atom tiles (representations) to simulate the rearrangement of atoms to form new substances (particles). Students study another reaction involving hydrochloric acid and baking soda and learn to use models to balance chemical equations.
Performance Tasks: •Use chemical formulas and atom tiles to show that the total number of atoms does not change in a chemical reaction and thus that mass is conserved •Use limewater to collect evidence that carbon dioxide is produced when hydrochloric acid and sodium bicarbonate react •Develop an explanation of a chemical reaction as a process in which atoms rearrange to form new substances	**Learning Targets:** Students will learn that: •all substances are made from some 90 different types of atoms (elements), which combine in various ways. •a compound is a substance composed of two or more different kinds of atoms. •atoms combine to make particles of substances: molecules and ionic compounds held together by attractive forces called bonds. •a chemical reaction is a process in which the atoms of substances rearrange to form new substances. •atoms are neither created nor destroyed during chemical reactions, only rearranged.
Topic 10: **Limiting Factors**	**Length:** 4 sessions
Standard(s): MS-PS1-1, MS-PS1-2, MS-PS1-5	**Academic Vocabulary:** concentration, limiting factor
Lesson Frame: Citric Acid and Baking Soda	We will:
	I will:
Lesson Frame: Identify Key Ideas	We will:
	I will:
	We will:
	I will:
Essential Questions: •What is a limiting factor in a chemical reaction? •What have I learned about chemical interactions?	**Outcomes:** Students conduct more chemical reactions, learning about limiting factors and reactants in excess.

Performance Tasks:	**Learning Targets:**
•Collect data by measuring the volume of gas produced in a reaction to develop explanations about the concentrations of reactants •Use a model of the concept of limiting factor in chemical reactions •Reflect on and communicate key points from the entire Chemical Interactions Unit	Students will learn that: •the quantities of reactants available at the start of a reaction determine the quantities of products. •the limiting factor is the reactant present in the lowest amount. •reactants that remain in their original form after a reaction has run to completion were present in excess. •atoms are neither created nor destroyed during chemical reactions, only rearranged; matter is conserved.

Unit Name: **Human Systems Interactions**	**Length:** approximately 28 days
Standards: MS-LS1-1, MS-LS1-3, MS-LS1-7, MS-LS1-8	**Outcomes:** Students solve a disease mystery. On the path to diagnosis, students discover the structural levels in human bodies: that cells form tissues, tissues form organs, organs form organ systems, and systems form a complex multicellular organism, the human. They look for evidence of how the organ systems interact, each dependent on all the others for its needs. Students fatigue their muscles and think about how their cells obtain the food and oxygen they need from the digestive, respiratory, and circulatory systems. They learn how aerobic cellular respiration works in cells. They find out that the cells eliminate wastes produced during aerobic cellular respiration via circulatory, respiratory, and excretory systems. Students explore the different senses to understand how humans acquire information from the environment. They engage in a “neuron relay” to model how sensory information travels to the brain for processing and how information returns to the body for action. Students turn their attention to their own learning and memory formation.
Essential Questions: What is a human body made of? How do human organ systems interact? How do cells in the human body get the resources they need? How does the energy in food become energy that cells can use? How does the sense of touch work in humans? How do messages travel to and from the brain? How are the senses alike and how are they different? How do humans learn and form memories?	**Learning Targets:** Students will learn that: •multicellular organisms are complex systems composed of organ systems, which are made of organs, which are made of tissues, which are made of cells. •cells are made of cell structures, which are made of molecules, which are made of atoms. •the human body is a system of interacting subsystems (circulatory, digestive, endocrine, excretory, muscular, nervous, respiratory, skeletal, and others). •the human body is a system of interacting subsystems. •the respiratory system supplies oxygen and the digestive system supplies energy (food) to the cells in the body. •the circulatory system transports food and oxygen to the cells in the body and carries waste products to the excretory / respiratory systems for disposal. •aerobic cellular respiration is the process by which energy stored in food molecules is converted into energy for cells. •sensory receptors respond to an array of mechanical, chemical, and electromagnetic stimuli. •sensory information is transmitted electrically to the brain along neural pathways for processing and response. •neural pathways change and grow as information is acquired and stored as memories.
Topic 1: **Systems Connections**	**Length:** 6 sessions
Standard(s): MS-LS1-1, MS-LS1-3	**Academic Vocabulary:** Atom, cell, cell structure, circulatory system, diabetes, diagnosis, digestive system, endocrine system, hormone, molecule, muscular system, nervous system, organ, organ system, respiratory system, skeletal system, symptom, tissue
Lesson Frame: Human Body Structural Levels	We will:
	I will:
Lesson Frame: Systems Research	We will:

	I will:
Essential Questions: • What is a human body made of? •How do human organ systems interact?	**Outcomes:** Students solve a disease mystery. On the path to diagnosis, students discover the structural levels in human bodies: that cells form tissues, tissues form organs, organs form organ systems, and systems form a complex multicellular organism, the human. They look for evidence of how the organ systems interact, each dependent on all the others for its needs.
Performance Tasks: •Obtain, evaluate, and communicate information regarding a single human organ system •Diagnose a disease affecting a patient by evaluating research information and evidence •Engage in argument from evidence to defend conclusions	**Learning Targets:** Students will learn that: •multicellular organisms are complex systems composed of organ systems, which are made of organs, which are made of tissues, which are made of cells. •cells are made of cell structures, which are made of molecules, which are made of atoms. •the human body is a system of interacting subsystems (circulatory, digestive, endocrine, excretory, muscular, nervous, respiratory, skeletal, and others).
Topic 2: **Supporting Cells**	**Length:** 7 sessions
Standard(s): MS-LS1-3, MS-LS1-7	**Academic Vocabulary:** aerobic cellular respiration, alveolus, calorie, capillary, glucose
Lesson Frame: Food and Oxygen	We will:
	I will:
Lesson Frame: Aerobic Cellular Respiration	We will:
	I will:
Essential Questions: •How do cells in the human body get the resources they need? •How does the energy in food become energy that cells can use?	**Outcomes:** Students fatigue their muscles and think about how their cells obtain the food and oxygen they need from the digestive, respiratory, and circulatory systems. They learn how aerobic cellular respiration works in cells. They find out that the cells eliminate wastes produced during aerobic cellular respiration via circulatory, respiratory, and excretory systems.
Performance Tasks: •Develop models to describe how food molecules are rearranged by chemical reactions forming new molecules to provide usable energy for cells •Construct explanations about organ system interactions at different scales	**Learning Targets:** Students will learn that: •the human body is a system of interacting subsystems. •the respiratory system supplies oxygen and the digestive system supplies energy (food) to the cells in the body. •the circulatory system transports food and oxygen to the cells in the body and carries waste products to the excretory/respiratory systems for disposal. •aerobic cellular respiration is the process by which energy stored in food molecules is converted into energy for cells.
Topic 3: **The Nervous System**	**Length:** 15 sessions

Standard(s): MS-LS1-3, MS-LS1-8	**Academic Vocabulary:** cerebral cortex, chemoreceptor, learning, mechanoreceptor, memory, metacognition, nerve, neuron, neurotransmitter, photoreceptor, reaction time, receptive field, response, sensory receptor, smell, stimulus, synapse, touch, vision
Lesson Frame: The Sense of Touch	We will:
	I will:
Lesson Frame: Sending a Message	We will:
	I will:
Lesson Frame: Other Senses	We will:
	I will:
Lesson Frame: Learning and Memory	We will:
	I will:
Essential Questions: •How does the sense of touch work in humans? •How do messages travel to and from the brain? •How are the senses alike and how are they different? •How do humans learn and form memories?	**Outcomes:** Students explore the different senses to understand how humans acquire information from the environment. They engage in a “neuron relay” to model how sensory information travels to the brain for processing and how information returns to the body for action. Students turn their attention to their own learning and memory formation.
Performance Tasks: •Develop a model for the action of a neural pathway •Gather and interpret data on sensory stimuli and responses •Neural pathways change and grow as information is acquired and stored as memories	**Learning Targets:** Students will learn that: •sensory receptors respond to an array of mechanical, chemical, and electromagnetic stimuli. •sensory information is transmitted electrically to the brain along neural pathways for processing and response. •neural pathways change and grow as information is acquired and stored as memories.

Unit Name: **Heredity and Adaptation**	**Length:** approximately 31 days
Standards: MS-LS3-1, MS-LS3-2, MS-LS4-1, MS-LS4-2, MS-LS4-3, MS-LS4-4, MS-LS4-5, MS-LS4-6, MS-ESS1-4	**Outcomes:** Students are introduced to the big question that drives the course: How can we explain the diversity of life that exists on Earth? They take a tour of the fossil record, looking for evidence of the existence, diversity, and transitions in life-forms throughout Earth's history. Students start this investigation with an exploration of evolutionary relationships. They examine a family tree and build a cladogram. Students build a model for how traits are inherited, starting with themselves and moving to a population of imaginary animals, larkeys. They learn about the basis of heredity, chromosomes and genes, and how genetic variation arises in populations. Students use Punnett squares to predict the probability of trait inheritance when the genotypes of the parents are known. Students consider how mutations lead to variation in a population. They see how positive mutations lead to adaptations and how natural selection works, leading to changes in populations over time. They consider the evidence for the theory of evolution. Finally, they research genetic technologies that humans use to influence inheritance and disease.
Essential Questions: What does the fossil record tell us about the history of life on Earth? What does the fossil record tell us about how life has changed over time? How can a model help us understand the relationships among organisms? What leads to variation in population? How can we model how genetic information passes from generation to generation? How can we predict the distribution of traits in a future generation? How do genetic mutation lead to variation in a population? How do populations change over time? How are humans influencing inheritance?	**Learning Targets:** Students will learn that: •the chronological fossil record documents the existence, diversity, extinction, and change of life-forms throughout Earth's history. •the fossil record is incomplete because of the nature of fossilization. •structural similarities between ancient and modern organisms is one kind of evidence from which we can infer relatedness. •a cladogram is a model that demonstrates evolutionary relationships among organisms. •embryo development can be used to identify relationships not evident in adults of different species. •heredity explains why organisms are similar but not identical to their parents. •genes on DNA code for proteins that are responsible for an organism's traits. •variation of traits in a population is established in part as a result of sexual reproduction. •a punnett square is a model used to predict the probability of inheriting genotypes in individuals of a population. •variation in a population can occur due to random genetic mutations, which can have harmful, helpful, or no effects. •an adaptation is an inherited trait that increases an organism's chances of surviving in an environment long enough to pass on its genes. •natural selection is a process by which individuals in a population best adapted to their environment tend to survive and pass their traits to subsequent generations. •change in populations by means of natural selection is the basis for the theory of evolution, which best explains the biodiversity on Earth. •Humans use genetic technologies to influence inheritance.
Topic 1: **The History of Life**	**Length:** 9 sessions

Standard(s): MS-LS4-1, MS-LS4-2, MS-ESS1-4	**Academic Vocabulary:** biodiversity, extinct, fossil, fossil record, organism, paleontologist, paleontology, principle of superposition, sedimentary rock, sediments, tetrapod, transition
Lesson Frame: The Fossil Record	We will:
	I will:
Lesson Frame: Transitions	We will:
	I will:
	We will:
	I will:
Essential Questions: •What does the fossil record tell us about the history of life on Earth? •What does the fossil record tell us about how life has changed over time?	**Outcomes:** Students are introduced to the big question that drives the course: How can we explain the diversity of life that exists on Earth? They take a tour of the fossil record, looking for evidence of the existence, diversity, and transitions in life-forms throughout Earth's history.
Performance Tasks: •Analyze data and use models to predict the characteristics of organisms missing from the fossil record •Integrate information from a variety of media to develop evidence to explain a phenomenon	**Learning Targets:** Students will learn that: •the chronological fossil record documents the existence, diversity, extinction, and change of life-forms throughout Earth's history. •The fossil record is incomplete because of the nature of fossilization. •Structural similarities between ancient and modern organisms is one kind of evidence from which we can infer relatedness.
Topic 2: **Heredity**	**Length:** 11 sessions
Standard(s): MS-LS3-1, MS-L3-2, MS-LS4-2, MS-LS4-3	**Academic Vocabulary:** allele, characteristic, chromosome, cladogram, common ancestor, descendant, DNA, Dominant, feature, filial, gene, generation, genome, genotype, heredity, heterozygous, homozygous, inheritance, inherited characteristic, limitations, most recent common ancestor, phenotype, population, protein, punnett square, recessive, related, species, trait, variation
Lesson Frame: Lines of Descent	We will:
	I will:
Lesson Frame: Inheriting Traits	We will:
	I will:
Lesson Frame: Modeling Heredity	We will:
	I will:
Lesson Frame: Punnett Squares	We will:
	I will:

Essential Questions: •How can a model help us understand the relationships among organisms? •What leads to variation in population? •How can we model how genetic information passes from generation to generation? •How can we predict the distribution of traits in a future generation?	**Outcomes:** Students start this investigation with an exploration of evolutionary relationships. They examine a family tree and build a cladogram. Students build a model for how traits are inherited, starting with themselves and moving to a population of imaginary animals, larkeys. They learn about the basis of heredity, chromosomes and genes, and how genetic variation arises in populations. Students use Punnett squares to predict the probability of trait inheritance when the genotypes of the parents are known.
Performance Tasks: •Analyze and interpret data to construct explanations, using mathematical models involving probability	**Learning Targets:** Students will learn that: •a cladogram is a model that demonstrates evolutionary relationships among organisms. •embryo development can be used to identify relationships not evident in adults of different species. •heredity explains why organisms are similar but not identical to their parents. •genes on DNA code for proteins that are responsible for an organism's traits. •variation of traits in a population is established in part as a result of sexual reproduction. •a punnett square is a model used to predict the probability of inheriting genotypes in individuals of a population.
Topic 3: **Evolution**	**Length:** 11 sessions
Standard(s): MS-LS3-1, MS-LS4-4, MS-LS4-5, MS-LS4-6	**Academic Vocabulary:** adaptation, artificial selection, gene therapy, genetically modified organism, mutation, natural selection, speciation, theory, theory of evolution, transgenic organism
Lesson Frame: Adaptation	We will:
	I will:
Lesson Frame: Natural Selection	We will:
	I will:
Lesson Frame: Genetic Technology	We will:
	I will:
Essential Questions: •How do genetic mutation lead to variation in a population? •How do populations change over time? •How are humans influencing inheritance?	**Outcomes:** Students consider how mutations lead to variation in a population. They see how positive mutations lead to adaptations and how natural selection works, leading to changes in populations over time. They consider the evidence for the theory of evolution. Finally, they research genetic technologies that humans use to influence inheritance and disease.

Performance Tasks:	**Learning Targets:**
•Analyze and interpret data to construct explanations using mathematical models involving probability	Students will learn that: •variation in a population can occur due to random genetic mutations, which can have harmful, helpful, or no effects. •an adaptation is an inherited trait that increases an organism's chances of surviving in an environment long enough to pass on its genes. •natural selection is a process by which individuals in a population best adapted to their environment tend to survive and pass their traits to subsequent generations. •change in populations by means of natural selection is the basis for the theory of evolution, which best explains the biodiversity on Earth. •Humans use genetic technologies to influence inheritance.

Unit Name: **Planetary Science**	**Length:** approximately 53 sessions
Standards: MS-ESS1-1, MS-ESS1-2, MS-ESS1-3, MS-ESS1-4, MS-ESS2-2, MS-ESS2-4, MS-ESS3-1, MS-ESS3-2, MS-ESS3-3, MS-ESS3-4, MS-PS2-4, MS-PS4-2, MS-ETS1-1	**Outcomes:** Students develop a sense of planet Earth as a tiny base from which to launch an inquiry into the vast reaches of the solar system and beyond. They observe the Moon and start a log of its changes. Students become familiar with the celestial relationship of the Sun and Earth. They think not only about what they know (Earth is round) but how they know it. They simulate the basic geometry of Earth and the Sun to explain day, night, and year. Students apply what they know about Earth's tilt and the revolution of Earth around the Sun to explain daylight length and seasons. Students learn the factors resulting in seasons, including latitude, tilt of Earth's axis, revolution, and rotation. Students study the surface features of the Moon and the size and distance of our closest celestial neighbor. They read myths to experience how other cultures explain the features and behavior of the Moon. Students analyze Moon log data to identify the pattern of Moon phases, then develop a physical model that can explain Moon phases. They explain how the motions of Earth and the Moon in relation to the Sun result in the phases of the Moon we observe on Earth. Students conduct simple experiments to determine if the craters on the Moon's surface could be caused by impact events of various magnitudes. They use Moon data to determine the number and frequency of major impacts. Students learn the major classifications in which cosmic objects are distributed: solar system, galaxy, universe. They sequence the events that led to the formation of the solar system. Students explore four theories of Moon origin. Students explore the scale of the solar system by making physical and graphical models. They explore the relationship of atmosphere, planet temperature, and liquid water. They search images of planets and satellites for evidence of water. Students are introduced to a tool used to study distant objects in planetary systems, the spectroscope. They use a simple spectroscope to become aware of the spectral signature of elements. Students use telescope images of the moons of Jupiter to determine their orbital patterns and distances from the planet. They study techniques used to search for planets and planetary systems around other stars in the Milky Way galaxy.

Essential Questions:	**Learning Targets:**
Where are you when you are in science class? Why is Earth described as a system? How does the Moon change day by day? What causes day and night? Why is it hotter in the summer? Why are there more hours of sunlight in the summer? What is visible on the Moon? What does an Earth/Moon scale model? What Moon-phase patterns can be observed? What causes Moon phases? How do models help us understand phases of the Moon? Are Moon craters the result of volcanoes or impacts? Will Earth experience a major impact in the future? What is in the solar system? Where did the solar system come from? Where are the planets in the solar system? Which planet is most like Earth? Where is the water in the solar system? What impact do humans have on Earth's systems? Why is light important in astronomy? What are the big questions that guide space exploration? What can be learned by studying the moons of Jupiter? How are exoplanets found? Where are you when you are in science class?	Students will learn that: •location or position can be described in terms of a frame of reference (relationship to other objects). •point of view is a position from which a visual observation is made. •Earth is a system composed of subsystems. •the moon can be observed both day and night. •line of sight is the straight, unimpeded path taken by light from an object to an eye. •objects appear to sink when they move across the ocean and slip below the horizon on a curved surface. •at all times, half of Earth is illuminated and half is dark. •daytime and nighttime are the result of Earth's rotation on its axis. •Earth's axis tilts at an angle of 23.5 degrees and points toward the North Star. •the Moon has surface features that can be identified in telescope images; craters, maria, and mountains. •the Moon, Earth's satellite, is about one-fourth Earth's diameter and orbits at a distance of about 384,000 km. •scale is the size relationship between a representation of an object and the object. •scale can be expressed as a ratio when an object and its representation are measure in related units. •the moon goes through phases: "new" to "full" and back to "new" in a 4-week cycle. •the moon shines as a results of reflected light from the Sun. Half of the Moon is always illuminated (except during a lunar eclipse). •moon phase depends on how much of the Moon's illuminated surface is visible from Earth, which is determined by the relative positions of Earth and the Moon in their orbits around the Sun. •the Moon revolves around Earth once in 4 weeks, resulting in the Moon's rising about 50 minutes later each day. •the revolution of the Moon around Earth and the rotation of Earth on its axis account for the phases of the Moon and the time of day (or night) when the Moon is visible. •craters of various sizes and types result when meteoroids of various sizes impact the surface of planets and satellites. •craters can be categorized by size and physical characteristics: simple, complex, terraced, ringed (or basin), and flooded. •Earth and the Moon have been, and continue to be, subjected to the same rate of bombardment by meteoroids. •Earth's record of impacts has been erased by the actions of wind, water, and tectonic activity. •the solar system includes the Sun; eight planets and their satellites; and a host of smaller objects, including dwarf planets, asteroids, comets, Kuiper Belt objects, and Oort Cloud matter. •the solar system formed during a sequence of events that started with a nebula of dust and gas. •the Moon formed after a massive collision between the forming Earth and a planetesimal about the size of Mars. •the distance between solar system objects is enormous. •liquid water is essential for life as we know it. •the temperature on a planet depends on two major variables; distance from the Sun and the nature of the planet's atmosphere. •images can convey information about the presence and history of liquid water on planetary surfaces. •humans modify Earth's systems, creating observable effects. •a spectroscope analyzes the wavelengths of light (spectrum) coming from a light source. •scientists use spectral data from distant moons, planets, and stars to determine their temperature, composition, motion, and more. •scientific missions provide data about the composition and environmental conditions on the planets, moons, and other bodies in the solar system. •planetary-system objects move in measurable and predictable patterns. •a transit occurs when a planet passes between a star and an observer, causing a dip in the intensity of light from the star. •the magnitude and duration of the dip in light intensity during a transit reveals information about the planet. •location can be described in relation to a frame of reference.

Topic 1: **Earth as a System**	**Length: 4** sessions
Standard(s): MS-ESS1-1, MS-ESS3-4	**Academic Vocabulary:** altitude, atmosphere, biosphere, Bird's-eye view, elevation, frame of reference, Geosphere, Hydrosphere, location, point of view, Subsystem, System
Lesson Frame: School to Space	We will:
	I will:
Lesson Frame: Earth's Systems	We will:
	I will:
Lesson Frame: Moon Watch	We will:
	I will:
Essential Questions: •Where are you when you are in science class? •Why is Earth described as a system? •How does the Moon change day by day?	**Outcomes:** Earth as a System introduces students to the anchor phenomenon of Earth as an object in space. Students study images of Earth at different scales, then explore Earth's interacting subsystems. They develop a sense of planet Earth as a base from which to launch an inquiry into the vast reaches of the solar system and beyond.
Performance Tasks: •Use images to describe a location on Earth from ever-changing points of view •Explain interactions between Earth's systems •Observe the Moon and maintain a Moon log to record	**Learning Targets:** Students will learn that: •location or position can be described in terms of a frame of reference (relationship to other objects). •point of view is a position from which a visual observation is made. •Earth is a system composed of subsystems. •the moon can be observed both day and night.
Topic 2: **Earth/Sun Relationship**	**Length:** 8 sessions
Standard(s): MS-ESS1-1	**Academic Vocabulary:** axis, equator, equinox, latitude, longitude, north star, orbit, revolution, rotation, season, solar angle, solstice
Lesson Frame: Day and Night	We will:
	I will:
Lesson Frame: Summer Heat	We will:
	I will:
Lesson Frame: Day Length	We will:
	I will:
Essential Questions: •What causes day and night? •Why is it hotter in the summer? •Why are there more hours of sunlight in the summer?	**Outcomes:** In Earth/Sun Relationship, students explore the investigative phenomena of days and seasons on Earth. They develop a model incorporating the basic geometry of Earth and the Sun to explain day, night, and year.
Performance Tasks: •Use models and simulations to observe ships on round and flat Earth •Determine the direction of Earth's rotation •Use light sources and spheres to model day and night	**Learning Targets:** Students will learn that: •line of sight is the straight, unimpeded path taken by light from an object to an eye. •objects appear to sink when they move across the ocean and slip below the horizon on a curved surface. •at all times, half of Earth is illuminated and half is dark. •daytime and nighttime are the result of Earth's rotation on its axis. •Earth's axis tilts at an angle of 23.5 degrees and points toward the North Star

Topic 3: **Moon Study**	**Length:** 4 sessions
Standard(s): MS-ESS1-1, MS-ESS1-3	**Academic Vocabulary:** crater, highlands, mare, ray, rille, scaling factor
Lesson Frame: A Close Look at the Moon	We will:
	I will:
Lesson Frame: How Big/ How Far?	We will:
	I will:
Essential Questions: •What is visible on the Moon? •What does a scaled Earth/Moon scale model look like?	**Outcomes:** Moon Study introduces students to the phenomenon of surface feature of the Moon. Students explore the scale of the Earth/Moon relationship. Students also read myths to experience how other cultures explain the features and behaviors exhibited by the moon.
Performance Tasks: •Observe images of the Moon to identify and classify some major surface features •Generate a list of questions about the Moon that will guide further study •Construct a scale model of the Earth/Moon system.	**Learning Targets:** Students will learn that: •the Moon has surface features that can be identified in telescope images; craters, maria, and mountains. •the Moon, Earth's satellite, is about one-fourth Earth's diameter and orbits at a distance of about 384,000 km. •scale is the size relationship between a representation of an object and the object. •scale can be expressed as a ratio when an object and its representation are measure in related units.
Topic 4: **Phases of the Moon**	**Length:** 5 sessions
Standard(s): MS-ESS1-1, MS-ESS1-3	**Academic Vocabulary:** crescent, first quarter, full moon, gibbous, lunar eclipse, new moon, phase, solar eclipse, third quarter, waning, waxing
Lesson Frame: Observed Patterns	We will:
	I will:
Lesson Frame: Moon-Phase Models	We will:
	I will:
Lesson Frame: Moon-Phase Simulation	We will:
	I will:
Essential Questions: •What Moon-phase patterns can be observed? •What causes Moon phases?	**Outcomes:** Phases of the Moon helps students explore the phenomenon of Moon phases by gaining a better understanding of the motions of Earth and the Moon in relation to the Sun, which result in these phases.
Performance Tasks: •Observe, record, and analyze the Moon's appearance and position in relation to the Sun over a 4-week period •Use models of the Sun, Moon, and Earth to explain the mechanics of Moon phases and eclipses	**Learning Targets:** Students will learn that: •the moon goes through phases: "new" to "full" and back to "new" in a 4-week cycle. •the moon shines as a results of reflected light from the Sun. Half of the Moon is always illuminated (except during a lunar eclipse). •moon phase depends on how much of the Moon's illuminated surface is visible from Earth, which is determined by the relative positions of Earth and the Moon in their orbits around the Sun. •the Moon revolves around Earth once in 4 weeks, resulting in the Moon's rising about 50 minutes later each day. •the revolution of the Moon around Earth and the rotation of Earth on its axis account for the phases of the Moon and the time of day (or night) when the Moon is visible.

Topic 5: **Craters**	**Length:** 6 sessions
Standard(s): MS-ESS1-4, MS-ESS2-2, MS-ESS3-2, MS-ETS1-1	**Academic Vocabulary:** asteroid, comet, complex crater, ejecta, flooded crater, impact, meteoroid, regolith, simple crater
Lesson Frame: Moon Craters	We will:
	I will:
Lesson Frame: Target Earth	We will:
	I will:
Essential Questions: •Are Moon craters the results of volcanoes or impacts? •Will Earth experience a major impact in the future?	**Outcomes:** In Craters, students conduct experiments to determine if the craters on the Moon could be caused by impact events of various magnitudes. Students consider the possibility that Earth was also subjected to intense bombardment during its history and speculate on the destruction that would result from impacts on Earth comparable to those that have occurred on the Moon.
Performance Tasks: •Conduct experiments to determine the effect of meteoroid size and speed on crater characteristics •Use mathematical reasoning to determine the frequency of major impacts on Earth	**Learning Targets:** Students will learn that: •craters of various sizes and types result when meteoroids of various sizes impact the surface of planets and satellites. •craters can be categorized by size and physical characteristics: simple, complex, terraced, ringed (or basin), and flooded. •Earth and the Moon have been, and continue to be, subjected to the same rate of bombardment by meteoroids. •Earth's record of impacts has been erased by the actions of wind, water, and tectonic activity.
Topic 6: **Beyond the Moon**	**Length:** 6 sessions
Standard(s): MS-PS2-4, MS-ESS1-2	**Academic Vocabulary:** accretion, astronomical unit (AU), galaxy, gravity, light-year (ly), nebula, orbit radius, solar system, universe
Lesson Frame: What's Out There?	We will:
	I will:
Lesson Frame: Origins	We will:
	I will:
Essential Questions: •What is in the solar system? •Where did the solar system come from?	**Outcomes:** In Beyond the Moon, students explore the phenomenon of objects in outer space. They learn the major classifications into which cosmos objects are organized: solar system, galaxy, and universe, and create a sequence of events that resulted in the formation of the solar system. Finally, students weigh the evidence supporting four theories of the origin of the Moon.
Performance Tasks: •Carry out an investigation to organize objects in the cosmos into three nested systems: solar system, galaxy, universe •Analyze and interpret data to sequence the events and processes that resulted in the formation of the solar system •Present an argument citing evidence for the Moon's forming as a result of a big impact (or other theory).	**Learning Targets:** Students will learn that: •the solar system includes the Sun; eight planets and their satellites; and a host of smaller objects, including dwarf planets, asteroids, comets, Kuiper Belt objects, and Oort Cloud matter. •the solar system formed during a sequence of events that started with a nebula of dust and gas. •the Moon formed after a massive collision between the forming Earth and a planetesimal about the size of Mars.
Topic 7: **The Solar System**	**Length: 9** sessions
Standard(s): MS-ESS1-2, MS-ESS1-3, MS-ESS2-2, MS-ESS2-4, MS-ESS3-1, MS-ESS3-3, MS-ESS3-4	**Academic Vocabulary:** anthropocene, atmosphere, exoplanet

Lesson Frame: Where are the Planets?	We will:
	I will:
Lesson Frame: Comparing Temperatures and Atmospheres	We will:
	I will:
Lesson Frame: Where is the Water?	We will:
	I will:
Lesson Frame: Changing Systems	We will:
	I will:
Essential Questions: •Where are the planets in the solar system? •Which planet is most like Earth? •Where is there water in the solar system? •What impact do humans have on Earth's systems?	**Outcomes:** In The Solar System, students continue to explore the scale of the solar system by making physical and graphical models. Students explore the compositional and physical differences among the planets, the Moon, and other solar system objects. By focusing on the recent history of solar system exploration, students discover that only Earth possesses the fortuitous combination of factors that support life.
Performance Tasks: •Design and construct scale models of the solar system •Compare the temperatures and atmospheres of the planets •Analyze photographic images to search for evidence of the presence of water on planets and satellites	**Learning Targets:** Students will learn that: •the distance between solar system objects is enormous. •liquid water is essential for life as we know it. •the temperature on a planet depends on two major variables; distance from the Sun and the nature of the planet's atmosphere. •images can convey information about the presence and history of liquid water on planetary surfaces. •humans modify Earth's systems, creating observable effects.
Topic 8: **Space Exploration**	**Length: 4** sessions
Standard(s): MS-PS4-2, MS-ETS1-1	**Academic Vocabulary:** absorption line, emission line, light signature, spectroscope, spectrum, visible light
Lesson Frame: Light Spectra	We will:
	I will:
Lesson Frame: Exploration of the Solar System	We will:
	I will:
Essential Questions: •Why is light important in astronomy? •What are the big questions that guide space exploration?	**Outcomes:** In Space Exploration, students are introduced to one of the most important tools astronomers use to study distant objects in planetary systems, the spectroscope. Students use a simple spectroscope to explore the spectral signature of elements of the Sun and other light sources.
Performance Tasks: •Use a spectroscope a to analyze light coming from several light sources •Investigate the big questions scientists are asking in the exploration of the solar system and beyond	**Learning Targets:** Students will learn that: •a spectroscope analyzes the wavelengths of light (spectrum) coming from a light source. •scientists use spectral data from distant moons, planets, and stars to determine their temperature, composition, motion, and more. •scientific missions provide data about the composition and environmental conditions on the planets, moons, and other bodies in the solar system.

Topic 9: **Orbits and New Worlds**	**Length:** 7 sessions
Standard(s): MS-ESS1-1, MS-ESS1-2, MS-ESS1-3, MS-PS2-4	**Academic Vocabulary:** orbit radius, orbital period, transit, orrery
Lesson Frame: The Moons of Jupiter	We will:
	I will:
Lesson Frame: Looking for Planets	We will:
	I will:
Lesson Frame: What is Our Cosmic Address?	We will:
	I will:
Essential Questions: •What can be learned by studying the moons of Jupiter? •How are exoplanets found? •Where are you when you are in science class?	**Outcomes:** Orbits and New Worlds begins by having students use images of the moons of Jupiter to determine their orbital patterns and distances from the planet. They investigate the techniques that scientists use to search for planetary systems around other stars in our galaxy. Students redefine their place in the universe.
Performance Tasks: •Use data and images to determine the orbital period and orbit radii of the four Galilean moons of Jupiter. •Use an orrery and light sensor to model how to locate planetary systems in our galaxy.	**Learning Targets:** Students will learn that: •planetary-system objects move in measurable and predictable patterns. •a transit occurs when a planet passes between a star and an observer, causing a dip in the intensity of light from the star. •the magnitude and duration of the dip in light intensity during a transit reveals information about the planet. •location can be described in relation to a frame of reference.

Course Name:	7/8 Science Course B		
Credits:	n/a		
Prerequisites:	n/a		
Description:	Course covering aspects within Physical, Earth and Life Sciences.		
Academic Standards:	Next-Generation Science Standards		
Units:	**Unit Length:**	**Unit Standards:**	**Unit Outcomes:**
Population and Ecosystems	approximately 59	MS-LS1-6, MS-LS1-7, MS-LS2-1, MS-LS2-2, MS-LS2-3, MS-LS2-4, MS-LS2-5, MS-ESS3-3, MS-ESS3-4, MS-ETS1-1, MS-ETS1-2	In an 8-week investigation, students raise milkweed bugs in a supportive habitat to study the insect's reproductive biology. The information from this study is used to study milkweed-bug population dynamics. Students use ecosystem sorting cards to reflect on organizing concepts in ecology and develop the vocabulary associated with those concepts. Through a Jane Goodall video, students become familiar with a specific population study of chimpanzees. Students are introduced to one of ten ecoscenarios representing major biomes of Earth that will be studied throughout the course. Students use Mono Lake, an important alkaline lake, as a simple ecosystem case study. Students study the functional roles of populations to construct a food web. Students construct aquatic and terrestrial ecosystems in the classroom and observe them over time to understand ecosystem interactions. They use a scientific log to observe, describe, and monitor changes in biotic and abiotic factors. Students explore the effect of light on photosynthesis by studying wheat plants. Students learn that through photosynthesis, producers increase the biomass of an ecosystem. Students investigate the producers in specific ecosystems and identify their roles. Students model and measure the energy transferred from food. Students learn how energy provided by producers is used by all organisms. They explore how food energy moves from one trophic level to another through feeding relationships. Students simulate feeding relationships and determine what is needed to sustain a food chain. They investigate the role of decomposers in ecosystems. Students explore some of the variables in an ecosystem that limit population size. Based on their milkweed-bug study, they predict what the population would be in 12 months. Students use simulations to explore population interactions and outcomes. Students explore the importance of biodiversity on the health of the ecosystem. They investigate how humans have interacted with the ecosystem and put stresses on biodiversity. Students then learn how humans can reverse these stresses and help restore ecosystems. Students return to their ecoscenarios and use the knowledge developed in previous investigations to analyze the effects of human interactions in their ecosystem. They are given several engineering solutions and evaluate which they feel is the best solution to preserve or restore the ecosystem.

Waves	approximately 35	MS-PS4-1, MS-PS4-2, MS-PS4-3, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4	Students measure their pulse under different circumstances to think about frequency. They create waves using metal springs and use these simple waves to explore the fundamental properties of waves: wavelength, frequency, and amplitude. Students learn about wave energy and compare energy in waves with different properties. Students look at an engineering failure and consider the work engineers must do to achieve a successful design. They use these ideas to develop a chamber that can effectively block sound waves. Students explore properties of light waves. They start by using mirrors to explore reflection. Students use spectroscopes to analyze spectra of visible light and learn more about the electromagnetic spectrum. They use filters to change the spectrum of a light source and to learn about color. They determine how refraction changes the path of light rays as they travel between media. Students learn how information can be encoded and sent as digital waves to transfer large amounts of information efficiently over large distances. They test properties of fiber optic cables to develop an understanding of how total internal reflection allows data transfer by light. Students learn how data is encoded and sent as modulated waves to a recipient for demodulation. Students create digital waves and develop an understanding of how digital waves enable modern communications.
Gravity and Kinetic Energy	approximately 38	MS-PS2-1, MS-PS2-2, MS-PS2-4, MS-PS2-5, MS-PS3-1, MS-PS3-2, MS-PS3-5, MS-ESS1-2, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4	Students see an unprotected “bean brain” fall to the floor and start to think about speed, acceleration, energy transfer, and collisions. They walk along two interval tracks to collect data about speed. After graphing their results, they conclude that the slope of a graph of distance versus time is related to the speed. They then walk along a different interval track and discover that the speed required is not constant. They graph their results to learn about acceleration. Finally, students observe a ball dropping and complete a detailed analysis of its motion. They determine that the ball is not falling at a constant speed, but accelerating. They calculate the rate and compare it to the acceleration of gravity, to develop a working definition of gravity. Students use spring scales to learn about the difference between mass and weight. They compare mass and weight on different planets, then refine their definition of gravity. Students learn about Newton’s second law of motion, which describes the relationship between mass, force, and acceleration. Students roll marbles down a ramp system to collide with plastic cubes. They gather data about the cubes’ motion to make inferences about kinetic and potential energy. Students do an activity in which they review data from different collision scenarios. They analyze the data in two ways to draw conclusions about the effect of mass and speed on collisions. Finally, students experiment with horizontal collisions, learn more about Newton’s laws, and consider the implications in various situations. Students view a video that introduces the physics concept of impulse. They learn that increasing the time it takes for an object to change speed in a collision results in less force being applied to the object. Using this principle, students design a protective helmet for a model head. After several iterative designs, they share results as a class and discuss the engineering design process. To finish the course, students review big ideas and create a list of remaining physics questions. Students work together to answer questions and prepare for the Posttest.

Earth History	approximately 64	MS-ESS1-4, MS-ESS2-1, MS-ESS2-2, MS-ESS2-3, MS-ESS3-1, MS-ESS3-2, MS-ESS3-3, MS-ESS3-4, MS-ESS3-5, MS-LS4-1	Earth Is Rock uses the anchor phenomenon of the Grand Canyon to introduce students to the study of the landforms and rocks that make up Earth's crust. Through observations of aerial images of Earth's surface, sedimentary rock samples, and images from the Grand Canyon, students begin developing awareness about the complexity of Earth's crust and how geologists study it by trying to answer the question "What is the story of this place?" In Weathering and Erosion students explore the phenomena of earth material movement over the surface of Earth. Students observe a stream table to discover how water can erode sediments from one location and deposit the sorted sediments in a basin downstream. They model how rocks weather and what happens to sediments. Students also consider how soil forms. In Deposition, students investigate the phenomenon of the variety of sedimentary rocks on Earth. They look closely at the processes by which bedrock that is weathered and eroded ends up deposited in basins. There, favorable conditions can turn the sediments into sedimentary rock. Students consider how evidence in sedimentary rocks can lead to inferences about the ancient environments in which they formed. In Fossils and Past Environments, students experience the phenomenon of fossils. Students become familiar with the geologic time scale to understand how old fossils are and begin to comprehend the enormous spans of time that are described by geologic time. They use fossils to put the history of the Grand Canyon into the geologic time scale. Igneous Rocks presents students with new rock samples from a new location. It leads to an investigation of the relationship between crystal size and the formation of igneous rocks. The formation of igneous rocks is the phenomenon investigated by students. Volcanoes and Earthquakes provides engaging phenomena to investigate and gives students the opportunity to discover a pattern of geologic activity. Subduction, convection, and the theory of crustal plate tectonics are introduced to explain continental drift, plate boundary interactions, and the patterns of volcanoes and earthquakes. Mountains and Metamorphic Rocks builds on the phenomena of earthquakes and volcanoes by focusing on new landforms—mountains. Students investigate the interactions at plate boundaries that form mountains and metamorphic rocks, leading students to consider the rock cycle. In Geo Scenarios, students apply prior knowledge from the Earth History Course and new, site-specific information to develop a geologic story of a place or process. Students are introduced to four sites across the United States— four phenomena. Each team of students researches the story of one of those places, the processes that shaped it, and the implications of the story for human society. What Is Earth's Story? challenges students to put together what they have learned about Earth's geologic history and to use their knowledge to finish telling the story of the phenomenal Grand Canyon.

Unit Name: **Populations and Ecosystems**	**Length:** approximately 59
Standards: MS-LS1-6, MS-LS1-7, MS-LS2-1, MS-LS2-2, MS-LS2-3, MS-LS2-4, MS-LS2-5, MS-ESS3-3, MS-ESS3-4, MS-ETS1-1, MS-ETS1-2	**Outcomes:** In an 8-week investigation, students raise milkweed bugs in a supportive habitat to study the insect's reproductive biology. The information from this study is used to study milkweed-bug population dynamics in Investigation 7. Students use ecosystem sorting cards to reflect on organizing concepts in ecology and develop the vocabulary associated with those concepts. Through a Jane Goodall video, students become familiar with a specific population study of chimpanzees. Students are introduced to one of ten ecoscenarios representing major biomes of Earth that will be studied throughout the course. Students use Mono Lake, an important alkaline lake, as a simple ecosystem case study. Students study the functional roles of populations to construct a food web. Students construct a food web for their ecoscenario. Students construct aquatic and terrestrial ecosystems in the classroom and observe them over time to understand ecosystem interactions. They use a scientific log to observe, describe, and monitor changes in biotic and abiotic factors. Students explore the effect of light on photosynthesis by studying wheat plants. Students learn that through photosynthesis, producers increase the biomass of an ecosystem. Students investigate the producers in specific ecosystems and identify their roles. Students model and measure the energy transferred from food. Students learn how energy provided by producers is used by all organisms. They explore how food energy moves from one trophic level to another through feeding relationships. Students simulate feeding relationships and determine what is needed to sustain a food chain. They investigate the role of decomposers in ecosystems. Students explore some of the variables in an ecosystem that limit population size. Based on their milkweed-bug study, they predict what the population would be in 12 months. Students use simulations to explore population interactions and outcomes. Students explore the importance of biodiversity on the health of the ecosystem. They investigate how humans have interacted with the ecosystem and put stresses on biodiversity. Students then learn how humans can reverse these stresses and help restore ecosystems. Students return to their ecoscenarios and use the knowledge developed in previous investigations to analyze the effects of human interactions in their ecosystem. They are given several engineering solutions and evaluate which they feel is the best solution to preserve or restore the ecosystem.

Essential Questions:	**Learning Targets:**
What does a population of milkweed bugs need to survive in a classroom? What needs to be considered when building a habitat for milkweed bugs? How do milkweed bugs reproduce and grow? What is the relationship between individuals, populations, communities, and abiotic factors in an ecosystem? How is the milkweed-bug-habitat study similar to and different from Jane Goodall's population study? What are the defining characteristics of your ecosystem? What are the different biotic and abiotic components of the Mono Lake ecosystem? How do the organisms at Mono Lake interact? How do the organisms in your ecoscenario interact? What abiotic factors should be considered when setting up terrestrial and aquatic habitats? What interactions are likely for the organisms in the mini habitat? What changes have taken place in the terrariums and the class aquariums? What is the effect of light on producers? What do producers need to grow and increase biomass? What are the roles of specific producers in the ecosystem? How can we model and measure energy transfer from food? What are the kinds of work you do that require energy? What is needed to sustain a food chain? How does biomass and energy flow through an ecosystem? What happens to the energy stored in the biomass of an organism when it does? How many milkweed bugs could be in your habitat at the end of a year? What are the limiting factors that affect algae and brine shrimp populations at Mono Lake? How does predicted population growth compared to actual population growth? Why is biodiversity important in an ecosystem? What can happen when a species is introduced to an ecosystem? What impact have people had on Mono Lake? How have humans affected your ecoscenario, and what efforts have humans made to lessen this impact?	Students will learn that: •an organism is any living thing. •an organism's habitat is where it lives -- the place where it can meet all of its requirements for life. •a kind of organism that is different from all other kinds of organisms is called a species. •a population is all the individuals of a species in an area at a specified time. •an individual is one single organism; a community is all the interacting populations in a specified area. •an ecosystem is a system of interacting organisms and nonliving factors in a specified area. •biotic factors are living factors in an ecosystem; abiotic factors are nonliving factors. •ecosystems have different sets of biotic and abiotic factors. •biomes are large areas on Earth with similar abiotic factors. •the Mono Lake alkaline-lake ecosystem is defined by the interactions among the organisms and abiotic factors. •the path that food takes as one organism is eaten by another is a food chain. •the feeding relationships in an ecosystem can be represented as a food web. •all ecosystems are defined by the interactions among the organisms and abiotic factors that exist in the region. •an aquatic ecosystem functions in water. •a terrestrial ecosystem functions on land. •organisms depend on the abiotic elements in their ecosystem. •photosynthesis is the process by which energy-rich molecules are made from water, carbon dioxide, and light. •photosynthesis produces potential energy and aerobic cellular respiration transfers usable energy to organisms. •producers increase the biomass of an ecosystem through photosynthesis; ecosystems are defined by their producers. •food is energy-rich organic matter that organisms need to conduct their life processes. •every activity undertaken by living organisms involves expenditure of energy. •feeding relationships identify trophic roles. •biomass moves through an ecosystem from one trophic level to the next; only a small fraction of the biomass consumed at a level is used to produce growth (biomass) at that level; most of the biomass consumed is used for energy and much is lost to the environment. •decomposers recycle food molecules to basic particles for use by organisms in the ecosystem. •reproductive potential is the theoretical unlimited growth of a population over time. •a limiting factor is any biotic or abiotic component of the ecosystem that controls the size of a population. •biodiversity is the variety of organisms in an ecosystem. •a biodiversity index is one measure of the health of an ecosystem, and its ability to recover from stress. In a sustainable ecosystem, the system is resilient to change. •introduced species compete with native species in an ecosystem. •if an introduced species has no predators in the new ecosystem, it can thrive and become invasive. •humans affect ecosystems in both positive and negative ways. •humans rely on ecosystems for ecosystem services (provisioning, regulating, cultural, and supporting services). •ecosystems are dynamic systems of complex interactions. •disruptions to abiotic factors in ecosystems can cause shifts in populations and changes to ecosystem sustainability. •changes in ecosystems can affect services essential to humans. •solutions can be engineered to mitigate human impact.

Topic 1: **Milkweed Bugs**	**Length:** 4 sessions
Standard(s): MS-LS2-1	**Academic Vocabulary:** clutch, habitat, inference, instar, molt, nymph, observation, organism, population, species
Lesson Frame: Introducing Milkweed Bugs	We will:
	I will:
Lesson Frame: Milkweed-Bug Habitat	We will:
	I will:
Lesson Frame: Observing Milkweed-Bug Habitats	I will:
	We will:
Essential Questions: •What does a population of milkweed bugs need to survive in a classroom? •What needs to be considered when building a habitat for milkweed bugs? •How do milkweed bugs reproduce and grow?	**Outcomes:** In an 8-week investigation, students raise milkweed bugs in a supportive habitat to study the insect's reproductive biology. The information from this study is used to study milkweed-bug population dynamics in Investigation 7.
Performance Tasks: •Construct a suitable habitat for milkweed bugs and study their reproductive potential •Observe events and changes that yield information about the life cycle of an insect •Document the sequence of changes that constitute the milkweed bug's life cycle	**Learning Targets:** Students will learn that: •an organism is any living thing. •an organism's habitat is where it lives -- the place where it can meet all of its requirements for life. •a kind of organism that is different from all other kinds of organisms is called a species. •a population is all the individuals of a species in an area at a specified time.
Topic 2: **Sorting Out Life**	**Length:** 7 sessions
Standard(s): MS-LS2-1, MS-LS2-2	**Academic Vocabulary:** abiotic, biome, biotic, community, controlled experiment, ecosystem, ecosystem service, individual, observational study, population, population study
Lesson Frame: Ecosystem Card Sort	We will:
	I will:
Lesson Frame: Video Population Study	We will:
	I will:
Lesson Frame: Ecoscenarios	I will:
	We will:
Essential Questions: •What is the relationship between individuals, populations, communities, and abiotic factors in an ecosystem? •How is the milkweed-bug-habitat study similar to and different from Jane Goodall's population study? •What are the defining characteristics of your ecosystem?	**Outcomes:** Students use ecosystem sorting cards to reflect on organizing concepts in ecology and develop the vocabulary associated with those concepts. Through a Jane Goodall video, students become familiar with a specific population study of chimpanzees. Students are introduced to one of ten ecoscenarios representing major biomes of Earth that will be studied throughout the course.

Performance Tasks: •Analyze and categorize cards using evidence to determine which represent individuals, populations, communities, and ecosystems •Identify biotic and abiotic factors in an ecosystem	**Learning Targets:** Students will learn that: •an individual is one single organism; a community is all the interacting populations in a specified area. •an ecosystem is a system of interacting organisms and nonliving factors in a specified area. •biotic factors are living factors in an ecosystem; abiotic factors are nonliving factors. •ecosystems have different sets of biotic and abiotic factors. •biomes are large areas on Earth with similar abiotic factors.
Topic 3: **Mono Lake**	**Length:** 7 sessions
Standard(s): MS-LS2-2, LS-LS2-3	**Academic Vocabulary:** decomposer, detritivore, detritus, first-level consumer, food chain, food web, migratory, primary consumer, producer, secondary consumer, second-level consumer, tertiary consumer, third-level consumer
Lesson Frame: A Visit to Mono Lake	We will:
	I will:
Lesson Frame: Mono Lake Food Web	We will:
	I will:
Lesson Frame: Ecoscenario Food Webs	We will:
	I will:
Essential Questions: •What are the different biotic and abiotic components of the Mono Lake ecosystem? •How do the organisms at Mono Lake interact? •How do the organisms in your ecoscenario interact?	**Outcomes:** Students use Mono Lake, an important alkaline lake, as a simple ecosystem case study. Students study the functional roles of populations to construct a food web. Students construct a food web for their ecoscenario.
Performance Tasks: •Research the functional roles of organisms in the Mono Lake ecosystem in order to construct a food web •Develop a model known as a food web to represent feeding relationships between populations •Construct explanations about the interactions of an ecosystem in terms of functional roles	**Learning Targets:** Students will Learn that: •the Mono Lake alkaline-lake ecosystem is defined by the interactions among the organisms and abiotic factors. •the path that food takes as one organism is eaten by another is a food chain. •the feeding relationships in an ecosystem can be represented as a food web. •all ecosystems are defined by the interactions among the organisms and abiotic factors that exist in the region.
Topic 4: **Mini Habitats**	**Length:** 4 sessions
Standard(s): MS-LS2-1, MS-LS2-4	**Academic Vocabulary:** aquatic, predator, prey, terrestrial
Lesson Frame: The Physical Environment	We will:
	I will:
Lesson Frame: Introducing Life	We will:
	I will:
Lesson Frame: Observing Mini Habitats	We will:
	I will:

Essential Questions: •What abiotic factors should be considered when setting up terrestrial and aquatic habitats? • What interactions are likely for the organisms in the mini habitat? •What changes have taken place in the terrariums and the class aquariums?	**Outcomes:** Students construct aquatic and terrestrial ecosystems in the classroom and observe them over time to understand ecosystem interactions. They use a scientific log to observe, describe, and monitor changes in biotic and abiotic factors.
Performance Tasks: •Assemble the abiotic elements of an aquatic and a terrestrial mini habitat as models of natural habitats •Introduce organisms into aquatic and terrestrial mini habitats •Collect and analyze data over time, using a scientific log and observational drawings to record interactions and changes in mini habitats •Develop a model in the form of a food web for each mini habitat	**Learning Targets:** Students will Learn that: •an aquatic ecosystem functions in water. •a terrestrial ecosystem functions on land. •organisms depend on the abiotic elements in their ecosystem.
Topic 5: **Producers**	**Length:** 8 sessions
Standard(s): MS-LS1-6, MS-LS1-7, MS-LS2-3	**Academic Vocabulary:** aerobic cellular respiration, autotroph, biomass, calorie, carbohydrate, control, energy, food, heterotroph, kilocalorie, photosynthesis
Lesson Frame: Growing Producers	We will:
	I will:
Lesson Frame: Biomass and Producers	We will:
	I will:
Lesson Frame: Ecoscenario Producers	We will:
	I will:
Lesson Frame: Energy Transfer from Food	I will:
	We will:
Essential Questions: •What is the effect of light on producers? •What do producers need to grow and increase biomass? •What are the roles of specific producers in the ecosystem? •How can we model and measure energy transfer from food?	**Outcomes:** Students explore the effect of light on photosynthesis by studying wheat plants. Students learn that through photosynthesis, producers increase the biomass of an ecosystem. Students investigate the producers in specific ecosystems and identify their roles. Students model and measure the energy transferred from food.
Performance Tasks: •Grow plants to determine the role light energy plays in growth of producers in ecosystems. •Analyze experimental data to determine that plants require water, carbon dioxide, and light to produce biomass •Burn food to model and measure the energy transferred from food	**Learning Targets:** Students will Learn that: •photosynthesis is the process by which energy-rich molecules are made from water, carbon dioxide, and light. •photosynthesis produces potential energy and aerobic cellular respiration transfers usable energy to organisms. •producers increase the biomass of an ecosystem through photosynthesis; ecosystems are defined by their producers. •food is energy-rich organic matter that organisms need to conduct their life processes.

Topic 6: **Following the Energy**	**Length:** 7 sessions
Standard(s): MS-LS1-6, MS-LS2-1, MS-LS2-2, MS-LS2-3	**Academic Vocabulary:** bioaccumulation, carnivore, herbivore, omnivore, sustainable, trophic level
Lesson Frame: Using Energy	We will:
	I will:
Lesson Frame: Food-Chain Game	We will:
	I will:
Lesson Frame: Trophic Levels	I will:
	We will:
Lesson Frame: Decomposers	I will:
	We will:
Essential Questions: •What are the kinds of work you do that require energy? •What is needed to sustain a food chain? •How does biomass and energy flow through an ecosystem? •What happens to the energy stored in the biomass of an organism when it does?	**Outcomes:** Students learn how energy provided by producers is used by all organisms. They explore how food energy moves from one trophic level to another through feeding relationships. Students simulate feeding relationships and determine what is needed to sustain a food chain. They investigate the role of decomposers in ecosystems.
Performance Tasks: •Construct an explanation for how organisms get the energy they need for life •Develop and use a model to explain how matter and energy transfer across trophic levels in an ecosystem.	**Learning Targets:** Students will learn that: •every activity undertaken by living organisms involves expenditure of energy. •feeding relationships identify trophic roles. •biomass moves through an ecosystem from one trophic level to the next; only a small fraction of the biomass consumed at a level is used to produce growth (biomass) at that level; most of the biomass consumed is used for energy and much is lost to the environment. •decomposers recycle food molecules to basic particles for use by organisms in the ecosystem.
Topic 7: **Population Size**	**Length:** 8 sessions
Standard(s): MS-LS2-1, MS-LS2-2, MS-LS2-4	**Academic Vocabulary:** interdependent, limiting factor, migrate, reproductive potential
Lesson Frame: Reproductive Potential	We will:
	I will:
Lesson Frame: Limiting Factors	We will:
	I will:
Lesson Frame: Population Dynamic	I will:
	We will:
Essential Questions: •How many milkweed bugs could be in your habitat at the end of a year? •What are the limiting factors that affect algae and brine shrimp populations at Mono Lake? •How does predicted population growth compared to actual population growth?	**Outcomes:** Students explore some of the variables in an ecosystem that limit population size. Based on their milkweed-bug study, they predict what the population would be in 12 months. Students use simulations to explore population interactions and outcomes.

Performance Tasks: •Calculate the theoretical growth of a population of milkweed bugs, assuming there are no limiting factors •Use computer simulations to model how reproductive strategies and limiting factors affect population growth •Analyze field observations to determine the effects of biotic factors on population size •Describe the population fluctuations in Mono Lake in terms of limiting factors and feeding relationships and support conclusions with evidence	**Learning Targets:** Students will learn that: •reproductive potential is the theoretical unlimited growth of a population over time. •a limiting factor is any biotic or abiotic component of the ecosystem that controls the size of a population.
Topic 8: **Human Impact**	**Length:** 7 sessions
Standard(s): MS-LS2-4, MS-ESS3-3, MS-ESS3-4	**Academic Vocabulary:** biodiversity, biodiversity index, introduced species, invasive species, native species, sampling, unbiased
Lesson Frame: Biodiversity	We will:
	I will:
Lesson Frame: Invasive Species	We will:
	I will:
Lesson Frame: Mono Lake Revisited	We will:
	I will:
Essential Questions: •Why is biodiversity important in an ecosystem? •What can happen when a species is introduced to an ecosystem? •What impact have people had on Mono Lake?	**Outcomes:** Students explore the importance of biodiversity on the health of the ecosystem. They investigate how humans have interacted with the ecosystem and put stresses on biodiversity. Students then learn how humans can reverse these stresses and help restore ecosystems.
Performance Tasks: •Conduct a field survey of the biodiversity of an ecosystem •Calculate the biodiversity index for a sample of the schoolyard •Explore the impact of humans on an ecosystem	**Learning Targets:** Students will learn that: •biodiversity is the variety of organisms in an ecosystem. •a biodiversity index is one measure of the health of an ecosystem, and its ability to recover from stress. In a sustainable ecosystem, the system is resilient to change. •introduced species compete with native species in an ecosystem. •if an introduced species has no predators in the new ecosystem, it can thrive and become invasive. •humans affect ecosystems in both positive and negative ways.
Topic 9: **Ecoscenarios**	**Length:** 7 sessions
Standard(s): MS-LS2-4, MS-LS2-5, MS-ESS3-3, MS-ESS3-4, MS-ETS1-1, MS-ETS1-2	**Academic Vocabulary:** cultural service, provisioning service, regulating service, supporting service
Lesson Frame: Human Involvement	We will:
	I will:
Lesson Frame: Evaluating Solutions	We will:
	I will:
Lesson Frame: Presentations	We will:

	I will:
Essential Questions: •How have humans affected your ecoscenario, and what efforts have humans made to lessen this impact?	**Outcomes:** Students return to their ecoscenarios and use the knowledge developed in previous investigations to analyze the effects of human interactions in their ecosystem. They are given several engineering solutions and evaluate which they feel is the best solution to preserve or restore the ecosystem.
Performance Tasks: •Discuss ways that human activities affect natural ecosystems •Evaluate possible solutions for preserving and restoring natural ecosystems using evidence to support a case •Recommend natural solutions to balance the sustainability of an ecosystem with human needs for ecosystem services	**Learning Targets:** Students will learn that: •humans rely on ecosystems for ecosystem services (provisioning, regulating, cultural, and supporting services). •ecosystems are dynamic systems of complex interactions. •disruptions to abiotic factors in ecosystems can cause shifts in populations and changes to ecosystem sustainability. •changes in ecosystems can affect services essential to humans. •solutions can be engineered to mitigate human impact.

Unit Name: **Waves**	**Length:** approximately 35
Standards: MS-PS4-1, MS-PS4-2, MS-PS4-3, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4	**Outcomes:** Students measure their pulse under different circumstances to think about frequency. They create waves using metal springs. They use these simple waves to explore the fundamental properties of waves: wavelength, frequency, and amplitude. Students learn about wave energy and compare energy in waves with different properties. Students look at an engineering failure and consider the work engineers must do to achieve a successful design. They use these ideas to develop a chamber that can effectively block sound waves. Students explore properties of light waves. They start by using mirrors to explore reflection. Students use spectroscopes to analyze spectra of visible light and learn more about the electromagnetic spectrum. They use filters to change the spectrum of a light source and to learn about color. Finally, they determine how refraction changes the path of light rays as they travel between media. Students learn how information can be encoded and sent as digital waves to transfer large amounts of information efficiently over large distances. They test properties of fiber optic cables to develop an understanding of how total internal reflection allows data transfer by light. Students learn how data is encoded and sent as modulated waves to a recipient for demodulation. Students create digital waves and develop an understanding of how digital waves enable modern communications.

Essential Questions: What is frequency? What defines a wave? What is the relationship between waves properties and wave energy? How are engineering challenges solved? What is the best way to insulate a recording studio from outside sounds? What happens when light waves interact with matter? What do spectra reveal about light? What makes objects appear as different colors? What happens to light waves at the interface between different media? What are some design constraints in fiber optic communication? How is sound sent through radio waves? How are images sent through radio waves?	**Learning Targets:** Students will learn that: •a wave is a back-and-forth pattern of motion that transfers energy. •key features of waves are crests, troughs, and nodes. •waves can be described in terms of wavelength, frequency, and amplitude. •if you know the frequency and wavelength, you can calculate the velocity of a wave. •a mechanical wave travels through a medium. •the amplitude, frequency, and wavelength of a wave are related to the energy transferred by the wave. •the frequency and wavelength of a wave are related. •planning, researching, modeling, and testing can help engineers develop successful designs. •a sound wave is a mechanical wave, so it requires a medium to travel. •waves interacting with media can be absorbed or reflected. •a wave model can be used to explain the properties of light. •light travels in straight lines, except at the interface between transparent media where refraction occurs. •the angle of incidence equals the angle of reflection. •the electromagnetic spectrum extends beyond visible light. •different wavelengths of visible light are perceived as different colors. •when light shines on an object, the light is reflected, absorbed, or transmitted through the object. •light can be transmitted long distances through optical fibers. •complex information like words, sounds, and images must be encoded to be sent as light. •digital waves can have the same information as analog waves; digital waves can be improved by smaller increments. •many modern communication devices use digitized signals (sent as waves) as a reliable way to encode and transmit information. •modern technology encodes information to improve transmission quality, reliability, and speed.
Topic 1: **Make Waves**	**Length:** 6 sessions
Standard(s): MS-PS4-1	**Academic Vocabulary:** amplitude, compression wave, crest, frequency, kinetic energy, longitudinal wave, node, pulse, reflection, transverse wave, trough, velocity, wave, wavelength
Lesson Frame: Pulse Rate	We will: explore compressions waves using springs
	I will: create a sheet of observations and drawings of compression waves
Lesson Frame: Spring Waves	We will: demonstrate wave pulses and frequency using our pulse as an example
	I will: complete an exit ticket explaining how our pulse is an example of wave frequency

Essential Questions: •What is frequency? •What defines a wave?	**Outcomes:** Students measure their pulse under different circumstances to think about frequency. They create waves using metal springs. They use these simple waves to explore the fundamental properties of waves: wavelength, frequency, and amplitude.
Performance Tasks: •Collect frequency data from multiple sources •Create and describe longitudinal and transverse waves •Apply computational thinking when diagramming a wave, measuring its properties, and calculating velocity	**Learning Targets:** Students will learn that: •a wave is a back-and-forth pattern of motion that transfers energy. •key features of waves are crests, troughs, and nodes. •waves can be described in terms of wavelength, frequency, and amplitude. •if you know the frequency and wavelength, you can calculate the velocity of a wave.
Topic 2: **Wave Energy**	**Length:** 10 sessions
Standard(s): MS-PS4-1, MS-PS4-2, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4	**Academic Vocabulary:** absorb, brainstorm, constraint, criterion, decibel, energy, inverse relationship, mechanical wave, medium, prototype, research, variable
Lesson Frame: Energy in Waves	We will: examine the energy in waves looking at ocean waves as an example
	I will: complete a sheet analyzing aspects of a mechanical wave
Lesson Frame: Bridge Collapse	We will: test waves to measure the energy present in the wave
	I will: analyze and discuss as groups the finding from the activity focusing on energy in the waves
Lesson Frame: Energy in Sound Waves	We will: watch videos and discuss engineering disasters and asses solutions to avoid further disasters
	I will: analyze how we used the engineering process to address the engineering disasters
Essential Questions: •What is the relationship between waves properties and wave energy? •How are engineering challenges solved? •What is the best way to insulate a recording studio from outside sounds?	**Outcomes:** Students learn about wave energy and compare energy in waves with different properties. Students look at an engineering failure and consider the work engineers must do to achieve a successful design. They use these ideas to develop a chamber that can effectively block sound waves.
Performance Tasks: •Modify a model to see what happens when a property of a wave is changed •Evaluate information about a historical engineering failure •Design a sound studio that meets specified criteria and constraints	**Learning Targets:** Students will learn that: •a mechanical wave travels through a medium. •the amplitude, frequency, and wavelength of a wave are related to the energy transferred by the wave. •the frequency and wavelength of a wave are related. •planning, researching, modeling, and testing can help engineers develop successful designs. •a sound wave is a mechanical wave, so it requires a medium to travel. •waves interacting with media can be absorbed or reflected.

Topic 3: **Light Waves**	**Length:** 10 sessions
Standard(s): MS-PS4-3	**Academic Vocabulary:** angle of incidence, angle of reflection, color, electromagnetic spectrum, electromagnetic wave, filter, incident beam, interface, laser, normal line, ray, reflected beam, refraction, spectroscope, spectrum, total internal reflection
Lesson Frame: Mirrors	We will: use mirrors and lasers in an activity that introduces light wave properties
	I will: complete a challenge using knowledge gained on light waves and then comparing lasers and light bulbs
Lesson Frame: Spectra	We will: discuss reflection and angles of reflections from the activity and reading
	I will: gather data from activity then answer the questions on the activity found on your sheet
Lesson Frame:Color	we will: learn about the electromagnetic spectrum by looking at light through various colored filters
	I will:
Lesson Frame: Refraction	We will:
	I will:
Essential Questions: •What happens when light waves interact with matter? •What do spectra reveal about light? •What makes objects appear as different colors? •What happens to light waves at the interface between different media?	**Outcomes:** Students explore properties of light waves. They start by using mirrors to explore reflection. Students use spectroscopes to analyze spectra of visible light and learn more about the electromagnetic spectrum. They use filters to change the spectrum of a light source and to learn about color. Finally, they determine how refraction changes the path of light rays as they travel between media.
Performance Tasks: •Use lasers to carry out investigations of optical properties of different media •Use light spectra to identify light sources, and collect evidence to support light-wave explanations about color	**Learning Targets:** Students will learn that: •a wave model can be used to explain the properties of light. •light travels in straight lines, except at the interface between transparent media where refraction occurs. •the angle of incidence equals the angle of reflection. •the electromagnetic spectrum extends beyond visible light. •different wavelengths of visible light are perceived as different colors. •when light shines on an object, the light is reflected, absorbed, or transmitted through the object.
Topic 4: **Communication Waves**	**Length:** 9 sessions
Standard(s): MS-PS4-3	**Academic Vocabulary:** amplitude modulation (AM), analog, binary, carrier wave, demodulation, digital, fiber optics, frequency modulation (FM), modulation, optical fiber, pixel, resolution

Lesson Frame: Optical Fibers	We will:
	I will:
Lesson Frame: Sending Sound	We will:
	I will:
Lesson Frame: Sending Images	We will:
	I will:
Essential Questions: •What are some design constraints in fiber optic communication? •How is sound sent through radio waves? •How are images sent through radio waves?	**Outcomes:** Students learn how information can be encoded and sent as digital waves to transfer large amounts of information efficiently over large distances. They test properties of fiber optic cables to develop an understanding of how total internal reflection allows data transfer by light. Students learn how data is encoded and sent as modulated waves to a recipient for demodulation. Students create digital waves and develop an understanding of how digital waves enable modern communications.
Performance Tasks: •Transmit data through optical fibers to test design constraints •Analyze graphical displays of carrier waves, sound waves, and modulated waves to understand their relationships and describe their properties.	**Learning Targets:** Students will learn that: •light can be transmitted long distances through optical fibers. •complex information like words, sounds, and images must be encoded to be sent as light. •digital waves can have the same information as analog waves; digital waves can be improved by smaller increments. •many modern communication devices use digitized signals (sent as waves) as a reliable way to encode and transmit information. •modern technology encodes information to improve transmission quality, reliability, and speed.

Unit Name: Gravity and Kinetic Energy	**Length:** approximately 38
Standards: MS-PS2-1, MS-PS2-2, MS-PS2-4, MS-PS2-5, MS-PS3-1, MS-PS3-2, MS-PS3-5, MS-ESS1-2, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4	**Outcomes:** Students see an unprotected “bean brain” fall to the floor and start to think about speed, acceleration, energy transfer, and collisions. They walk along two interval tracks to collect data about speed. After graphing their results, they conclude that the slope of a graph of distance versus time is related to the speed. They then walk along a different interval track and discover that the speed required is not constant. They graph their results to learn about acceleration. Finally, students observe a ball dropping and complete a detailed analysis of its motion. They determine that the ball is not falling at a constant speed, but accelerating. They calculate the rate and compare it to the acceleration of gravity, to develop a working definition of gravity. Students use spring scales to learn about the difference between mass and weight. They compare mass and weight on different planets, then refine their definition of gravity. Students learn about Newton’s second law of motion, which describes the relationship between mass, force, and acceleration. Students roll marbles down a ramp system to collide with plastic cubes. They gather data about the cubes’ motion to make inferences about kinetic and potential energy. Students do an activity in which they review data from different collision scenarios. They analyze the data in two ways to draw conclusions about the effect of mass and speed on collisions. Finally, students experiment with horizontal collisions, learn more about Newton’s laws, and consider the implications in various situations. Students view a video that introduces the physics concept of impulse. They learn that increasing the time it takes for an object to change speed in a collision results in less force being applied to the object. Using this principle, students design a protective helmet for a model head. After several iterative designs, they share results as a class and discuss the engineering design process. To finish the course, students review big ideas and create a list of remaining physics questions. Students work together to answer questions and prepare for the Posttest.

Essential Questions: What is speed? What is acceleration? What is gravity? What is the relationship between mass and weight? What is gravity like on other planets compared to Earth? How is potential energy related to kinetic energy? How does the kinetic energy of an object change when its speed or mass changes? How do Newton's laws help us explain marble billiards? Which properties of physics can help us design protection from a collision? What are the big ideas that explain gravity, accelerations, kinetic energy, and collisions?	**Learning Targets:** Students will learn that: •the average speed of an object is the distance it travels in a unit of time. •the slope of the line on a graph of distance versus time represents the speed; steeper slopes represent faster speeds. •an object that does not move at a constant speed has acceleration, change of speed per unit time. •a falling object increases speed with a constant acceleration, regardless of the object's mass. •gravity is an attractive force between two objects with a rate of acceleration of 9.8 m/s2 on Earth. • gravity is an attractive force between two objects. • mass is the amount of matter in an object. •weight is the force of gravity on an object. •the acceleration of an object increases if the force acting upon it increases (F = ma). • if identical force is applied to two objects with different masses, the more massive object will accelerate less than the less massive object (F = ma). •kinetic energy is energy of moving things; potential energy is energy dependent on the position of an object. •a collision transfers kinetic energy. •increasing the mass of an object by some factor increases its kinetic energy by the same factor; increasing the speed of an object by some factor increase its kinetic energy by the same factor squared. •an object in motion will stay in motion with the same speed unless acted on by an external force. •for every action, there is an equal and opposite reaction. •impulse is force applied over a period of time. •extending the time of a collision, by slowing an object's deceleration, results in less force on the object. •safety feature to protect humans in collisions use properties of physics to slow deceleration. •engineers use an iterative process to solve problems.
Topic 1: **Acceleration**	**Length:** 13 sessions
Standard(s): MS-PS2-2, MS- PS2-4	**Academic Vocabulary:** acceleration, air resistance, average speed, constant speed, distance, force, gravity, position, slope, speed
Lesson Frame: Speed Track	We will: analyze the data found on speed and graph our findings
	I will: compare the data found in my experiment with classmates and share results on a ticket to leave
Lesson Frame: Acceleration Track	We will: use our knowledge from learning about speed and learn how the speed equation applies to acceleration
	I will: use the speed equation and apply it to answer the questions on the half sheet about acceleration
Lesson Frame: Acceleration of Gravity	We will: walk tracks at different speeds with set distances to learn about acceleration
	I will: enter data from lab on my report and calculate acceleration
Essential Questions: • What is speed? • What is acceleration? • What is gravity?	**Outcomes:** Students see an unprotected “bean brain” fall to the floor and start to think about speed, acceleration, energy transfer, and collisions. They walk along two interval tracks to collect data about speed. After graphing their results, they conclude that the slope of a graph of distance versus time is related to the speed. They then walk along a different interval track and discover that the speed required is not constant. They graph their results to learn about acceleration. Finally, students observe a ball dropping and complete a detailed analysis of its motion. They determine that the ball is not falling at a constant speed, but accelerating. They calculate the rate and compare it to the acceleration of gravity, to develop a working definition of gravity.

Performance Tasks: •Analyze line slope to make claims about an object's speed •Construct and analyze data sets to identify patterns and distinguish between speed and acceleration •Use digital tools to analyze motion video data and determine the force of gravity on Earth	**Learning Targets:** Students will learn that: •the average speed of an object is the distance it travels in a unit of time. •the slope of the line on a graph of distance versus time represents the speed; steeper slopes represent faster speeds. •an object that does not move at a constant speed has acceleration, change of speed per unit time. •a falling object increases speed with a constant acceleration, regardless of the object's mass. •gravity is an attractive force between two objects with a rate of acceleration of 9.8 m/s2 on Earth.
Topic 2: **Force of Gravity**	**Length:** 8 sessions
Standard(s): MS-PS2-2, MS-PS2-4, MS-PS2-5, MS-ESS1-2	**Academic Vocabulary:** gram, mass, Newton, weight
Lesson Frame:Mass and Weight	We will: analyze a ball drop video to assess acceleration due to gravity
	I will: complete a sheet to demonstrate my knowledge of acceleration
Lesson Frame: How Heavy?	We will: perform an activity highlighting why objects are heavy and then read about the Law of Gravity
	I will: complete the questions from the reading with my partner demonstrating my understanding of the law of gravity
Essential Questions: •What is the relationship between mass and weight? •What is gravity like on other planets compared to Earth?	**Outcomes:** Students use spring scales to learn about the difference between mass and weight. They compare mass and weight on different planets, then refine their definition of gravity. Students learn about Newton's second law of motion, which describes the relationship between mass, force, and acceleration.
Performance Tasks: • Calculate weight at locations with different gravitational forces •Analyze data to construct explanations about proportional relationships between mass, force, and acceleration	**Learning Targets:** Students will learn that: • gravity is an attractive force between two objects. • mass is the amount of matter in an object. •weight is the force of gravity on an object. •the acceleration of an object increases if the force acting upon it increases (F = ma). • if identical force is applied to two objects with different masses, the more massive object will accelerate less than the less massive object (F = ma).
Topic 3: **Energy and Collisions**	**Length:** 10 sessions
Standard(s): MS-PS2-1, MS-PS2-2, MS-PS3-1, MS-PS3-2, MS-PS3-5	**Academic Vocabulary:** collision, energy, friction, joule, kinetic energy, potential energy, variable
Lesson Frame: Potential and Kinetic Energy	We will: observe collisions to learn about the connections between potential and kinetic energy
	I will: complete and exit ticket explaining the transfer of energy in collisions from potential to kinetic
Lesson Frame: Stop or Crash	We will: design and perform and experiment with a ramp and a marble to measure the energy transferred
	I will: write an explanation detailing why the marble's speed at the bottom of the ramp was the greatest
Lesson Frame: Marble Collisions	We will: conduct a stop or crash activity to assess the change of an object's kinetic energy
	I will: analyze the data from the activity to quantify the energy change

Essential Questions: •How is potential energy related to kinetic energy? •How does the kinetic energy of an object change when its speed or mass changes? •How do Newton's laws help us explain marble billiards?	**Outcomes:** Students roll marbles down a ramp system to collide with plastic cubes. They gather data about the cubes' motion to make inferences about kinetic and potential energy. Students do an activity in which they review data from different collision scenarios. They analyze the data in two ways to draw conclusions about the effect of mass and speed on collisions. Finally, students experiment with horizontal collisions, learn more about Newton's laws, and consider the implications in various situations.
Performance Tasks: •Collect and analyze data from collisions to determine the relationships between speed, mass, and kinetic energy	**Learning Targets:** Students will learn that: •kinetic energy is energy of moving things; potential energy is energy dependent on the position of an object. •a collision transfers kinetic energy. •increasing the mass of an object by some factor increases its kinetic energy by the same factor; increasing the speed of an object by some factor increase its kinetic energy by the same factor squared. •an object in motion will stay in motion with the same speed unless acted on by an external force. •for every action, there is an equal and opposite reaction.
Topic 4: **Engineering**	**Length**: 7 sessions
Standard(s): MS-PS2-1, MS-S3-5, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4	**Academic Vocabulary:** constraint, criterion, impulse
Lesson Frame: Helmet Design Challenge	We will: use or knowledge about physics to design a helmet to protect a "bean brain"
	I will: analyze and compare successful designs as a group using our physics terms to explain success or failure
Lesson Frame: Big Ideas	We will: discuss the results of the activity and what this means to people and the importance of helmets and how they protect against concussions
	I will: answer questions from the article on concussions to solidify our learning to real world problems
Essential Questions: •Which properties of physics can help us design protection from a collision? •What are the big ideas that explain gravity, accelerations, kinetic energy, and collisions?	**Outcomes:** Students view a video that introduces the physics concept of impulse. They learn that increasing the time it takes for an object to change speed in a collision results in less force being applied to the object. Using this principle, students design a protective helmet for a model head. After several iterative designs, they share results as a class and discuss the engineering design process. To finish the course, students review big ideas and create a list of remaining physics questions. Students work together to answer questions and prepare for the Posttest.
Performance Tasks: •Define an engineering problem and design solutions through an iterative process •Engage in argument from evidence to evaluate solutions to a design challenge •Develop and use a model to describe the iterative process of engineering design •Construct explanations and ask questions about physics concepts related to kinetic energy, gravity, and collisions	**Learning Targets:** Students will learn that: •impulse is force applied over a period of time. •extending the time of a collision, by slowing an object's deceleration, results in less force on the object. •safety feature to protect humans in collisions use properties of physics to slow deceleration. •engineers use an iterative process to solve problems.

Unit Name: **Earth History**	**Length:** approximately 64
Standards: MS-ESS1-4, MS-ESS2-1, MS-ESS2-2, MS-ESS2-3, MS-ESS3-1, MS-ESS3-2, MS-ESS3-3, MS-ESS3-4, MS-ESS3-5, MS-LS4-1	**Outcomes:** Earth Is Rock uses the anchor phenomenon of the Grand Canyon to introduce students to the study of the landforms and rocks that make up Earth's crust. Through observations of aerial images of Earth's surface, sedimentary rock samples, and images from the Grand Canyon, students begin developing awareness about the complexity of Earth's crust and how geologists study it by trying to answer the question "What is the story of this place?" In Weathering and Erosion students explore the phenomena of earth material movement over the surface of Earth. Students observe a stream table to discover how water can erode sediments from one location and deposit the sorted sediments in a basin downstream. They model how rocks weather and what happens to sediments. Students also consider how soil forms. In Deposition, students investigate the phenomenon of the variety of sedimentary rocks on Earth. They look closely at the processes by which bedrock that is weathered and eroded ends up deposited in basins. There, favorable conditions can turn the sediments into sedimentary rock. Students consider how evidence in sedimentary rocks can lead to inferences about the ancient environments in which they formed. In Fossils and Past Environments, students experience the phenomenon of fossils. Students become familiar with the geologic time scale to understand how old fossils are and begin to comprehend the enormous spans of time that are described by geologic time. They use fossils to put the history of the Grand Canyon into the geologic time scale. Igneous Rocks presents students with new rock samples from a new location. It leads to an investigation of the relationship between crystal size and the formation of igneous rocks. The formation of igneous rocks is the phenomenon investigated by students. Volcanoes and Earthquakes provides engaging phenomena to investigate and gives students the opportunity to discover a pattern of geologic activity. Subduction, convection, and the theory of crustal plate tectonics are introduced to explain continental drift, plate boundary interactions, and the patterns of volcanoes and earthquakes. Mountains and Metamorphic Rocks builds on the phenomena of earthquakes and volcanoes by focusing on new landforms— mountains. Students investigate the interactions at plate boundaries that form mountains and metamorphic rocks, leading students to consider the rock cycle. In Geo Scenarios, students apply prior knowledge from the Earth History Course and new, site-specific information to develop a geologic story of a place or process. Students are introduced to four sites across the United States— four phenomena. Each team of students researches the story of one of those places, the processes that shaped it, and the implications of the story for human society. What Is Earth's Story? challenges students to put together what they have learned about Earth's geologic history and to use their knowledge to finish telling the story of the phenomenal Grand Canyon.

Essential Questions:	**Learning Targets:**
Which landforms occur at different locations on Earth? Why do there appear to be stripes on the walls of the Grand Canyon? Why do there appear to be stripes on the walls of the Grand Canyon? What happens to earth materials when water flows over landforms? How did weathering and erosion contribute to the formation of the Grand Canyon? How is soil related to rocks? What happens to sediments that get deposited in basins? How does limestone form? What do sedimentary rock layers reveal about ancient environments? How do fossils get in rocks? How old are fossils? When did the Grand Canyon rocks form? How do igneous rocks form? What affects crystal formation in igneous rocks? What can crystal size tell us about where an igneous rock formed? Where do volcanoes occur on Earth and where do earthquakes occur on Earth? Why do volcanoes and earthquakes occur where they do? What causes plates to move? What happens to Earth's crust during plate interactions? How do metamorphic rocks form? What do we need to know to tell the geologic story of a place? What is the geologic story of the Grand Canyon? How do earth materials recycle through constructive and destructive processes?	Students will learn that: •Earth's surface has a variety of different landforms and water features. •every place on Earth's surface has a unique geologic story. •rocks hold the clues to the story of a place. •limestone, sandstone, and shale are rocks found in the Grand Canyon that can be identified by their characteristics. •most landforms are shaped by slow, persistent processes that proceed over the course of millions of year: weathering, erosion, and deposition. •rock can be weathered into sediments by a number of processes, including frost wedging, abrasion, chemical dissolution, and root wedging. •particles of earth material can be categorized and sorted by size: clay, silt, sand, gravel, pebble, cobble, and boulder. •most sediments move downhill until they are deposited in a basin. Sediments that do not form rock can become widely distributed over Earth's surface as soil. •sediments deposited by water usually form flat, horizontal layers. •sediments turn into solid rock (such as sandstone, shale, and limestone) through the process of lithification, which involves compaction, cementation, and dissolution. •the relative ages of sedimentary rock can be determined by the sequence of layers. Lower layers are older than higher layers. •the processes we observe today, such as weathering, erosion, and deposition, probably acted in the same way millions of year ago, producing sedimentary rocks. •a fossil is any remains, trace, or imprint of a plant or animal that was preserved in Earth's crust during ancient times. •the fossil record represents what we know about ancient life and is constantly refined as new fossil evidence is discovered. •geologic time extends from Earth's origin to the present. •Earth's history is measured in millions and billions of years. •Index fossils allow rock layers to be correlated by age over vast distances. •Earth is composed of layers of earth materials, from its hard crust of rock all the way down to its hot core. •heat inside Earth melts rock; melted rock can cool and form igneous rocks. •molten rock cools quickly on the surface of Earth and can be identified by small mineral crystals. Molten rock that cools more slowly inside Earth forms larger mineral crystals. •volcanoes and earthquakes occur along plate boundaries. •Earth's crust and solid upper mantle make up Earth's plates. Plates can be the size of continents or larger or smaller. •Earth's plates "float" on top of the layer of viscous, semi solid earth material below-- the asthenosphere. •The asthenosphere is a heated, semisolid, semifluid material that flows due to convection currents. •Plate movements result in plate-boundary interactions that produce volcanoes, earthquakes, and continental drift. •interactions between tectonic plates at their boundaries deform the plates, producing landforms on Earth's surface. •mountains form as a results of plate interactions. •when plates interact, high heat and immense pressure can change rock into new forms of rock (metamorphic rock). •the rock cycle describes how rock is constantly being recycled and how each type of rock can be transformed into other rock types.

Topic 1:**Earth is a Rock**	**Length:** 8 sessions
Standard(s): MS-ESS1-4, MS-ESS2-1, MS-ESS2-2	**Academic Vocabulary:** calcite, correlation, elevation, geologist, landform, layer, limestone, sandstone, shale
Lesson Frame: What's the Story of This Place?	We will:
	I will:
Lesson Frame: Grand Canyon Rocks	We will:
	I will:
Lesson Frame: Correlating Grand Canyon Rocks	We will:
	I will:
Essential Questions: •Which landforms occur at different locations on Earth? •Why do there appear to be stripes on the walls of the Grand Canyon?	**Outcomes:** Earth Is Rock uses the anchor phenomenon of the Grand Canyon to introduce students to the study of the landforms and rocks that make up Earth's crust. Through observations of aerial images of Earth's surface, sedimentary rock samples, and images from the Grand Canyon, students begin developing awareness about the complexity of Earth's crust and how geologists study it by trying to answer the question "What is the story of this place?"
Performance Tasks: •Make and record observations of landforms on Earth's surface and some of the rocks that compose them •Analyze rock samples from different sites to construct rock correlation	**Learning Targets:** Students will learn that: •Earth's surface has a variety of different landforms and water features. •every place on Earth's surface has a unique geologic story. •rocks hold the clues to the story of a place. •limestone, sandstone, and shale are rocks found in the Grand Canyon that can be identified by their characteristics.
Topic 2: **Weather and Erosion**	**Length:** 9 sessions
Standard(s): MS-ESS2-1, MS-ESS2-2	**Academic Vocabulary:** abrasion, basin, bedrock, chemical reaction, chemical weathering, clay, deposition, differential erosion, erosion, frost wedging, humus, mineral, model, physical weathering, rock, rock fall, root wedging, sand, sediment, silt, soil, soil profile, sorting, weathering
Lesson Frame: Stream Table	We will:
	I will:
Lesson Frame: Weathering	We will:
	I will:
Lesson Frame: Soils	We will:
	I will:

Essential Questions: •What happens to earth materials when water flows over landforms? •How did weathering and erosion contribute to the formation of the Grand Canyon? •How is soil related to rocks?	**Outcomes:** In Weathering and Erosion students explore the phenomena of earth material movement over the surface of Earth. Students observe a stream table to discover how water can erode sediments from one location and deposit the sorted sediments in a basin downstream. They model how rocks weather and what happens to sediments. Students also consider how soil forms.
Performance Tasks: •Sort earth materials by size, using water •Use models to represent, study, and manipulate Earth processes	**Learning Targets:** Students will learn that: •most landforms are shaped by slow, persistent processes that proceed over the course of millions of year: weathering, erosion, and deposition. •rock can be weathered into sediments by a number of processes, including frost wedging, abrasion, chemical dissolution, and root wedging. •particles of earth material can be categorized and sorted by size: clay, silt, sand, gravel, pebble, cobble, and boulder. •most sediments move downhill until they are deposited in a basin. Sediments that do not form rock can become widely distributed over Earth's surface as soil.
Topic 3: **Deposition**	**Length:** 6 sessions
Standard(s): MS-ESS1-4, MS-ESS2-1, MS-ESS2-2	**Academic Vocabulary:** cement, cementation, compaction, groundwater, horizontal, ooze, precipitate, principle of original horizontality, principle of superposition, sedimentary rock, uniformitarianism
Lesson Frame: Sandstone and Shale	We will:
	I will:
Lesson Frame: Limestone	We will:
	I will:
Lesson Frame: Interpreting Sedimentary Layers	We will:
	I will:
Essential Questions: •What happens to sediments that get deposited in basins? •How does limestone form? •What do sedimentary rock layers reveal about ancient environments?	**Outcomes:** In Deposition, students investigate the phenomenon of the variety of sedimentary rocks on Earth. They look closely at the processes by which bedrock that is weathered and eroded ends up deposited in basins. There, favorable conditions can turn the sediments into sedimentary rock. Students consider how evidence in sedimentary rocks can lead to inferences about the ancient environments in which they formed.

Performance Tasks: •Identify components of sandstone, shale, and limestone •Infer change in environments through the interpretation of a sequence of sedimentary rock layers	**Learning Targets:** Students will learn that: •sediments deposited by water usually form flat, horizontal layers. •sediments turn into solid rock (such as sandstone, shale, and limestone) through the process of lithification, which involves compaction, cementation, and dissolution. •the relative ages of sedimentary rock can be determined by the sequence of layers. Lower layers are older than higher layers. •the processes we observe today, such as weathering, erosion, and deposition, probably acted in the same way millions of year ago, producing sedimentary rocks.
Topic 4: **Fossils and Past Environments**	**Length:** 10 sessions
Standard(s): MS-ESS1-4, MS-LS4-1	**Academic Vocabulary:** Cenozoic, crossbreeding, cross section, epoch, era, formation, fossil, fossil record, geologic time, index fossil, law of fossil succession, mesozoic, paleontology, paleozoic, period, Precambrian, relative time scale, stratigraphy, unconformity
Lesson Frame: Fossils	We will:
	I will:
Lesson Frame: A Long Time Ago	We will:
	I will:
Lesson Frame: Index Fossils	We will:
	I will:
Essential Questions: •How do fossils get in rocks? •How old are fossils? •When did the Grand Canyon rocks form?	**Outcomes:** In Fossils and Past Environments, students experience the phenomenon of fossils. Students become familiar with the geologic time scale to understand how old fossils are and begin to comprehend the enormous spans of time that are described by geologic time. They use fossils to put the history of the Grand Canyon into the geologic time scale.
Performance Tasks: •Construct a timeline of geologic events and ancient life •Infer ancient environments, based on rock and fossil evidence •Describe how rocks can be given a relative age, based on their relationship to other rocks	**Learning Targets:** Students will learn that: •a fossil is any remains, trace, or imprint of a plant or animal that was preserved in Earth's crust during ancient times. •the fossil record represents what we know about ancient life and is constantly refined as new fossil evidence is discovered. •geologic time extends from Earth's origin to the present. •Earth's history is measured in millions and billions of years. •Index fossils allow rock layers to be correlated by age over vast distances.
Topic 5: **Igneous Rocks**	**Length:** 6 sessions

Standard(s): MS-ESS2-1, MS-ESS2-2	**Academic Vocabulary:** asthenosphere, crust, crystal, crystallize, extrusive, igneous rock, inner core, intrusive, lava, lithosphere, magma, mantle, outer core
Lesson Frame: Earth's Layers	We will:
	I will:
Lesson Frame: Salol Crystals	We will:
	I will:
Lesson Frame: Types of Igneous Rocks	We will:
	I will:
Essential Questions: •How do igneous rocks form? •What affects crystal formation in igneous rocks? •What can crystal size tell us about where an igneous rock formed?	**Outcomes:** Igneous Rocks presents students with new rock samples from a new location. It leads to an investigation of the relationship between crystal size and the formation of igneous rocks. The formation of igneous rocks is the phenomenon investigated by students.
Performance Tasks: •Identify properties of a new set of rock samples, differentiating them from sedimentary rocks •Design an experiment to test how cooling rate affects crystal size •Confirm a relationship between cooling rate and crystal size that can be applied to igneous rock formation	**Learning Targets:** Students will learn that: •Earth is composed of layers of earth materials, from its hard crust of rock all the way down to its hot core. •heat inside Earth melts rock; melted rock can cool and form igneous rocks. •molten rock cools quickly on the surface of Earth and can be identified by small mineral crystals. Molten rock that cools more slowly inside Earth forms larger mineral crystals.
Topic 6: **Volcanoes and Earthquakes**	**Length:** 7 sessions
Standard(s): MS-ESS2-2, MS-ESS2-3, MS-ESS3-1, MS-ESS3-2	**Academic Vocabulary:** active, continental drift, continental shelf, convection, convergent boundary, divergent boundary, dormant, earthquake, extinct, latitude, longitude, plate, plate boundary, ring of fire, seismology, spreading ridge, subduction zone, tectonic, theory of plate tectonics, transform, boundary, volcano, volcanology
Lesson Frame: Mapping Volcanoes and Earthquakes	We will:
	I will:
Lesson Frame: Moving Continents	We will:
	I will:
Lesson Frame: Plate Tectonics	We will:
	I will:

Essential Questions: •Where do volcanoes occur on Earth and where do earthquakes occur on Earth? •Why do volcanoes and earthquakes occur where they do? •What causes plates to move?	**Outcomes:** Volcanoes and Earthquakes provides engaging phenomena to investigate and gives students the opportunity to discover a pattern of geologic activity. Subduction, convection, and the theory of crustal plate tectonics are introduced to explain continental drift, plate boundary interactions, and the patterns of volcanoes and earthquakes.
Performance Tasks: •Analyze volcano and earthquake data for patterns •Model continental drift that has occurred on Earth •Describe how convection and plate tectonics drive continental drift •model plate-=boundary interactions	**Learning Targets:** Students will learn that: •volcanoes and earthquakes occur along plate boundaries. •Earth's crust and solid upper mantle make up Earth's plates. Plates can be the size of continents or larger or smaller. •Earth's plates "float" on top of the layer of viscous, semi solid earth material below-- the asthenosphere. •The asthenosphere is a heated, semisolid, semifluid material that flows due to convection currents. •Plate movements result in plate-boundary interactions that produce volcanoes, earthquakes, and continental drift.
Topic 7: **Mountains and Metamorphic Rocks**	**Length:** 9 sessions
Standard(s): MS-ESS2-1, MS-ESS2-2, MS-ESS2-3	**Academic Vocabulary:** dome, fault, fault block, fold, foliation, gneiss, marble, metamorphic rock, plateau, quartzite, rock cycle, schist, slate, subduction, trench, uplift
Lesson Frame: Plate Models	We will:
	I will:
Lesson Frame: Metamorphic Rocks	We will:
	I will:
Essential Questions: •What happens to Earth's crust during plate interactions? •How do metamorphic rocks form?	**Outcomes:** Mountains and Metamorphic Rocks builds on the phenomena of earthquakes and volcanoes by focusing on new landforms— mountains. Students investigate the interactions at plate boundaries that form mountains and metamorphic rocks, leading students to consider the rock cycle.
Performance Tasks: •Simulate plate interactions to produce various landforms •Model the metamorphic rock process •Apply understanding of geologic processes (plate tectonics and the rock cycle) to interpret rock evidence	**Learning Targets:** Students will learn that: •interactions between tectonic plates at their boundaries deform the plates, producing landforms on Earth's surface. •mountains form as a results of plate interactions. •when plates interact, high heat and immense pressure can change rock into new forms of rock (metamorphic rock). •the rock cycle describes how rock is constantly being recycled and how each type of rock can be transformed into other rock types.
Topic 8: **Geoscenarios**	**Length:** 5 sessions

Standard(s): MS-ESS3-1, MS-ESS3-2, MS-ESS3-3, MS-ESS3-4, MS-ESS3-5	**Academic Vocabulary:** (none)
Lesson Frame: Introduction to the Project	We will:
	I will:
Lesson Frame: Research and Writing	We will:
	I will:
Lesson Frame: Presentations	We will:
	I will:
Essential Questions: •What do we need to know to tell the geologic story of a place?	**Outcomes:** In Geoscenarios, students apply prior knowledge from the Earth History Course and new, site-specific information to develop a geologic story of a place or process. Students are introduced to four sites across the United States— four phenomena. Each team of students researches the story of one of those places, the processes that shaped it, and the implications of the story for human society.
Performance Tasks: •Interpret various data resources to learn about a geologic site or process •Collaborate as a team to bring together data and develop an evidence-based story of a place or process •Describe how human activities and values interact with geologic processes in societal decision making •Present and communicate findings to the rest of the class	**Learning Targets:** Students will learn that: •geologic processes help tell the story of a physical place. •evidence and observations of a site's geology provide clues to tell the geologic story. •knowledge of uplift, plate tectonics, volcanism, weathering, erosion, and fossil evidence plus the principles of uniformitarianism, superposition, and original horizontality can help tell the story of a place.
Topic 9: **What is Earth's Story?**	**Length:** 4 sessions
Standard(s): MS-ESS1-4, MS-ESS2-1, MS-ESS2-2, MS-ESS2-3	**Academic Vocabulary:** (none)
Lesson Frame: Revisit the Grand Canyon	We will:
	I will:
Lesson Frame: Review the Evidence	We will:
	I will:
Essential Questions: •What is the geologic story of the Grand Canyon? •How do earth materials recycle through constructive and destructive processes?	**Outcomes**: What Is Earth’s Story? challenges students to put together what they have learned about Earth’s geologic history and to use their knowledge to finish telling the story of the phenomenal Grand Canyon.

Performance Tasks:	**Learning Targets:**
•Analyze evidence from rocks, landforms, and other resources to put together Earth's geologic story	Students will learn that: •evidence that provides clues about Earth's geologic history comes from observing rocks, landforms, and other earth materials. •scientists specialize in many different disciplines to collect and analyze evidence to help put together Earth's geologic history. •scientists use a number of different tools and techniques to analyze and synthesize evidence obtained from Earth to tell its story.

Course Name:	Financial Literacy		
Credits:	0.5		
Prerequisites:	Junior or Senior Status		
Description:	This course will help prepare students for planning and managing their personal finances. Through instruction and activities students will be introduced to the workings of budgeting, saving, paying for college, the dangers of credit and debt, taxes, insurances and the effects of career choices.		
Academic Standards:	This course follows the Next Gen Personal Finance standards adapted by Jump$tart National Standards. https://www.ngpf.org		
Units:	**Unit Length:**	**Unit Standards:**	**Unit Outcomes:**
Taxes	1.5 weeks	3c: Differentiate between gross, net and taxable income 3b: List circumstances that make it prudent to adjust the income tax withholding allowance 3b: List circumstances that make it prudent to adjust the income tax withholding allowance 3c: Differentiate between gross, net and taxable income 3d: Complete IRS Form 1040EZ, Form 1040, and applicable state income tax forms	Students will exam how a career impacts their taxes, how to file taxes and employment forms.

Banking	4.5 weeks	1a: Use a plan to manage spending and and achieve financial goals 1d: Investigate changes in personal spending behavior that contribute to wealth building Investing 1d: Illustrate how the concept of the time value of money applies to retirement planning 1e: Compare consequences of delaying investment for retirement and benefits of investing early 2a: Investigate account management services that financial institutions provide 2d: Compare the costs of cashing a check with various third parties, such as a bank or credit union, check-cashing services and retail outlets 2e: Demonstrate how to schedule and manage bill payments 2f: Write a check 2a: Investigate account management services that financial institutions provide 3a: Summarize the risks and protections of checks, stored value cards, debit cards, and online and mobile payment systems 3b: Compare the features and costs of personal checking accounts offered by different financial institutions Financial Decision Making 4d: Develop a contingency plan to deal with events, such as a car breakdown or a phone loss that might affect personal finances on short notice 8c: Develop a personal financial plan, including goals, spending-and-saving plan, investing plan, insurance plan, a net worth statement and an estate plan	An investigation into banking will be done by students, who will research about checking accounts and the banking industry. Saving is not one of the tasks Americans do well. This unit will help students to understand how vital it is to our economy to save and how they can start saving.

Credit and Loans	5 weeks	Spending & Saving 4c: Research the average costs of all expenses associated with a four-year college education Employment & Income 1a: Analyze how economic and other conditions affect income and career opportunities and the need for lifelong training and education Financial Decision Making 2a: Evaluate whether financial information is objective, accurate and current Credit & Debt 1b: Explain how credit card grace periods, methods of interest calculation and fees affect borrowing costs 1c: Categorize the types of information needed when applying for credit 1d: Compare the total cost of reducing a credit card balance to zero with minimum versus above-minimum payments, all other terms being equal and no further purchases being made. 1e: Decide the most cost-effective option for paying for a car 1f: Differentiate among various types of student loans and alternatives as a means of paying for post-secondary education 1h: Differentiate between adjustable- and fixed-rate mortgage 2a: Summarize online information about the Fair Credit Reporting Act 2b: Explain the value of credit reports to borrowers and to lenders 2c: Give examples of permissible uses of a credit report other than granting credit 2d: Identify the primary organizations that maintain and provide consumer credit reports 2e: Categorize the information in a credit report and how long it is retained 2f: Explain the rights that people have to examine their credit reports 2g: Investigate ways that a negative credit report can affect a consumer's financial options 2i: Summarize factors that affect a particular credit scoring system 2j: Analyze how a credit score affects creditworthiness and the cost of credit 3b: Examine the types of services that consumer credit counseling agencies offer 3c: Investigate the purpose of bankruptcy and its possible negative effects on assets, employability and credit cost and availability 3d: Investigate how student loan obligations differ from other kinds of debt 3e: Research a financial institution’s debt reduction services 4f: Give examples of legal and illegal debt collection practices covered by the Fair Debt Collection Practices Act 4a: Summarize online information about the Equal Credit Opportunity Act 6b: Summarize the terms of a credit card or other loan agreement Financial Decision Making 1c: Consider how personal finance decisions might affect others 1g: Predict the potential consequences of deferred payment of student loans 2a: Evaluate whether financial information is objective, accurate and current 3d: Investigate how student loan obligations differ from other kinds of debt 8b: Create a cash flow statement to illustrate cash inflows and outflows for a specific period Risk Management & Insurance 7a: Outline steps to resolve identity theft problems as recommended by the Federal Trade Commission and relevant financial institutions 7c: Investigate consumer safeguards for mobile and online banking	This part of this course will take a more indepth look into college costs, savings and spending. Student loans will be a focus and hot topics of today regarding student loans will be looked at. Focus of this unit will be on borrowing money and how to pay it back. Students will be looking at how they can also raise their credit score. This unit will discuss many aspects of our economy and how we interact with our credit. Determining where credit comes from and how to avoid debt will be the focus.

Insurance	1.5 weeks	Risk Management & Insurance 3a: Analyze the conditions under which it is appropriate for young adults to have life, health, and disability insurance 1c: Recommend insurance for the types of risks that young adults may face 3b: Investigate the requirements for health insurance coverage 3e: Explain the purposes long-term care insurance 2a: Differentiate among the main types of auto insurance coverage 2b: List factors that determine auto insurance premiums and the factors that cause them to change 2c: Determine the legal minimum amounts of auto insurance coverage required in one's state of residence and the recommended optimal amounts 2d: Calculate payment expected on an auto insurance claim after applying exclusions and deductibles Financial Decision Making 6c: Summarize the terms of a homeowners' or renters' insurance policy 6d: Summarize the terms of a health insurance plan	Students will understand the importance of having the law required insurance to protect themselves monetarily.
Budgeting	2 weeks	Spending & Saving 1a: Use a plan to manage spending and achieve financial goals 1d: Investigate changes in personal spending behavior that contribute to wealth building 1b: Specify how monetary and non-monetary assets can contribute to net worth Employment & Income 3c: Differentiate between gross, net and taxable income Financial Decision Making 8b: Create a cash flow statement to illustrate cash inflows and outflows for a specific period 6c: Summarize the terms of a homeowners' or renters' insurance policy 6f: Summarize tenant and landlord rights and responsibilities that are covered in the terms of a standard apartment lease agreement 5a: Assess the value of discussing individual and shared financial responsibilities with a roommate before moving in 8a: Create a cash flow statement to illustrate cash inflows and outflows for a specific period Risk Management & Insurance 1c: Recommend insurance for the types of risks that young adults may face. 2b: List factors that determine auto insurance premiums and the factors that cause them to change	Preparing a budget for students needs is becoming more of a priority in our economy. This unit provides the basic knowledge and skill for students to continue their lives after high school and become independent adults. This unit focuses on the basic budgeting and how to manage expenses.
Final Project	1.5 weeks	Math: 1: Make sense of problems and persevere in solving them. 3: Construct viable arguments and critique the reasoning 5: Use appropriate tools. Writing: 6: Use technology to produce and publish writing. 8: Gather relevant information and integrate the information.	Combine knowledge learned throughout the semester into one project that shows they are able to process information and relay information into one completed project.

Unit Name: **Taxes**	**Length:** 1.5 weeks
Standards: 3c, 3b, 3b, 3c, 3d	**Outcomes:** Students will exam how a career impacts their taxes, how to file taxes and employment forms.
Essential Questions: What do you think are the top three categories the government spends our tax dollars on? Do you (or another teenager you know) file taxes? Why or why not? Why do you think that teenagers make up such a small percentage of taxpayers overall? In your opinion, what could help motivate more teenagers to file taxes? Why would this help? When do people file their tax returns? What method do you think most millennials (ages 18-24) prefer to use when filing their taxes? Why?	**Learning Targets:** Students will be able to: Explain where income taxes are collected from and how they provide revenue for public expenses. Read a pay stub and describe the different deductions. Explain why so few teenagers file taxes. Identify common misconceptions about taxes and state the correct facts. Determine whether they need to file taxes based on a variety of scenarios. Identify what types of income are taxed. Understand what a W-4 form is used for and how it impacts the taxes withheld from their paycheck. Explain why making contributions to a Roth IRA with their earnings and/or tax refunds can be a good saving strategy. Identify important dates of the tax cycle. Understand the difference between common tax forms. Explain the purpose of a W-4 and what withholdings mean for their paycheck. Complete a W-4 Identify items they need to prepare their tax return. Explain the different ways they can file their taxes. Understand the purpose of a W-2 form and how to use it to file their taxes. Explain how to make a tax payment if taxes are owed.
Topic: **Taxes**	**Length:** 1.5 weeks
Standards: 3c, 3b, 3b, 3c, 3d	**Academic Vocabulary:** income tax, social security, medicare, 401K, W-4, W-2, dependents, I-9, 1040EZ, tax cycle, 1099, pay stub
Lesson Frame: Taxes and Your Pay Stub	We will: differentiate between gross, net and taxable income.
	I will: read a pay stub.
Lesson Frame: Teens and Taxes	We will: explain where income taxes are collected.
	I will: understand what a W-4 form is used for.
Lesson Frame: The Tax Cycle & Job Paperwork	We will: determine the optimal amount to withhold for personal income tax.
	I will: explain the different ways to file taxes.
Lesson Frame: How to File Your Taxes	We will: complete a 1040EZ and complete all forms associated with filling my taxes next year.
	I will: use a simulation to prepare a tax form.
Performance Tasks: Diagnostic exams, midterm and final exam, unit tests, projects, exit tickets and final project.	Notes: use exit ticket on Taxes and Your Pay Stub

Unit Name: **Banking**	**Length:** 3 weeks
Standards: 2a, 2d, 2e, 2f, 2a, 3a, 3b; Spending & Saving:1a,1d; Investing: 1d, 1e; Financial Decision Making: 4d, 8c	**Outcomes:** An investigation into banking will be done by students, who will research about checking accounts and the banking industry. Saving is not one of the tasks Americans do well. This unit will help students to understand how vital it is to our economy to save and how they can start saving.
Essential Questions: What are some of the advantages and disadvantages of having a checking account? What are the reasons to use mobile banking? What are some of the risks are for using online and mobile banking? The average U.S. household spends $290 a year on bank fees according to MarketWatch. What fees do banks charge on checking accounts? What are the advantages and disadvantages of buying now using credit/taking out a loan and buying it later by saving up and paying cash? What should you look for when selecting an account?	**Learning Targets:** Students will be able to: Explain what a checking account is used for. Understand the variety of ways they can deposit and withdraw funds from their checking account. Conduct various banking activities, such as write a check, use an ATM, and more. Describe the consequences of not being in the banking system Read a bank statement. Understand what the various components of a bank statement mean to interpret where their money goes. Explain the advantages and disadvantages of using online and mobile banking. Identify ways they can protect their checking account. Understand what direct deposit is and how they can use it. Explain what person-to-person payment methods are. Determine which payment method they would use in different scenarios. Identify common checking account fees and how to avoid them. Explain how overdraft protection works and the impact of overdraft fees. Read a Checking Account Summary. Compare overdraft policies at major US banks. Describe how saving and investing are different. Understand fundamentals of saving such as reasons for saving, how much to save, and strategies to enable saving. Explain why it is important to start investing for retirement when you are still young. Identify everyday obstacles Americans experience when trying to save money. Recognize the impact of inflation on savings. Experience simulated challenges of living paycheck to paycheck Understand why it is important to maintain an emergency fund. Identify various rules of thumb and strategies to save money. Determine whether a direct deposit or manually saving is the better strategy for them. Understand how compound interest works to increase savings. Explain the difference between a checking and savings account. Compare different savings vehicles such as a savings account, CD, and money market account. Identify important criteria to consider when selecting a savings account.
Topic: **Checking**	**Length:** 1.5 weeks
Standards: 2a, 2d, 2e, 2f, 2a, 3a, 3b	**Academic Vocabulary:** bank statement, ATM, mobile banking, direct deposit, reconcile, fees, overdraft, reorder, agreement
Lesson Frame: How Checking Works	We will: Understand the variety of ways they can deposit and withdraw
	I will: Discuss mobile banking
Lesson Frame: Online & Mobile Banking	We will: read a bank statement
	I will: explain the difference between a debit card and credit card
Lesson Frame: Beware of Banking Fees	We will: explain how overdraft protection works
	I will: complete an overdraft fee analysis
Performance Tasks: Diagnostic exams, midterm and final exam, unit tests, projects, exit tickets and final project.	Notes: Reconcile a bank statement on the board
Topic: **Saving**	**Length:** 1.5 weeks
Standards: Spending & Saving:1a,1d; Investing: 1d, 1e; Financial Decision Making: 4d, 8c	**Academic Vocabulary:** investing, retirement, inflation, emergency fund, unemployment, compound interest
Lesson Frame: Save Early & Often	We will: illustrate how the concept of the time value of money applies to retirement planning.
	I will: read a graph to compare saving over time.
Lesson Frame: Saving Only Seems Hard	We will: plan to manage spending and look at financial goals.

	I will: identify rules and strategies to save money.
Lesson Frame: Saving is Easy!	We will: compare consequences of delaying investment for retirement.
	I will: determine how much I need to save right now.
Lesson Frame: Where to Save	We will: investigate financial institutions that provide the best services for me.
	I will: understand compound interest.
Performance Tasks: Diagnostic exams, midterm and final exam, unit tests, projects, exit tickets and final project.	Notes:

Unit Name: **Credit and Loans**	**Length:** 5 weeks
Standards: Spending & Saving: 4c, 1a; Financial Decision Making: 2a; Credit & Debt: 1f; Financial Decision Making: 2a, 1c, 8b, 1g, 3d; Credit & Debt: 1c, 1d, 1b, 6b, 1e, 1h; Credit and Debt: 2a, 2b, 2c, 2d, 2e, 2f, 2g, 2i, 2j, 3b, 3c, 3d, 3e, 4f, 4a; Risk Management & Insurance: 7a, 7c	**Outcomes:** This part of the course will take a more indepth look into college costs, savings and spending. Student loans will be a focus and hot topics of today regarding student loans will be looked at. This unit will also cover borrowing money and how to pay it back. Students will be looking at how they can also raise their credit score. This unit will also discuss many aspects of our economy and how we interact with our credit. Determining where credit comes from and how to avoid debt will be the focus.
Essential Questions: Why do you think savings, scholarships, and state aid are good “preparation” steps to take before applying for federal financial aid? Your friend asks you, “How early do you think I should start saving and searching for scholarships and state aid?” What do you recommend? Why? What is a financial aid award letter? How are credit cards similar or different than debit cards? What do you think are some of the advantages and disadvantages to having and using a credit card? What are the different fees that credit card companies charge borrowers? How do you avoid paying these fees? What do people use loans for? When is it good to use a loan? What do you know about how loans work? Why do most people need a mortgage to buy a home? What is one argument for why college students should be using credit cards? If someone you did NOT know wanted to borrow money, what would you want to learn about them before deciding? Why? If someone were to grade you on your financial habits, what grade would you get? Assume you graduate high school with an outstanding GPA. What are the short- and long-term benefits? Assume you graduate high school with a subpar GPA. What are the short- and long-term consequences? Why do you think identity theft is so common and so profitable for thieves?	**Learning Targets:** Students will be able to: Identify the quantitative and qualitative benefits of going to college. Explain the importance of researching expected starting salaries when choosing a college and major. Understand common costs associated with college. Explain the difference between sticker price and net price. Explain the role the FAFSA plays in the financial aid process. Read a Student Aid Report (SAR) and understand the role of their Expected Family Contribution (EFC)ns about paying for college. Understand the different loan repayment options available. Identify the major types of credit and their characteristics. Understand and correctly use the three basic components of lines of credit: principal, interest rate, and term. Understand how the use of a credit card can impact the total cost of purchasing goods and services. Review the Schumer Box and credit card agreement to understand key terms before signing up for a credit card. Explain what a mortgage is and why most Americans require one to finance a home. Understand how down payment, term, and principal influence the overall cost of a mortgage and the size of monthly payments. Explain how amortization impacts loan structure and monthly payments. Provide three common examples of loans. Understand why it can be difficult to qualify for a loan. Explain the importance of establishing credit as a method of opening financial opportunity. List ways that teens can begin establishing credit. Enumerate the components of a credit report and how long each data type is retained. Understand which people or organizations may review your credit report and why. Explain key components of the Fair Credit Reporting Act and how it impacts lenders and borrowers. Understand the importance of reviewing one’s credit report and the steps to take to find and dispute errors. Describe how credit score impacts the ability to borrow money and at what rate. Understand the implications of a thin file and how they can build credit and improve their score. Summarize the rules contained in the Equal Credit Opportunity Act. Understand the consequences for not paying one’s debts. Generate a list of responsible strategies that can be used by an individual to pay down and eliminate their debts. Explain the difference between High Rate and Debt Snowball repayment methods. Decide whether credit counseling could help them manage debt. Understand the consequences for not paying one’s debts and the choices of last resort for out-of-control debt. Describe the basics of how payday and auto title loans work and what role they play in the financial landscape. Recognize their rights under the Fair Debt Collection Act.
Topic: **Paying for College**	**Length:** 1.5 weeks
Standards: Spending & Saving: 4c, 1a; Financial Decision Making: 2a; Credit & Debt: 1f; Financial Decision Making: 2a, 1c, 8b, 1g, 3d	**Academic Vocabulary:** financial aid, FAFSA, SAR, EFC, scholarship, grants, federal stafford loans
Lesson Frame: Paying for College	We will: identify benefits of going to college.
	I will: understand the costs associated with college.
Lesson Frame: Applying for the FAFSA	We will: understand what the FAFSA is for.
	I will: understand the importance of submitting the FAFSA.
Lesson Frame: Scholarships & Grants	We will: understand the national trends in student debt .
	I will: find scholarships.
Lesson Frame: Student Loans	We will: differentiate between the various types of loans.
	I will: explain the differences between federal and private loans.
Lesson Frame: Financial Aid Packages	We will: consider how personal finance decisions might affect others.

	I will: read a SAR.
Lesson Frame: Budgeting During College	We will: start a monthly college budget.
	I will: envision their college career and make choices that impact their college budget.
Lesson Frame: Student Loan Repayment	We will: use a plan to manage spending.
	I will: identify steps to prepare for student loan repayment.
Performance Tasks: Diagnostic exams, midterm and final exam, unit tests, projects, exit tickets and final project. Analyze three student profiles and choose a repayment option that works best for them.	Notes: elevate the work for those going for a 2, 4, 6 & 8 degree
Topic: **Types of Credit**	**Length:** 2 weeks
Standards: Credit & Debt: 1c, 1d, 1b, 6b, 1e, 1h	**Academic Vocabulary:** credit, principal, interest rate, term, statement, debit card, Schumer Box, agreement, amortization, financing
Lesson Frame: Introduction to Credit	We will: explain why a person needs or wants credit.
	I will: identify the major types of credit.
Lesson Frame: Credit Cards as a Young Adult	We will: compare the total cost of credit card debt.
	I will: understand cc debt as good or bad and the responsibility with using them.
Lesson Frame: How Credit Cards Work	We will: explain how credit card grace periods and interest work for billing purposes.
	I will: how to make cc billing payments and how to avoid interest.
Lesson Frame: Credit Card Fine Print	We will: summarize terms of a cc or loan agreement.
	I will: review the Schumer Box.
Lesson Frame: Select a Credit Card	We will: find information needed when applying for credit.
	I will: avoid marketing schemes that might lead to bad credit decisions.
Lesson Frame: Loan Fundamentals	We will: question why people need loans.
	I will: understand why it can be difficult to qualify for a loan.
Lesson Frame: Understanding Auto Loans	We will: decide the most cost-effective option for paying for a car.
	I will: analyze different auto loan offers to determine the best financing terms.
Lesson Frame: Understanding Mortgages	We will: differentiate between adjustable and fixed-rate mortgages.
	I will: explain what a mortgage is and why most people need one to finance a home.
Performance Tasks: Diagnostic exams, midterm and final exam, unit tests, projects, exit tickets and final project.	Notes: Use end of unit test.
Topic: **Managing Credit**	**Length:** 1.5 weeks
Standards: Credit and Debt: 2a, 2b, 2c, 2d, 2e, 2f, 2g, 2i, 2j, 3b, 3c, 3d, 3e, 4f, 4a; Risk Management & Insurance: 7a, 7c	**Academic Vocabulary:** credit, credit report, credit score, identity theft
Lesson Frame: Why You Need Credit	We will: explain the value of a credit report.
	I will: list ways teens can begin establishing credit.
Lesson Frame: Your Credit History	We will: summarize online information about the Fair Credit Reporting Act.
	I will: understand which people or orgs. may review your credit report and why.

Lesson Frame: Read a Credit Report	We will: outline the process of disputing inaccurate credit report data.
	I will: read a credit report.
Lesson Frame: Intro to Credit Scores	We will: summarize factors that affect a particular credit scoring system.
	I will: identify ways of finding out one's credit score.
Lesson Frame: Why Credit Scores Matter	We will: summarize online information about the Equal Credit Opportunity Act.
	I will: describe how your credit score impacts the ability to borrow money.
Lesson Frame: Identity Theft	We will: outline steps to resolve identity theft problems.
	I will: explain actions to take if they become a victim of identity theft.
Lesson Frame: Debt Management	We will: develop a personal financial plan to manage debt.
	I will: generate a list of responsible strategies that can be used by someone to pay down debt.
Lesson Frame: Avoiding Credit Trouble	We will: give examples of legal and illegal debt collection.
	I will: understand the consequences of not paying one's debts.
Performance Tasks: Diagnostic exams, midterm and final exam, unit tests, projects, exit tickets and final project.	Notes: May look at types of bankruptcy.

Unit: **Insurance**	**Length:** 1.5 weeks
Standards: Risk Management & Insurance; 3a, 1c, 3b, 3e, 2a, 2b, 2c, 2d; Financial Decision Making: 6c, 6d	**Outcomes:** Students will understand the importance of having the law required insurance to protect themselves monetarily.
Essential Questions: What risks do you take in an average day? (Pick 3) What are the potential consequences? What (if anything) do you do to protect yourself against those risks? Do you already have any types of insurance? If so, which one(s)? Who pays for it(them)? If not, what type of insurance do you anticipate needing first in life? Why? Consider your life and identify other things (aside from your health and car) that you might want to receive insurance for. List as many as you can and explain why it may be important to get insurance for them.Every budget has a finite amount of money to allocate. Assume you have a full-time job. Would you devote “extra” money in your budget to paying down student loans, saving in an emergency fund, or buying better insurance coverage? How would you make your decision?	**Learning Targets:** Students will be able to: Identify risks and protection strategies. Illustrate how everyone risks financial loss and how insurance shares that risk. Discuss factors that impact insurance premiums and the relationship between premiums and out-of-pocket expenses. Explain the basics of how insurance companies operate. Conduct online research to understand basic information about distinct insurance policy types. Discern commonalities between different types of insurance to reinforce the concepts of how risk pooling, financial protection, and filing a claim work. List factors that determine auto insurance premiums. Describe the main types of auto insurance policies and compare state requirements. Explain a deductible, out-of-pocket expenses, and what insurance will pay for in different situations. Choose an appropriate level of car insurance coverage. Understand the financial tradeoff between premiums and deductibles/out-of-pocket costs under various insurance plans. Appreciate the “randomness” of accidents and illnesses and how insurance protects against financial ruin.
Topic: **Insurance**	**Length:** 1.5 weeks
Standards: Risk Management & Insurance; 3a, 1c, 3b, 3e, 2a, 2b, 2c, 2d; Financial Decision Making: 6c, 6d	**Academic Vocabulary:** insurance premiums, policy, risk, deductible, coverage, accident
Lesson Frame: Insurances a Vital Risk Management	We will: find conditions where it is appropriate for you to have various insurance coverage.
	I will: identify risk strategies.
Lesson Frame: Fundamentals of Insurance	We will: investigate the requirements for health insurance.
	I will: conduct online research to understand basic policy types.
Lesson Frame: Types of Insurance	We will: explain the purpose of long-term care.
	I will: find differences between different types of insurance.
Lesson Frame: Auto Insurance	We will: list factors that determine auto insurance premiums.
	I will: describe the main types of auto insurance policies and compare state requirements.
Lesson Frame: Health Insurance	We will: investigate the requirements for health insurance coverage.
	I will: understand the benefits of employer-sponsored health insurance.
Lesson Frame: Financial Impact of Insurance	We will: analyze the factors that influence the cost of renters insurance.
	I will: understand the financial trade off between premiums and deductibles.
Performance Tasks: Diagnostic exams, midterm and final exam, unit tests, projects, exit tickets and final project.	Notes: Fill out an auto accident report and diagram.

Unit: **Budgeting**	**Length:** 2 weeks
Standards: Spending & Saving: 1a, 1d, 1b; Employment & Income: 3c; Financial Decision Making: 8b, 6c, 6f, 5a, 8a; Risk Management & Insurance: 1c, 2b	**Outcomes:** Preparing a budget for students needs is becoming more of a priority in our economy. This unit provides the basic knowledge and skill for students to continue their lives after high school and become independent adults. This unit focuses on the basic budgeting and how to manage expenses.
Essential Questions: Imagine yourself as a recent college graduate who has just secured a full time job. How do you think your spending as a college grad will compare with your current spending as a teen? What are the first three steps you would take to create a budget for yourself? What top three criteria would you use to evaluate if the apartment is/is not a good fit for you? How can Facebook make you poorer?	**Learning Targets:** Students will be able to: Track and evaluate a sample student's current spending habits and expenses. Determine what the student's priorities and financial goals are. Explain how a budget can help the student achieve their financial goals. Create a plan that outlines next steps for the student to take. Explain the difference between gross income and net income. Understand the importance of using net income when budgeting. Discuss the 50-20-30 rule and other budgeting strategies to use when creating a budget and to save money. Create a salary-based budget. Explain what "cost of living" means and why it changes depending on location. Identify important factors to consider when deciding where to live. Select a city to live in based on their financial situation, values, and other personal preferences. Understand the initial, recurring, and potential other costs that come with owning a car. Identify alternatives to car ownership and the costs associated with these options. Determine whether they need a car based on their transportation needs and wants. Describe common budgetary mistakes to avoid. Explain the difference between budgetary needs and wants and how these change from person to person. Describe strategies to use when trying to determine a need from a want. Assess their own values in order to create a monthly budget for their discretionary spending.
Topic: **Budgeting**	**Length:** 2 weeks
Standards: Spending & Saving: 1a, 1d, 1b; Employment & Income: 3c; Financial Decision Making: 8b, 6c, 6f, 5a, 8a; Risk Management & Insurance: 1c, 2b	**Academic Vocabulary:** budget, net worth, net income, cost of living, rental agreement
Lesson Frame: Case Study: How Do I Budget	We will: use a plan to manage spending and achieve financial goals.
	I will: track current spending habits and expenses.
Lesson Frame: Budgeting 101	We will: investigate changes in personal spending behavior that contribute to wealth building.
	I will: create a plan that outlines next steps for the student to take.
Lesson Frame: How to Create a Budget	We will: create a cash flow statement to illustrate cash inflows and outflows.
	I will: explain the difference between gross income and net income.
Lesson Frame: The Cost of Living	We will: investigate the cost of living.
	I will: select a city to live based on their financial situation.
Lesson Frame: Renting an Apartment	We will: summarize terms of a renters policy.
	I will: identify what steps they need to take to find and rent an apartment.
Lesson Frame: Budgeting with Roommates	We will: assess the value of shared financial responsibilities with a roommate.
	I will: create a budget that is tailored to different roommates needs and preferences.

Lesson Frame: Budgeting for Transportation	We will: list factors that determine auto insurance premiums and the factors that cause them to change.
	I will: identify alternatives to car ownership and the costs associated with these options.
Lesson Frame: Budgeting for Food	We will: plan to manage spending.
	I will: plan a food budget that takes both groceries and dining out into consideration.
Lesson Frame: Needs vs. Wants	We will: describe common budgetary mistakes to avoid.
	I will: explain the difference between wants and needs.
Performance Tasks: Diagnostic exams, midterm and final exam, unit tests, projects, exit tickets and final project.	Notes: use Budgeting Cashcabulary Quizlet

Course Name:	**Business and Personal Law**		
Credits:	0.5		
Prerequisites:	NA		
Description:	Students study the underlying legal concepts that personal and business law are based on to understand the importance of the law in general.		
Academic Standards:	Business Law and Ethics (BLE 1-6.c) WI Business & IT standards book; https://dpi.wi.gov/bit/standards		
Units:	**Unit Length:**	**Unit Standards:**	**Unit Outcomes:**
What is Law	4 weeks	Social Responsibility	Students will learn about morals and ethics and how are they applied to our legal system. Students will identify different kinds of laws and crimes. About the relationship between ethics and the law, and the structure of the court system in the United States. Ethics are the rules we use to distinguish right from wrong and guide our behavior.
Consumer Contracts	2 weeks	Sales & Consumer Law	This unit gives students the basic elements found in an offer and acceptance. Given a case study the students will analyze the case to determine if an acceptance occurred and explain why the contract is legal or not. General agreements will be examined and how they apply to real life. Elements of contracts are identified and who becomes a party. How contracts come to an end or are ended are also determined.
Consumer Law	3 weeks	Legal Process	Students will consider what an offer and acceptance are and what they are not. Students will research on how we are protected under our consumer laws. Contracts can be voided or voidable, students will examine the details in the difference and when it can happen.
Mock Trial	2-3 weeks	Legal Process	Students will practice trial proceedings in a classroom set up court. The mission of the Wisconsin High School Mock Trial Program is to foster understanding and respect for the legal system and the rule of law.
Forms of Business organizations	1 week	Types of Ownership	How businesses form and start are the focus of this unit. Students will examine how a sole proprietorship and a corporation are different. Students will define different forms of business that can be created in our economic system.
Employment Laws	1 week	Employment	Students will understand what laws protect our employment. A general understanding of employment laws and how they affect their positions.

Unit Name: **What is Law?**	**Length:** 4 weeks
Standards: Social Responsibility: BLE5.a & b & c & e & BLE 1.a	**Outcomes:** Students will learn about morals and ethics and how are they applied to our legal system. Students will identify different kinds of laws and crimes. About the relationship between ethics and the law, and the structure of the court system in the United States. Ethics are the rules we use to distinguish right from wrong and guide our behavior.
Essential Questions: What protection does the Constitution provide to US citizens? Why are ethics important in business decisions and law? What is strict liability? What are the elements of negligence? What is negligence?	**Learning Targets** Explain how ethical decisions are made. Identify the different ethical character traits. Describe how the law relates to ethics. Explain the importance of the law. Identify the parts of the Constitution. Explain the components of common law. Explain the purposes of statutory law. Identify the ways that the courts make law. Explain the differences between categories of crime. Distinguish federal from state criminal law. Describe the elements of a crime. Determine several defenses to criminal acts. Explain the differences between penalties for committing felonies and misdemeanors. Explain the differences between categories of crime. Distinguish federal from state criminal law. Describe the elements of a crime. Determine several defenses to criminal acts. Explain the differences between penalties for committing felonies and misdemeanors. Describe the different categories of crime. Identify several special crimes that involve the use of motor vehicles. Define different types of business crimes, such as arson, forgery, and embezzlement. Define negligence. Explain the concepts of the reasonable person test and proximate cause. Explain the concept of strict liability. Compare and contrast negligence, strict liability, and proximate cause. Distinguish between a tort and a crime. Differentiate between and give examples of negligence and intentional torts. Explain a person's rights and duties in relation to tort law. Describe remedies available in tort law. List the main intentional torts against people and property.
Topic 1: **Foundations of Law**	**Length:** 1 week
Standard(s): BLE5.a & b & c & e	**Academic Vocabulary:** empathy, prevalent, mediator, jeopardy
Lesson Frame: What are ethical decisions	We will: analyze what is a law.
	I will: understand the four ethical character traits.
Lesson Frame: What is common law	We will: explain why laws are necessary.
	I will: understand my legal rights and responsibilities.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:
Topic 2: **The Court System and Procedures**	**Length:** 1/2 week
Standard(s): BLE 1.a	**Academic Vocabulary:** appellate court, common law, statute, arraignment, jeopardy.
Lesson Frame: Crimes and Criminal Justice	We will: investigate what kind of court that a teenager might have to appear in if they commit an offense.
	I will: identify alternative dispute resolution techniques.
Lesson Frame: Types of Crimes	We Will: differentiate between civil and criminal cases.
	I will: list the steps in a criminal prosecution.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:

Topic 3: **Crimes and Criminal Justice**	**Length:** 1/2 week
Standard(s): BLE 5. a & b & c & e	**Academic Vocabulary:** intent, motive, impulse, larceny, robbery, murder
Lesson Frame: Crimes and Criminal Justice	We will: define entrapment.
	I will: determine several defenses to criminal acts.
Lesson Frame: Types of Crimes	We will: examine how the federal government keeps up with changing American society.
	I will: examine changes in society that law should keep up with.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:
Topic 4: **Types of Crimes**	**Length:** 1 week
Standard(s): BLE5.a & b & c & e	**Academic Vocabulary:** defendant, plaintiff, prosecutor, infraction
Lesson Frame: Crimes and Criminal Justice	We will: examine property crimes.
	I will: define different types of business crimes.
Lesson Frame: Types of Crimes	We will: look at the differences between assault and battery.
	I will: look at hot issues in our current society that affect crime.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:
Topic 5: **Definition of a Tort**	**Length:** 1 week
Standard(s): BLE5.a & b & c & e	**Academic Vocabulary:** negligence, assumption of risk, compensate, distress, foreseeable
Lesson Frame: Torts and Crimes	We will: identify elements of a tort.
	I will: understand the history and necessity of tort law.
Lesson Frame: Negligence and Intentional Torts	We will: be able to prove negligence.
	I will: define a misdemeanor and a felony.
Lesson Frame: Legal Options	We will: list the main intentional torts against people and property.
	I will: discuss a case study involving an intentional tort.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:
Topic 6: **Negligence and Liability**	**Length:** 1 week
Standard(s): BLE5.a & b & c & e	**Academic Vocabulary:** vandalism, burglary, larceny, robbery, intent, motive

Lesson Frame: Rationality and Fairness	We will: differentiate between negligence and strict liability.
	I will: give examples of strict liability.
Lesson Frame: Realistic and Impartial	We will: explain the concepts of reasonable person test and proximate cause.
	I will: compare negligence with strict liability.
Lesson Frame: Reasonably Anticipated	We will: discuss if the injured party is required to prove negligence.
	I will: discuss a case study involving a negligence.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:

Unit Name: **Consumer Contracts**	**Length:** 2 weeks
Standards: Sales and consumer law	**Outcomes:** This unit gives students the basic elements found in an offer and acceptance. Given a case study the students will analyze the case to determine if an acceptance occurred and explain why the contract is legal or not. General agreements will be examined and how they apply to real life. Elements of contracts are identified and who becomes a party. How contracts come to an end or are ended are also determined.
Essential Questions: What are the differences among valid, void, and voidable contracts? What are the differences between express and implied contracts? What is a unilateral contract? What are the requirements of an offer? What are the requirements of an acceptance? When is an offer terminated? How are most contracts discharged? What is substantial performance? What is breach of contract?	**Learning Targets:** Explain the nature and importance of contracts. Identify the elements of a valid contract. Analyze the different classes of contract. Differentiate between express and implied contracts, unilateral and bilateral contracts, and oral and written contracts. Explain the requirements of a valid offer. Recognize the requirements of an acceptance. Distinguish between an offer, an invitation to negotiate, an acceptance, and a counteroffer. Explain how offers are terminated. Assess contractual capacity. Explain the Statute of Frauds and the parol evidence rule. List minors' contractual rights and responsibilities. Define legality and illegality. Explain how and when contracts can be discharged. Analyze the concept of performance. Describe the rules that apply to transfer of rights and duties. Understand the difference between delegation and assignment.
Topic 1:**What is a contract?**	**Length:** 1 week
Standard(s): BLE5.a & b & c & e	**Academic Vocabulary:** Capacity, Consideration, Legality, Offer, Acceptance, Genuine agreement
Lesson Frame: Identify Federal statutes and objectives	We will: Identify unfair trade practices.
	I will: explain the importance of contracts.
Lesson Frame: Identify Federal Agencies and areas of protection	We will: Distinguish between an offer, an invitation to negotiate, acceptance and a counteroffer.
	I will: Identify mislabeling goods.
Lesson Frame: How government promotes consumer protection	We will: Explain the requirements of a valid contract.
	I will: discuss remedies for injured consumers.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:
Topic 2: **Elements of a Contract**	**Length:** 1 week
Standard(s): BLE5.a & b & c & e	**Academic Vocabulary:** assumption, usury, dispensing, capacity, minor, majority, emancipated

Lesson Frame: Define When an Offer Has Been Made	We will: define offer.
	I will: assess contractual capacity.
Lesson Frame: Classify contracts	We will: identify parties to a contract.
	I will: list minor's contractual rights and responsibilities.
Lesson Frame: Consideration	We will: give examples to mutual consideration.
	I will: list exceptions to consideration.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:
Topic 3: **How Contracts Come to an End**	**Length:** 1 week
Standard(s): BLE5.a & b & c & e	**Academic Vocabulary:** substituted, expire, affected, tender, delegation, breach, discharge
Lesson Frame: Transferring and Ending Contracts	We will: explain how contracts can be discharged.
	I will: analyze the concept of performance.
Lesson Frame: Voidable Contracts and Remedies	We will: describe the rules that apply to transfers of rights and duties.
	I will: define breach of contract.
	We will: understand the difference between delegation and assignment.
	I will: differentiate among the ways contracts can be undermined.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:

Unit Name: **Consumer Law**	**Length:** 2 weeks
Standards: UCC Consumer Protection (BLE3.a & b)	**Outcomes:** Students will consider what an offer and acceptance are and what they are not. Students will research on how we are protected under our consumer laws. Contracts can be voided or voidable, students will examine the details in the difference and when it can happen.
Essential Questions: To what kinds of transactions does the law of sales apply? When must sales contracts be in writing? What are the exceptions? When do title and risk of loss pass from the seller to the buyer in a delivery contract? What is the warranty of title? What are the three ways an express warranty can be made? What is the cooling-off rule?	**Learning Targets:** Students will be able to: Explain the Uniform Commercial Code. Compare and contrast service contracts and contracts for the sale of goods. Explain when title and risk of loss pass in a sale of goods. List the remedies of the buyer and seller when a sales contract is breached. Distinguish different types of consumer fraud. Describe laws and agencies that protect consumers. Identify various types of warranties. Describe how warranties may be excluded or modified. Determine where to get consumer protection assistance.
Topic 1: **Consumer Law and Contracts**	**Length:** 1 week
Standard(s): BLE3.a & b	**Academic Vocabulary:** uniform, dominant, revoke, UCC, firm offer, title, bill of sale, risk of loss
Lesson Frame: Sales contracts	We will: discuss receiving damaged goods on how to remedy the situation.
	I will: list remedies of the buyer and seller when a sales contract is breached.
Lesson Frame: Consumer Protection	We will: discuss the "buyer beware" quote and how it applies to our purchases.
	I will: identify various types of warranties.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:
Topic 2: **Personal Property**	**Length:** 1 week
Standard(s): BLE3.a & b	**Academic Vocabulary:** disclose, option, exclude, warranty, express warranty, implied warranty
Lesson Frame: Types of Property	We will: discuss the rules that apply to a sale made at another location other than the main business.
	I will: explain the concept of intellectual property.
Lesson Frame: Bailments	We will: define bailment.
	I will: discuss the standard care of bailees must use.
	We will: define a hotel keepers liability

	I will: identify a common carrier's liability of loss or damaged goods.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:

Unit Name: **Mock Trial**	**Length:** 2-3 weeks
Standards: Legal Process: BLE1.b & c We will be following the State Bar of Wisconsin's mock trial competition set up on: https://www.wisbar.org/mock_trial/Pages/Teams.aspx	**Outcomes:** Students will practice trial proceedings in a classroom set up court. The mission of the Wisconsin High School Mock Trial Program is to foster understanding and respect for the legal system and the rule of law.
Essential Questions: Who controls our local courts? How do our local courts run? Who do I contact if I have a legal issue? What can I expect when I attend a courtroom proceeding?	**Learning Targets:** Goals of mock trial (a) To promote greater understanding and appreciation for the law, court procedures, and the American judicial system; (b) To improve basic life skills, such as critical thinking, communication, and advocacy skills; (c) To improve communication and cooperation among community members, including students, teachers, government leaders, law professionals and citizens; (d) To heighten appreciation for the principle of equal justice for all; (e) To promote an awareness of current legal issues; (f) To promote the exchange of ideas among students from throughout Wisconsin while providing a fun, rewarding and memorable experience of interaction; (g) To foster teamwork, collaboration, and cooperation among young people of diverse interests and abilities.
Topic 1: **Preparing for Trial**	**Length:** 1 week
Standard(s): Legal Process: BLE1.b & c	**Academic Vocabulary:** evidence, witness, attorney, judge, bailiff, court reporter
Lesson Frame: Analyze and Prepare for Case	We will: be courteous to witnesses, attorneys and judges.
	I will: rise when addressing the judge.
Lesson Frame: Analyze and Prepare for Case	We will: direct all remarks to the judge or witness.
	I will: limit the amount of objections.
Performance Tasks: Prepare witnesses, write out case points for presentation, dress appropriately, prepare short questions	Notes: Make posters for rules of the court for ease of following
Topic 2: **Trial**	**Length:** 1-2 weeks
Standard(s): Legal Process: BLE1.b & c	**Academic Vocabulary:** plaintiff, defense, cross-examination, closing arguments, proof, affidavit, presumption of innocence
Lesson Frame: Opening and Closing of Trial	We will: prepare judge for the case.
	I will: present an opening statement.

Lesson Frame: Opening and Closing of Trial	We will: examine all witnesses.
	I will: correctly question the witness.
Lesson Frame: Opening and Closing of Trial	We will: prepare a timekeeper so the daily trial does not go over the time limit.
	I will: use a stopwatch and notify both sides everyday when starting and stopping.
Performance Tasks: Writing case notes, preparing closing arguments, write out cross-examinations, prepare visual aids	Notes: We will also follow the mock trial competition in Madison that involves this case.

Unit Name: **Forms of Business Organizations**	**Length:** 1 week
Standards: Types of Ownership (BLE2.a & b)	**Outcomes:** How businesses form and start are the focus of this unit. Students will examine how a sole proprietorship and a corporation are different. Students will define different forms of business that can be created in our economic system.
Essential Questions: What are the three advantages of a sole proprietorship? What are the two essential elements of a partnership? How is a limited partner different from all the other types of partners? What does “perpetual existence” refer to? What is the difference between a C corporation and an S corporation?	**Learning Targets:** Describe how to form and run a sole proprietorship. List the advantages and disadvantages of a sole proprietorship. Explain the rights and responsibilities of partners. Identify the different types of partners. Explain how a partnership can be terminated. Characterize corporations. Explain the different types of corporations. Discuss the steps involved in forming a corporation. Explain what a limited liability company is. List the steps in forming a limited liability company.
Topic 1: **Sole Proprietorships and Partnerships**	**Length:** 1 week
Standard(s): BLE2.a & b	**Academic Vocabulary:** perpetual, dormant, incompetence, partnership, joint liability, dissociation
Lesson Frame: Sole Proprietorships and Partnerships	We will: discuss the basic attributes of the sole proprietorship and partnership.
	I will: explain the rights and responsibilities of partners.
Lesson Frame: Corporations and LLC's	We will: determine which one form of organization may be best in a particular situation.
	I will: characterize corporations.
	We will: explain the risks of utilizing each form of business organization.
	I will: list the steps in forming a limited liability company.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes:

Unit Name: **Employment Law**	**Length:** 1 week
Standards: Employment (BLE 2.c, BLE 6.c)	**Outcomes:** Students will understand what laws protect our employment. A general understanding of employment laws and how they affect their positions.
Essential Questions: What is the general rule of employment that guides hiring and firing in the U.S.? What is the equal pay rule? What law bans discrimination based on age?	**Learning Targets:** Discuss the employer-employee relationship. Define employment-at-will. Name the exceptions to employment-at-will. Explain the collective bargaining process. Describe the laws that regulate labor unions. Explain how the law protects employee health and safety. Describe the laws that guarantee fair wages and benefits. Identify the laws that prohibit different forms of discrimination. Define disparate treatment and disparate impact.
Topic 1: **Employment Law**	**Length:** 1 week
Standard(s): BLE2.c & BLE6.c	**Academic Vocabulary:** employment at-will, disparate treatment, disparate impact, union, collective bargaining
Lesson Frame: Employment Agreements	We will: identify an employment agreement.
	I will: describe how terms in employment contracts are created.
Lesson Frame: Employee Rights	We will: recognize when an employer is responsible for acts of an employee.
	I will: describe the laws that guarantee fair wages and benefits.
	We will: discuss what an implied contract means.
	I will: explain situations where an implied contract might exist.
Performance Tasks: Case study, discussion, articles, writing activity, self-check, chapter questions	Notes: We will debate employment policies.

Budget 2019-20

STAFF AND PROGRAM CHANGES

Enrollment - FTE

	2015	2016	2017	
Summer FTE:	22	20	21	
% (40,40,40)	9	8	8	**2017-18**
Sept FTE:	728	755	721	**3-year Avg**
Total FTE:	**737**	**763**	**729**	**743**

	2016	2017	2018	
Summer FTE:	20	21	18	
% (40,40,40)	8	8	7	**2018-19**
Sept FTE:	755	721	701	**3-year Avg**
Total FTE:	**763**	**729**	**708**	**733**

	2017	2018	2019	
Summer FTE:	21	18	18	
% (40,40,40)	8	7	7	**2019-20**
Sept FTE:	721	699	680	**3-year Avg**
Total FTE:	**729**	**706**	**687**	**707**

Enrollment - Students

	2018-19	2017-18	2016-17	2015-16	2014-15	2013-14	2012-13
Manawa Elementary	301	331	368	355	377	381	405
Little Wolf Jr./Sr. High	338	339	335	331	313	324	320
Total Number of Students Attending SDM	639	670	703	686	690	705	725

	2019-20	2020-21	2021-22	2022-23
Manawa Elementary	301	308	294	311
Little Wolf Jr./Sr. High	319	315	309	299
Total Estimated Number of Students	620	623	603	610

Fund 10 - General Fund - Projection Summary

	BUDGET	REVENUE & EXPENDITURE PROJECTIONS				
	FY - 2019	FY - 2020	FY - 2021	FY - 2022	FY - 2023	FY - 2024
REVENUE						
Local Sources	$3,419,286	$3,240,858	$2,856,909	$2,886,291	$2,996,462	$3,009,386
State Sources	$5,441,086	$5,171,517	$4,919,676	$4,746,444	$4,430,883	$4,235,099
Federal Sources	$125,948	$125,948	$125,948	$125,948	$125,948	$125,948
Other	$310,890	$257,087	$260,387	$263,687	$266,987	$270,287
TOTAL REVENUE	$9,297,210	$8,795,410	$8,162,920	$8,022,370	$7,820,280	$7,640,720
EXPENDITURES						
Salary and Benefits	$5,152,791	$5,283,888	$5,385,020	$5,492,464	$5,601,381	$5,711,816
Other Objects	$4,144,419	$3,671,420	$3,333,017	$3,361,301	$3,389,666	$3,418,272
TOTAL EXPENDITURES	$9,297,210	$8,955,308	$8,718,037	$8,853,765	$8,991,047	$9,130,088
SURPLUS / DEFICIT	$0	($159,898)	($555,117)	($831,395)	($1,170,767)	($1,489,368)
Change over Previous Year		($159,898)	($395,219)	($276,278)	($339,372)	($318,601)
BEGINNING FUND BALANCE	$1,880,383	$1,880,383	$1,720,486	$1,165,369	$333,974	($836,793)
ENDING FUND BALANCE	$1,880,383	$1,720,486	$1,165,369	$333,974	($836,793)	($2,326,160)
FUND BALANCE AS % OF EXPENDITURES	20.23%	19.21%	13.37%	3.77%	-9.31%	-25.48%

Staff & Program Change Proposal

- https://docs.google.com/spreadsheets/d/13ZYYz5CLeOR13Bavu9MnnjdidV2dUu4lcapmwjFlaz8/edit?usp=sharing

Staff or Program Change	Addition to Expenditures/ Increased Costs	Reduction in Expenditures/ Cost Savings	Rationale
Teacher Salary Advancement Model	$62,997.00		Includes current personnel increases and placement into Salary Advancement Model
Wage adjustments for other employee groups	$31,853.00		CPI is at 2.44% (was 2.13% last year)
Health Insurance	$50,000.00		10% limit increase; 2% $20,632.48, 5% $51,581.20, 10% $103,162.39
Health Insurance deductible		$10,600.00	Raise out-of-pocket deductibles to $400 single and $800 family. This money can be FLEXed for a 30% savings.
Dental Insurance	$2,000.00		Trends at 2-3%, last year 0%: 2% $1599.20, 3% $2,398.80
Vision Insurance	$150.00		Was 0% last year: 2% $142.62, 3% 213.93
SS, Medicare, Retirement, LTD, Life Ins.	$13,000.00		SS 6.2% income, Medicare 1.45% income, Retirement - District pays 6.55% of income, LTD and Life premiums are age and wage dependent
District Office Support		$10,000.00	2 hours per morning that the Food Service Manager formerly assisted in district office came out of Fund 10. Now, 100% of the salary will come out of Fund 50. Fund 50 is for food service and is self-sustaining.
Reduce CESA #6 Special Education/Curriculum Director Contract		$13,319.00	From 260 days to 220 days
Extended contract for Reading Specialist	$6,400.00		Admin Contract (188 days to 260 days)
Reconfigure secondary special education para position to less than 30 hours a week		$24,088.00	ACA adjustments were done across the district several years ago for all other 9-month para positions; equity adjustment
Eliminate Business Ed.		$69,781.00	Low student enrollment in business classes; see added memo
Kobussen Bus Route Analysis		$50,000.00	Less one route saves $50,000
Increase HS Yearbook Stipend	$185.00		Increase from $315 to $500 & run during RtI time
Add Elementary Yearbook Stipend	$315.00		No compensation is currently offered for this position
Add Elementary Student Council Stipend	$300.00		No compensation is currently offered for this position (can be one employee or a job share)
Powerlifting Advisor Stipend	$300.00		Newly approved program for students - Pilot 2018-2019
Cuts to building/department budgets		$24,000.00	Budgets were cut (Athletic, Building, Curriculum, Special Ed, Technology)
Revenue for use of available seats in Paving the Way by other districts	?		This line item is being researched; a per student cost needs to be established; the opportunity needs to be marketed
Increase 66.03 agreement with Iola	?		Iola does transportation at no cost to SDM; increase fee for services rendered
Total Additions	$167,500.00		
Total Reductions		$201,788.00	
		-$34,288.00	District-wide Contingency for Emergencies (ex. generator failure)/Unforeseen Needs (ex. placement tuition in alternative school)

MANAWA

Students choosing to excel; realizing their strengths.

To: Dr. Melanie Oppor, Board of Education
From: Carmen O'Brien
cc:
Date: February 13, 2019
Re: Support Staff Handbook language change

Recommendation

I recommend that the Board of Education amend the Support Staff handbook language for February 12, 2019 and for the remainder of the 2018-19 school year to eliminate the use of Sick time for inclement weather days for support staff. PTO will remain available for any purpose. The change to the Support Staff handbook, p. 11, 2nd paragraph under Attendance shall be amended to the following:

> "On days when school is cancelled due to inclement weather, Part-time staff does not report and may use PTO or not be paid as noted on timecards. Full-time staff will notify their supervisor and together will decide if they will report or if adjustments will be made to the regular schedule. Supervisors may authorize the use of Vacation or Compensatory Time as noted on timecards. Leave Without Pay for Full-time staff shall be authorized by the District Administrator."

Rationale

Currently, the Support Staff handbook, p. 11, 2nd paragraph under Attendance, reads:

> On days when school is cancelled due to inclement weather, Part-time staff does not report and will either use PTO/Sick time or will not be paid as noted on timecards. Full-time staff will notify their supervisor and together will decide if they will report or if adjustments will be made to the regular schedule. Supervisors may authorize the use of Vacation, PTO/Sick time, or Compensatory Time as noted on timecards. Leave Without Pay for Full-time staff shall be authorized by the District Administrator.

Money is budgeted to pay a part-time support staff member for all student days plus one work day before school starts and for the staff celebration time at the end of the school year. When PTO/Sick time is used for a day when students are not in school, that day is paid and the amount of available salary money is reduced. This is not a budget problem if the school cancelation is not "made-up." An employee could use time earned as a benefit so that they will not lose any wage.

Using Sick time becomes a budget problem if the inclement weather day is to be "made-up." If it is decided that additional time or school days will be added to the school calendar and the salary budget money has been consumed, there is no any extra money to pay staff for those additional days. Students would come to school to make-up the inclement weather day and the part-time support staff would not be available to work because they had already been paid for that day.

There have also been requests to work missed time now. This situation leads to the same problem outlined above. The support staff salary budget money would be spent now and not available for the "make-up" days.

I am recommending elimination of the use of Sick time for both full and part-time support staff to maintain equity. This is the current practice for full-time administrators, the only other employee group that works year-round.

Currently, the District has used 6 snow days. This is an unprecedented occurrence that is hopefully an anomaly. Due to these extreme circumstances, a plan will be received by the Board that includes making up some of the missed school time. Therefore, in order to keep support staff available to students and the budget balanced, I am making the above recommendation.