

Fourth Grade Curriculum

Theme: Energy, Circuits, and Engineering Challenges

Duration: 3 Months (Approximately 12 weeks)

Curriculum Overview

- **Unit 1: Energy Forms and Transfer** (Weeks 1–4)
 - **Unit 2: Building Circuits** (Weeks 5–8)
 - **Unit 3: Mechanical Engineering** (Weeks 9–12)
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Unit 1: Energy Forms and Transfer

Duration: 4 Weeks

Unit Objectives

- Identify different forms of energy: kinetic, potential, thermal, electrical, sound, and light.
- Understand how energy can be transferred and transformed from one form to another.
- Conduct experiments demonstrating energy transfer and conservation.
- Develop skills in observation, data collection, and analysis.
- Enhance collaborative and communication skills through group activities.

Week 1: Introduction to Energy

Lesson 1: What Is Energy?

- **Duration:** 60 minutes
- **Activities:**
 - **Interactive Presentation:**
 - Introduce the concept of energy as the ability to do work or cause change.
 - Discuss how energy is present in various forms all around us.
 - **Brainstorming Session:**
 - Students list examples of energy use in daily life (e.g., riding a bike, cooking).
 - **Energy Collage:**
 - Create a visual collage of images representing different forms of energy.
- **Assessment:**
 - Participation in discussions.

- Completion and creativity of the energy collage.

Lesson 2: Kinetic and Potential Energy

- **Duration:** 60 minutes
- **Activities:**
 - **Demonstrations:**
 - Use a pendulum or swinging ball to show potential and kinetic energy.
 - Drop a ball from different heights to observe energy conversion.
 - **Hands-On Activity:**
 - Build simple rubber band-powered cars to explore stored (potential) and motion (kinetic) energy.
 - **Discussion:**
 - Discuss situations where energy changes from potential to kinetic and vice versa.
- **Assessment:**
 - Ability to explain the difference between kinetic and potential energy.
 - Observation of student engagement and participation.

Lesson 3: Energy Transformation

- **Duration:** 60 minutes
- **Activities:**
 - **Interactive Lesson:**
 - Introduce the concept of energy transformation (e.g., electrical energy transforming into light energy).
 - **Energy Transformation Stations:**
 - Rotate through stations demonstrating different energy transformations (e.g., battery-powered flashlight, wind-up toys).
 - **Recording Observations:**
 - Students fill out worksheets noting the energy transformations at each station.
- **Assessment:**
 - Accuracy of recorded observations.
 - Participation in station activities.

Lesson 4: Conservation of Energy

- **Duration:** 60 minutes
- **Activities:**
 - **Discussion:**
 - Introduce the Law of Conservation of Energy: energy cannot be created or destroyed, only transformed.
 - **Experiment:**
 - Use a Newton's cradle to demonstrate energy conservation.
 - **Group Activity:**
 - In groups, create posters explaining the conservation of energy with examples.

- **Assessment:**
 - Understanding demonstrated in group posters.
 - Ability to explain concepts in their own words.

Week 2: Thermal Energy and Heat Transfer

Lesson 5: Understanding Thermal Energy

- **Duration:** 60 minutes
- **Activities:**
 - **Interactive Presentation:**
 - Explain thermal energy as the total kinetic energy of particles in a substance.
 - **Heat vs. Temperature:**
 - Discuss the difference between heat (energy transfer) and temperature (measure of kinetic energy).
 - **Thermometer Exploration:**
 - Teach students how to use thermometers accurately.
- **Assessment:**
 - Participation in discussions.
 - Correct use of thermometers in activities.

Lesson 6: Methods of Heat Transfer

- **Duration:** 60 minutes
- **Activities:**
 - **Demonstration:**
 - Show conduction by heating one end of a metal rod.
 - Demonstrate convection using colored warm water in cold water.
 - Explain radiation with a heat lamp warming objects.
 - **Experiment:**
 - Students perform simple experiments to observe conduction, convection, and radiation.
 - **Data Recording:**
 - Fill out a chart comparing the three methods of heat transfer.
- **Assessment:**
 - Accurate data recording.
 - Ability to distinguish between conduction, convection, and radiation.

Lesson 7: Insulation Investigation

- **Duration:** 60 minutes
- **Activities:**
 - **Experiment:**
 - Test different materials (e.g., cotton, foil, plastic) to see which is the best insulator.

- **Hypothesis Formation:**
 - Students predict which material will keep water warm the longest.
- **Data Collection:**
 - Measure temperature changes over time with each material.
- **Assessment:**
 - Thoughtfulness of hypotheses.
 - Accuracy in data collection and analysis.

Lesson 8: Thermal Energy in Everyday Life

- **Duration:** 60 minutes
- **Activities:**
 - **Class Discussion:**
 - Explore how thermal energy is used in cooking, heating homes, etc.
 - **Real-World Applications:**
 - Discuss insulation in buildings and clothing.
 - **Creative Writing:**
 - Write a short story or diary entry from the perspective of a particle experiencing heat transfer.
- **Assessment:**
 - Engagement in discussions.
 - Creativity and understanding shown in writing.

Week 3: Electrical and Sound Energy

Lesson 9: Introduction to Electrical Energy

- **Duration:** 60 minutes
- **Activities:**
 - **Interactive Lesson:**
 - Explain electrical energy as the movement of electrons.
 - **Static Electricity Demonstration:**
 - Use balloons and wool to show static electricity.
 - **Safety Discussion:**
 - Emphasize safety when dealing with electricity.
- **Assessment:**
 - Participation in demonstrations.
 - Completion of an electrical safety quiz.

Lesson 10: Exploring Simple Circuits

- **Duration:** 60 minutes
- **Activities:**
 - **Hands-On Activity:**
 - Build simple circuits using batteries, wires, and bulbs.

- **Circuit Diagrams:**
 - Introduce symbols and have students draw diagrams of their circuits.
- **Experimentation:**
 - Test what happens when the circuit is open or closed.
- **Assessment:**
 - Successful construction of circuits.
 - Correctness of circuit diagrams.

Lesson 11: Understanding Sound Energy

- **Duration:** 60 minutes
- **Activities:**
 - **Interactive Presentation:**
 - Discuss sound as energy that travels in waves due to vibrations.
 - **Vibration Experiments:**
 - Use tuning forks, rubber bands, and drums to observe vibrations.
 - **Sound Travel Exploration:**
 - Experiment with how sound travels through solids, liquids, and gases.
- **Assessment:**
 - Engagement in experiments.
 - Ability to explain how sound is produced and travels.

Lesson 12: Pitch and Volume Investigation

- **Duration:** 60 minutes
- **Activities:**
 - **Experiment:**
 - Create straw oboes or water xylophones to explore pitch.
 - **Data Recording:**
 - Note how changes in length or water level affect pitch.
 - **Discussion:**
 - Explain the relationship between vibration frequency and pitch.
- **Assessment:**
 - Accuracy of observations.
 - Understanding of pitch and volume concepts.

Week 4: Light Energy and Culminating Activities

Lesson 13: Exploring Light Energy

- **Duration:** 60 minutes
- **Activities:**
 - **Interactive Lesson:**
 - Discuss light as a form of energy that travels in waves.
 - **Prism Experiment:**

- Use prisms to split white light into the color spectrum.
 - **Reflection and Refraction:**
 - Explore how light behaves when it hits different surfaces.
- **Assessment:**
 - Participation in experiments.
 - Ability to explain observations.

Lesson 14: Energy Transfer Projects

- **Duration:** Multiple sessions totaling 120 minutes
- **Activities:**
 - **Group Project:**
 - Design and build a device that demonstrates energy transfer (e.g., a simple Rube Goldberg machine, solar oven).
 - **Planning:**
 - Students use the engineering design process to plan their projects.
 - **Construction:**
 - Gather materials and build the device.
- **Assessment:**
 - Creativity and functionality of the device.
 - Teamwork and collaboration.

Lesson 15: Presentations and Demonstrations

- **Duration:** 60 minutes
- **Activities:**
 - **Group Presentations:**
 - Each group presents their energy transfer project to the class.
 - **Explanation:**
 - Discuss the forms of energy involved and how they are transferred.
 - **Peer Review:**
 - Provide constructive feedback to classmates.
- **Assessment:**
 - Clarity and confidence in presentations.
 - Depth of understanding demonstrated.

Lesson 16: Unit Review and Assessment

- **Duration:** 60 minutes
- **Activities:**
 - **Review Game:**
 - Play an energy-themed Jeopardy or quiz game to review key concepts.
 - **Unit Test:**
 - Assess knowledge through a written test covering all topics.
- **Assessment:**

- Performance in the review game.
- Results of the unit test.

Ongoing Assessments Throughout Unit

- **Science Journals:** Regular entries documenting experiments, observations, and reflections.
- **Participation:** Engagement in class discussions, activities, and group work.
- **Quizzes:** Periodic assessments to gauge understanding of specific concepts.

Standards Alignment

- **NGSS 4-PS3-1:** Use evidence to construct an explanation relating the speed of an object to the energy of that object.
 - **NGSS 4-PS3-2:** Make observations to provide evidence that energy can be transferred from place to place.
 - **NGSS 4-PS3-4:** Apply scientific ideas to design, test, and refine a device that converts energy.
 - **CCSS.ELA-LITERACY.SL.4.4:** Report on a topic or text, tell a story, or recount an experience in an organized manner.
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Unit 2: Building Circuits

Duration: 4 Weeks

Unit Objectives

- Understand the basics of electrical circuits, including components like batteries, wires, bulbs, and switches.
- Build and differentiate between series and parallel circuits.
- Learn about conductors and insulators and their roles in circuits.
- Develop problem-solving and critical-thinking skills through troubleshooting circuits.
- Emphasize safety practices when working with electricity.

Week 5: Introduction to Electricity and Circuits

Lesson 1: What Is Electricity?

- **Duration:** 60 minutes
- **Activities:**
 - **Interactive Lecture:**
 - Introduce electricity as the flow of electric charge (electrons).
 - Discuss the difference between static and current electricity.
 - **Static Electricity Demonstration:**

- Use a Van de Graaff generator or balloons to demonstrate static electricity.
- **Assessment:**
 - Participation in demonstrations.
 - Completion of a worksheet defining key terms.

Lesson 2: Components of a Circuit

- **Duration:** 60 minutes
- **Activities:**
 - **Hands-On Exploration:**
 - Introduce basic circuit components: batteries (power source), wires (conductors), bulbs (loads), and switches.
 - **Circuit Symbols:**
 - Teach standard symbols for circuit diagrams.
 - **Diagram Practice:**
 - Students draw and label circuit diagrams.
- **Assessment:**
 - Correct use of symbols in diagrams.
 - Understanding of component functions.

Lesson 3: Conductors and Insulators

- **Duration:** 60 minutes
- **Activities:**
 - **Experiment:**
 - Test various materials (metal, plastic, wood, rubber) to see if they conduct electricity.
 - **Data Recording:**
 - Create a chart classifying materials as conductors or insulators.
 - **Discussion:**
 - Discuss why certain materials conduct electricity while others do not.
- **Assessment:**
 - Accuracy in data recording.
 - Ability to explain findings.

Lesson 4: Building Simple Circuits

- **Duration:** 60 minutes
- **Activities:**
 - **Hands-On Activity:**
 - Construct simple circuits using batteries, wires, and bulbs.
 - **Troubleshooting:**
 - Experiment with open and closed circuits.
 - **Observation Recording:**
 - Note what happens when parts of the circuit are disconnected.

- **Assessment:**
 - Successful circuit construction.
 - Understanding of circuit continuity.

Week 6: Series and Parallel Circuits

Lesson 5: Series Circuits

- **Duration:** 60 minutes
- **Activities:**
 - **Explanation:**
 - Define series circuits where components are connected end-to-end.
 - **Building Activity:**
 - Construct series circuits with multiple bulbs.
 - **Observation:**
 - Note the brightness of bulbs and what happens if one bulb is removed.
- **Assessment:**
 - Correct construction of series circuits.
 - Ability to explain observations.

Lesson 6: Parallel Circuits

- **Duration:** 60 minutes
- **Activities:**
 - **Explanation:**
 - Define parallel circuits where components are connected across common points.
 - **Building Activity:**
 - Construct parallel circuits with multiple bulbs.
 - **Observation:**
 - Observe bulb brightness and the effect of removing a bulb.
- **Assessment:**
 - Correct construction of parallel circuits.
 - Understanding of how parallel circuits function.

Lesson 7: Comparing Series and Parallel Circuits

- **Duration:** 60 minutes
- **Activities:**
 - **Experiment:**
 - Build both types of circuits side by side for comparison.
 - **Data Recording:**
 - Create a Venn diagram or chart comparing characteristics.
 - **Discussion:**
 - Discuss advantages and disadvantages of each type.
- **Assessment:**

- Quality of comparisons.
- Participation in discussions.

Lesson 8: Circuit Challenges

- **Duration:** 60 minutes
- **Activities:**
 - **Problem-Solving Activity:**
 - Provide scenarios where students must design a circuit to meet specific requirements (e.g., control multiple lights independently).
 - **Group Work:**
 - Collaborate to create circuit diagrams and build the circuits.
- **Assessment:**
 - Creativity and functionality of designed circuits.
 - Teamwork and collaboration.

Week 7: Exploring More Circuit Components

Lesson 9: Switches and Control

- **Duration:** 60 minutes
- **Activities:**
 - **Introduction:**
 - Discuss how switches control the flow of electricity.
 - **Building Activity:**
 - Incorporate switches into existing circuits.
 - **Experimentation:**
 - Observe how different switch positions affect the circuit.
- **Assessment:**
 - Correct use of switches.
 - Understanding of circuit control.

Lesson 10: Resistors and Their Function

- **Duration:** 60 minutes
- **Activities:**
 - **Explanation:**
 - Introduce resistors and how they limit current.
 - **Demonstration:**
 - Show how resistors affect bulb brightness.
 - **Math Connection:**
 - Simple calculations related to resistance (Ohm's Law introduction at a basic level).
- **Assessment:**
 - Participation in demonstrations.

- Ability to explain the role of resistors.

Lesson 11: Electromagnets

- **Duration:** 60 minutes
- **Activities:**
 - **Experiment:**
 - Create an electromagnet using a nail, wire, and battery.
 - **Observation:**
 - Test the strength of the electromagnet by picking up paper clips.
 - **Discussion:**
 - Talk about uses of electromagnets in everyday life.
- **Assessment:**
 - Successful creation of an electromagnet.
 - Understanding of how electricity can produce magnetism.

Lesson 12: Circuit Diagrams and Symbols

- **Duration:** 60 minutes
- **Activities:**
 - **Review:**
 - Reinforce standard symbols for all circuit components learned.
 - **Practice:**
 - Draw diagrams of complex circuits including switches and resistors.
 - **Peer Review:**
 - Exchange diagrams and check for accuracy.
- **Assessment:**
 - Correctness of circuit diagrams.
 - Ability to interpret and analyze peer diagrams.

Week 8: Culminating Projects and Assessment

Lesson 13: Creative Circuit Project Planning

- **Duration:** 60 minutes
- **Activities:**
 - **Project Introduction:**
 - Assign a project to design and build a device that uses circuits (e.g., a simple game, model house with lighting).
 - **Planning Session:**
 - Students plan their projects, create diagrams, and list materials needed.
- **Assessment:**
 - Completeness and feasibility of project plans.
 - Creativity in design.

Lesson 14: Project Construction

- **Duration:** Multiple sessions totaling 120 minutes
- **Activities:**
 - **Building Phase:**
 - Students construct their projects using provided materials.
 - **Troubleshooting:**
 - Encourage testing and problem-solving during construction.
- **Assessment:**
 - Progress towards project completion.
 - Application of concepts learned.

Lesson 15: Project Presentations

- **Duration:** 60 minutes
- **Activities:**
 - **Demonstrations:**
 - Students present their completed projects to the class.
 - **Explanation:**
 - Describe how their device works and the types of circuits used.
 - **Question and Answer:**
 - Peers ask questions about the design and challenges faced.
- **Assessment:**
 - Clarity and confidence in presentation.
 - Depth of understanding demonstrated.

Lesson 16: Unit Review and Assessment

- **Duration:** 60 minutes
- **Activities:**
 - **Review Session:**
 - Recap key concepts through a collaborative activity or game.
 - **Unit Test:**
 - Written assessment covering all topics from the unit.
- **Assessment:**
 - Performance on the unit test.
 - Participation in the review session.

Ongoing Assessments Throughout Unit

- **Project Journals:** Documentation of the design, building, and troubleshooting processes.
- **Participation:** Engagement in experiments, discussions, and group activities.
- **Quizzes:** Short assessments after key lessons to monitor understanding.

Standards Alignment

- **NGSS 4-PS3-2:** Make observations to provide evidence that energy can be transferred.
 - **NGSS 4-PS3-4:** Apply scientific ideas to design, test, and refine a device that converts energy.
 - **NGSS 4-PS3-3:** Ask questions and predict outcomes about the changes in energy.
 - **CCSS.ELA-LITERACY.SL.4.5:** Add audio recordings and visual displays to presentations.
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Unit 3: Mechanical Engineering

Duration: 4 Weeks

Unit Objectives

- Explore simple machines (levers, pulleys, inclined planes, wedges, screws, and wheels and axles) and their applications.
- Understand how forces affect motion and how simple machines make work easier.
- Design and build devices using simple machines to solve problems.
- Develop teamwork, creativity, and problem-solving skills.
- Foster an appreciation for engineering and its impact on daily life.

Week 9: Introduction to Simple Machines

Lesson 1: Types of Simple Machines

- **Duration:** 60 minutes
- **Activities:**
 - **Interactive Presentation:**
 - Introduce the six types of simple machines with examples.
 - **Hands-On Exploration:**
 - Rotate through stations with examples of each simple machine.
 - **Note-Taking:**
 - Students fill out a chart with definitions and examples.
- **Assessment:**
 - Completion of the chart.
 - Participation at each station.

Lesson 2: Lever Experiments

- **Duration:** 60 minutes
- **Activities:**
 - **Building Levers:**
 - Use rulers and fulcrums (blocks) to create first, second, and third-class levers.
 - **Experimentation:**
 - Test how moving the fulcrum changes the effort needed to lift a load.

- **Data Recording:**
 - Record observations and results.
- **Assessment:**
 - Understanding of lever classes.
 - Accuracy in data recording.

Lesson 3: Wheel and Axle Exploration

- **Duration:** 60 minutes
- **Activities:**
 - **Demonstration:**
 - Show how wheels and axles reduce friction and make movement easier.
 - **Hands-On Activity:**
 - Build simple carts using spools, dowels, and cardboard.
 - **Testing:**
 - Observe how well different designs move.
- **Assessment:**
 - Creativity in design.
 - Ability to explain how wheels and axles function.

Lesson 4: Inclined Planes and Wedges

- **Duration:** 60 minutes
- **Activities:**
 - **Experiment:**
 - Use ramps to move objects to different heights with less effort.
 - **Observation:**
 - Compare the effort required with and without an inclined plane.
 - **Wedges:**
 - Demonstrate how wedges (e.g., doorstops, axes) split or hold materials.
- **Assessment:**
 - Engagement in activities.
 - Understanding of how inclined planes and wedges work.

Week 10: Pulleys and Screws

Lesson 5: Pulley Systems

- **Duration:** 60 minutes
- **Activities:**
 - **Building Pulleys:**
 - Construct single fixed and movable pulley systems.
 - **Experimentation:**
 - Lift weights and observe how pulleys reduce effort.
 - **Data Recording:**

- Note differences in force required.
- **Assessment:**
 - Correct construction of pulley systems.
 - Ability to explain observations.

Lesson 6: Screw Mechanics

- **Duration:** 60 minutes
- **Activities:**
 - **Explanation:**
 - Discuss how screws are inclined planes wrapped around a cylinder.
 - **Hands-On Activity:**
 - Create model screws using paper and pencils.
 - **Experiment:**
 - Compare the effort needed to insert screws versus nails into materials.
- **Assessment:**
 - Understanding of screw mechanics.
 - Participation in activities.

Lesson 7: Compound Machines

- **Duration:** 60 minutes
- **Activities:**
 - **Concept Introduction:**
 - Define compound machines as devices combining two or more simple machines.
 - **Examples:**
 - Analyze common tools like scissors and wheelbarrows.
 - **Group Activity:**
 - Identify compound machines in the classroom or at home.
- **Assessment:**
 - Ability to identify and explain compound machines.
 - Engagement in group discussions.

Lesson 8: Engineering Design Challenge Introduction

- **Duration:** 60 minutes
- **Activities:**
 - **Design Brief:**
 - Present a challenge to design a device using simple machines to perform a specific task (e.g., lift a weight, move an object over a barrier).
 - **Group Formation:**
 - Students form teams and begin brainstorming ideas.
- **Assessment:**
 - Collaboration within groups.
 - Creativity in initial ideas.

Week 11: Design and Build

Lesson 9: Planning the Device

- **Duration:** 60 minutes
- **Activities:**
 - **Detailed Planning:**
 - Teams create detailed designs, select materials, and assign roles.
 - **Diagramming:**
 - Draw schematics showing the simple machines used.
- **Assessment:**
 - Completeness of plans.
 - Logical organization.

Lesson 10: Construction Phase

- **Duration:** Multiple sessions totaling 180 minutes
- **Activities:**
 - **Building the Device:**
 - Teams construct their devices according to plans.
 - **Problem-Solving:**
 - Overcome construction challenges through teamwork.
 - **Testing:**
 - Begin initial testing and record results.
- **Assessment:**
 - Progress in construction.
 - Effective teamwork.

Lesson 11: Testing and Improving

- **Duration:** 60 minutes
- **Activities:**
 - **Testing Sessions:**
 - Perform thorough testing of devices.
 - **Data Collection:**
 - Record performance metrics (e.g., time taken, amount of force used).
 - **Iteration:**
 - Identify weaknesses and make improvements.
- **Assessment:**
 - Ability to analyze results.
 - Willingness to iterate and improve designs.

Lesson 12: Final Preparations

- **Duration:** 60 minutes

- **Activities:**
 - **Finalize Devices:**
 - Complete any remaining construction or adjustments.
 - **Prepare Presentations:**
 - Plan how to demonstrate the device and explain the design process.
- **Assessment:**
 - Readiness for presentation.
 - Quality of final product.

Week 12: Presentations and Reflection

Lesson 13: Engineering Showcase

- **Duration:** 60 minutes
- **Activities:**
 - **Presentations:**
 - Teams present their devices to the class or at a school event.
 - **Demonstrations:**
 - Show how the device works and explain the simple machines involved.
 - **Question and Answer:**
 - Field questions from peers and teachers.
- **Assessment:**
 - Effectiveness of presentation.
 - Depth of understanding shown.

Lesson 14: Reflection and Assessment

- **Duration:** 60 minutes
- **Activities:**
 - **Group Reflection:**
 - Discuss what was learned, challenges faced, and how they were overcome.
 - **Individual Writing:**
 - Students write personal reflections on their experiences.
- **Assessment:**
 - Thoughtfulness in reflections.
 - Ability to articulate learning outcomes.

Lesson 15: Unit Review Game

- **Duration:** 60 minutes
- **Activities:**
 - **Game Time:**
 - Play a review game (e.g., Jeopardy, Kahoot) covering all unit concepts.
 - **Team Competition:**
 - Encourage friendly competition to reinforce learning.

- **Assessment:**
 - Correctness of answers.
 - Participation and enthusiasm.

Lesson 16: Unit Test and Celebration

- **Duration:** 60 minutes
- **Activities:**
 - **Unit Test:**
 - Written assessment including multiple-choice, short-answer, and diagram questions.
 - **Celebration:**
 - Conclude with a class celebration recognizing hard work.
- **Assessment:**
 - Performance on the unit test.
 - Positive participation in the celebration.

Ongoing Assessments Throughout Unit

- **Project Logs:** Regular documentation of progress and reflections.
- **Participation:** Active involvement in lessons and group work.
- **Observations:** Teacher notes on collaboration and problem-solving.

Standards Alignment

- **NGSS 3-5-ETS1-1:** Define a simple design problem reflecting a need or want.
- **NGSS 3-5-ETS1-2:** Generate and compare multiple possible solutions to a problem.
- **NGSS 3-5-ETS1-3:** Plan and carry out fair tests in which variables are controlled.
- **CCSS.ELA-LITERACY.SL.4.1:** Engage effectively in a range of collaborative discussions.

Additional Notes for Educators

- **Differentiation:**
 - Provide additional support or extensions as needed for diverse learners.
 - Offer varied instructional methods (visual, auditory, kinesthetic) to reach all students.
- **Safety Considerations:**
 - Always supervise activities involving tools or electricity.
 - Teach and enforce safety rules consistently.
- **Parental Involvement:**
 - Encourage parents to contribute materials or expertise.
 - Invite families to attend presentations or showcases.
- **Integration Opportunities:**

- Connect units to mathematics (measurements, data analysis).
- Incorporate literacy through reading and writing activities related to science.
- **Assessment Strategies:**
 - Use formative assessments to guide instruction and provide feedback.
 - Celebrate successes to motivate and build confidence.