Fifth Grade Instructional Plan for SCIENCE: School Year 2025-2026

Course Overview

Fifth Grade Science curriculum focuses on several key areas, including Scientific and Engineering Practices, where students learn to ask questions, make observations, and develop explanations based on evidence. It focuses on hands-on experiments and engineering design processes, involving topics on Matter and Energy, Force, Motion, and Energy, Earth and Space and its resources, and Organisms and Environments.

Throughout the year, the student :

- **Science and Engineering Practices TEKS**: The student will use **science process standards** to acquire and demonstrate understanding of the concepts.
- **Scientific and Engineering Practices.** The student asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models.
- **Scientific and Engineering Practices.** The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs.
- **Scientific and Engineering Practices.** The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions.
- **Scientific and Engineering practices.** The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society.
- **Recurring Themes and Concepts.** The student understands that recurring themes and concepts provide a framework for making connections across disciplines.

Contact Information

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Classroom Expectations

Our classroom is a safe learning place, which encourages teamwork, positive feedback, and academic achievement. All students will be respectful to others. We will be good listeners to the teacher and to other's ideas. All students will be hard working contributors in the process of getting their education in order to be successful and reach their full potential.

Expectation 1: Be respectful

- Use appropriate voice level
- Raise your hand, and wait your turn to speak
- Listen to all instructions and directions
- Stay in your seat and wait for teacher permission

Expectation 2: Be responsible

- Complete all assigned tasks
- Be prepared: Have all necessary materials

Expectation 3: Be safe

- Always keep your hands and feet to self
- Walk at all times
- Report problems to an adult

Expectation 4: Be ready to learn and try your best every day

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- Come to class on time
- Prioritize daily attendance

Positive reinforcement and clear routines will help students learn and meet these expectations. If expectations are not met, the teacher will first reteach and remind the student(s) of expectations. If a student continues to fail to meet expectations, they will be redirected, then parents will be contacted. If a student is unable to meet expectations after these preventative measures, an office referral will be made.

Attendance Policy & Its Importance

Regular attendance is vital to your child's academic development. Third grade is a pivotal year in reading - students move from learning to read to reading to learn. When students attend daily, they stay current with new skills, deepening their knowledge of the world, develop thinking skills, and practice important habits that support lifelong learning.

Please notify the school if your child will be absent. Frequent or extended absences may make it more difficult for your child to learn necessary foundational skills that ensure student success this year and in future school years.

Learning Objectives

By the end of the first semester, students will be able to:

Using Savvas / Science Penguin Knowledge and Skills, students will develop scientific engineering process (SEPs) skills such as:

Science and Engineering Practices TEKS: The student will use **science process standards** to acquire and demonstrate understanding of the concepts in this unit.

- ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- use scientific practices to plan and conduct simple descriptive investigations and use engineering practices to design solutions to problems
- identify, describe, and demonstrate safe practices during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
- develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- identify basic advantages and limitations of models such as their size, properties, and materials
- use mathematical concepts to compare two objects with common attributes
- evaluate a design or object using criteria to determine if it works as intended
- develop explanations and propose solutions supported by data and models
- communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- listen actively to others' explanations to identify important evidence and engage respectfully in scientific discussion
- explain how science or an innovation can help others

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- identify scientists and engineers such as Isaac Newton, Mae Jemison, and Ynes Mexia and explore what different scientists and engineers do

TOOLS TO KNOW

- ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- use scientific practices to plan and conduct descriptive and simple experimental investigations and use engineering practices to design solutions to problems
- demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
- use tools, including calculators, microscopes, hand lenses, metric rulers, Celsius thermometers, prisms, concave and convex lenses, laser pointers, mirrors, digital scales, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, notebooks, timing devices, materials for building circuits, materials to support observations of habitats or organisms such as terrariums and aquariums, and materials to support digital data collection such as computers, tablets, and cameras to observe, measure, test, and analyze information
- collect observations and measurements as evidence
- construct appropriate graphic organizers used to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- evaluate experimental and engineering designs
- identify and use patterns to explain scientific phenomena or to design solutions

Matter and Energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used.

- Compare and contrast matter based on measurable, testable, or observable physical properties.
- Predict, observe, and record changes in states of matter caused by heating or cooling.
- Illustrate that matter is made of tiny particles too small to be seen.
- Demonstrate and explain that some mixtures maintain physical properties of their substances.
- Compare properties of substances before/after making a solution and demonstrate conservation of matter.
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Force, Motion, and Energy. The student knows the nature of forces and the patterns of their interactions

- Investigate and explain how equal and unequal forces acting on an object cause patterns of motion and transfer of energy.
- Design a simple experimental investigation that tests the effect of force on an object in a system.
- Plan and conduct a descriptive investigation to demonstrate and explain how position and motion can be changed by pushing and pulling objects.
- Investigate and describe the transformation of energy in systems (e.g., flashlight battery: chemical → electrical → light).
- Demonstrate that electrical energy in complete circuits can be transformed into motion, light, sound, or thermal energy and identify the requirements for a functioning electrical circuit.
- Demonstrate and explain how light travels in a straight line and can be reflected, refracted, or absorbed.

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Earth and Space. The student recognizes patterns among the Sun, Earth, and Moon system and their effects.

- identify the order of the planets in Earth's solar system in relation to the Sun
- collect and analyze data to identify sequences and predict patterns of change in seasons such as change in temperature and length of daylight
- collect and analyze data to identify sequences and predict patterns of change in the observable appearance of the Moon from Earth
- demonstrate that Earth rotates on its axis once approximately every 24 hours and explain how that causes the day/night cycle and the appearance of the Sun moving across the sky

Earth and Space. The student knows that there are recognizable patterns and processes on Earth.

- model and describe rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides
- identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
- model and identify how changes to Earth's surface by wind, water, or ice result in the formation of landforms, including deltas, canyons, and sand dunes
- model and describe the processes that led to the formation of sedimentary rocks and fossil fuels
- design and explain solutions such as conservation, recycling or proper disposal to minimize environmental impact from the use of renewable and nonrenewable natural resources

Organisms and Environments. The student describes patterns, cycles, systems, and relationships within environments.

- observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem
- predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web;
- describe a healthy ecosystem and how human activities can be beneficial or harmful to it.

Course Resources

- Chromebook (provided by Midland ISD)
- Journals and writing utensils (part of the school supply list)
- Savvas and Science Penguin (3rd-5th)

Grading Policy

According to Midland ISD Grading Policy:

Teachers are expected to use a variety of types of student work performance to assess student achievement. The teacher should choose those which are most appropriate to the class, the students, and the TEKS/SEs under study.

Students will receive minor assignment feedback within three to five school days. Major assignments such as research projects, group projects, and research papers or other long-term projects shall receive a final cumulative grade within ten school days. However, the teacher shall award interim minor assessment grades for individual steps in the process.

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Major assignments - 40% Minor assignments - 60% which may include homework; however, homework may not constitute more than one fourth of the minor assessment summative grade.

Class DoJo (School-wide System of Communication)
Our campus uses ClassDoJo to communicate with families. Please ensure you join our class for important updates.

PBIS System (Schoolwide-wide System for Discipline and Behavior)
Our campus uses PBIS to communicate with families with focus on discipline and behavior matters.

Please feel free to reach out with any questions or concerns. We are excited to work together to make this a successful year of learning!

Please fill out the portion below and return this portion to your teacher.
We acknowledge that we have read and that we understand the expectations in Third Grade Reading Language Arts. We agree to contact the teacher should we have any questions or concerns regarding this instructional plan.

Parent Name: _____

Student Name: _____

Cell Phone Number: _____

E-Mail: _____

Parent Signature : _____

Student Signature: _____

Date:_____