



8th Grade Science Instructional Plan: Fall Semester

Course Overview

Welcome to 8th grade Science.

Contact Information

Teacher Name:

Email: @midlandisd.net

Phone:432-240-4700

Classroom Expectations

Be Respectful – Listen. Use kind words. Treat everyone and everything with care.

Be Responsible – Be on time. Bring what you need. Start bellwork immediately.

Follow Directions – Do what's asked the first time. Raise your hand to speak.

Stay Focused – Sit where you're supposed to. Keep your area tidy. Participate.

Stay Positive – Try your best. Learn from mistakes. Keep growing.

Attendance Policy & Its Importance

Attendance Is the First Step to Success

Coming to school every day ensures every student gets the instruction, connections, and support they need to learn, belong, and grow. Missing just a few days can create gaps in learning—but showing up builds confidence, community, and a path toward long-term achievement.

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:

TEKS

In the Texas Essential Knowledge and Skills (TEKS) framework for 8th-grade science, the fall semester typically focuses on foundational concepts that build upon prior knowledge and prepare students for more advanced studies. Here's a general overview of topics often covered:

1. Scientific and engineering practices

- This is a recurring theme woven throughout the year, emphasizing the process of scientific inquiry, including asking questions, designing and conducting investigations, collecting and analyzing data, and communicating findings.

2. Matter and energy

- Atomic Structure: Students will delve into the structure of atoms, understanding the roles and properties (masses, charges, locations) of protons, neutrons, and electrons. They



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will learn that protons determine an element's identity and valence electrons influence its chemical properties and reactivity.

- Periodic Table: Interpretation of the periodic table, including the significance of groups and periods for classifying elements based on their properties, is a key focus.
- Elements, Compounds, and Mixtures: Distinguishing between these categories of matter and understanding how they are represented by chemical formulas is important.
- Chemical Reactions and Equations: Students will explore the concepts of chemical change and how chemical reactions are represented and balanced through chemical equations. They should also grasp the concept of the Law of Conservation of Mass during chemical reactions.
- Energy Flow: The flow of energy in living systems, such as through food chains and food webs, is addressed.
- Density: Calculating and understanding the concept of density is typically covered.

3. Force, motion, and energy

- Relationship between Force, Motion, and Energy: Understanding this relationship is central to this unit.
- Speed, Velocity, and Acceleration: Students will differentiate between these concepts and apply them to describe motion.
- Newton's Laws of Motion: Investigating and describing real-world applications of Newton's laws of motion, such as in vehicle restraints or rocket launches, is expected.
- Potential and Kinetic Energy: Comparing and contrasting these forms of energy and understanding their transformations are included.
- Law of Conservation of Energy: Students learn that energy is conserved during transformations and transfers in various systems.

4. Earth and space

- Cycles of the Sun, Earth, and Moon: Understanding the cyclical movements of the Earth, Sun, and Moon and their effects, such as seasons, tides, and the lunar cycle, is a crucial part of this section.
- Characteristics of the Universe: Topics like galaxies, stars (including the Sun's characteristics and the HR diagram), light-years as a unit of distance, and the electromagnetic spectrum are introduced.
- Natural Events and Climate: Students explore how natural events can impact Earth systems, how the Sun's energy drives convection in the atmosphere and oceans, and how global patterns influence local weather. Interpreting weather maps is also a potential focus.
- Plate Tectonics: Understanding plate tectonics and its relationship to crustal features like ocean basin formation, earthquakes, and volcanoes is covered.

5. Organisms and environments

- Interactions in Ecosystems: Understanding how organisms interact with their environment and depend on biotic and abiotic factors is a key concept.
- Biodiversity and Ecosystem Sustainability: The importance of biodiversity for ecosystem stability and sustainability is emphasized.



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- Impact of Environmental Changes: How both short-term and long-term environmental changes can affect populations is explored.
- Ecological Succession: Understanding ecological succession (primary and secondary) and its effects on populations and species diversity after ecosystem disruptions is addressed.
- Human Dependence and Impact on Ocean Systems: This unit examines the human relationship with oceans, including our dependence on them and the impacts of human activities

Course Resources

- McGraw Hill
- Khan Academy

Grading Policy

According to Midland ISD Grading Policy:

[Student Handbook](#)

School-wide System of Communication

Families can reach out by email, phone, or messages during school hours. We are to hear, to listen, to answer questions, and support you both.

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!



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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 [grade level or course]. 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: _____