5th Grade Science Curriculum Overview

The fifth grade science curriculum covers four main topics: Earth Systems, Ecosystems, Matter and Interactions, and Space. Fifth grade students are expected to demonstrate grade-appropriate proficiency in developing and using models, planning and carrying out investigations, analyzing and interpreting data, using mathematics and computational thinking, engaging in argument from evidence, and obtaining, evaluating, and communicating information; and to use these practices to demonstrate understanding of the core ideas.

Skills to be developed throughout the course:

1) Asking questions
2) Developing and using models
3) Planning and carrying out investigations
4) Analyzing and interpreting data
5) Using mathematics and computational thinking
6) Constructing explanations
7) Engaging in argument from evidence
8) Obtaining, evaluating, and communicating information

In Gower Middle 5th Grade Science Classrooms:

- Students will be able to develop a model to describe that matter is made of particles too small to be seen.
- Students will be able to measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.
- Students will be able to make observations and measurements to identify materials based on their properties.
- Students will be able to conduct an investigation to determine whether the mixing of two or more substances results in new substances.
- Students will be able to support an argument that the gravitational force exerted by Earth on objects is directed down.
- Students will be able to use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.
- Students will be able to support an argument that plants get the materials they need for growth chiefly from air and water.
- Students will be able to develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

- Students will be able to support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.
- Students will be able to 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.
- Students will be able to develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
- Students will be able to 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.
- Students will be able to obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

Units of Study:

- Matter and its Interactions
- Motion and Stability: Forces and Interactions
- Energy
- From Molecules to Organisms: Structures and Processes
- Ecosystems: Interactions, Energy and Dynamics
- Earth's Place in the Universe
- Earth's Systems
- Earth and Human Activity

The Learning Standards for this course are Next Generation Science Standards.

NGSS 5th Grade Standards

- 5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.
- 5-PS1-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.
- 5-PS1-3. Make observations and measurements to identify materials based on their properties.
- 5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
- 5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.
- 5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.
- 5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.

- 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
- 5-ESS1-1. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.
- 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-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.
- 5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.