



|| 5th Grade Science Overview

The performance expectations in fifth grade help students formulate answers to questions such as: How can you show that there are particles of matter that are too small to be seen? When matter changes, does its weight change? Can new substances be created by combining other substances? How do we identify different materials? How can we prove the direction of gravity? Where do plants collect matter from? Where does the energy in food come from and what is it used for? How does matter cycle through ecosystems? What can fossils teach us about the organisms and environments of the past? How do some individuals of a species use variations as advantages in surviving and reproducing? Why are some habitats better for certain organisms and harmful for others? What can people do to help organisms in a changing environment? Why is the sun brighter than other stars? How do lengths and directions of shadows or relative lengths of day and night change from day to day? How do land, air, water, and organisms affect each other? Where are fresh water reservoirs and how do they compare to all water on earth? How can communities use science to protect the environment?

PHYSICAL SCIENCE: All substances are composed of matter. Matter is made of particles that are too small to be seen but still exist and can be detected by other means. Students will create a model to explain observations of particles too small to be seen. Substances have specific properties by which they can be identified. Students will identify materials based on their properties. When two or more different substances are combined, a new substance with different properties may be formed. Whether a change results in a new substance or not, the total amount of matter is always conserved. Students will determine whether the mixture of two or more substances results in a new substance and that the mass does not change. Gravity pulls objects toward the Earth's center. Students will use evidence to identify the force of gravity. Energy released from food was once energy from the sun that was captured by plants in the chemical process that forms plant matter. Animals use these materials for body repair and growth, the energy they need to maintain body warmth, and energy for motion. Students will use models to describe the movement of energy from the sun to animals.

LIFE SCIENCE: Through the study of organisms, inferences can be made about environments both past and present. Some kinds of plants and animals that once lived on Earth can no longer be found. However, fossils from these organisms provide evidence about the types of organisms that lived long ago and the nature of their environments. Additionally, the presence and location of certain fossil types indicate changes that have occurred in environments over time. Students will interpret data from fossils to describe how both organisms and land have changed over time.



Matter cycles within ecosystems and can be traced from organism to organism. Students will use evidence to support the idea that plants use energy from the sun to change air and water into matter needed for growth. Individuals of a species vary from other individuals. Some variations of characteristics result in advantages in survival and reproduction. Students will use evidence to explain cause and effect relationships between specific variations in characteristics and an individual organisms' ability to survive and reproduce. The organisms and their habitat make up a system in which the parts depend on each other. Some organisms survive well and some do not in particular habitats. Students will use evidence and reasoning to describe cause and effect relationships between habitat and organism survival. Scientists and engineers design solutions to conserve Earth's environments and resources. Students will evaluate solutions to problems caused by environmental change.

EARTH SCIENCE: The sun is a star that appears larger and brighter than other stars. Students will use reasoning to connect evidence to describe why the sun is brighter. The rotation of Earth on its axis and orbit of Earth around the sun causes observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun and stars at different times of the day, month, and year. Students will collect data to describe patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearances of some stars in the night sky.

Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). Students will develop a model to describe ways in which the geosphere, biosphere, hydrosphere, and/or atmosphere interact. Students will also use graphs to compare fresh water to total water reservoirs.

Human activities in agriculture, industry, and everyday life have effects on the land, vegetation, streams, ocean, air, and even outer space. Individuals and communities are doing things to help protect Earth's resources and environments. Students will research and evaluate ways individual communities use science to protect the Earth's resources and environment.

For Questions Contact

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