

GRADE 5 SCIENCE

Key Features

Focus Areas

- Matter is made of particles,
- matter is conserved during the heating, cooling or mixing of substances,
- identify materials based on their properties,
- mixing substances,
- gravity,
- the flow of energy in animals,
- the needs of plants,
- movement of matter among plants, animals, decomposers, and the environment,
- the distance of stars and constellations,
- shadows,
- the interaction of the geosphere, biosphere, hydrosphere and atmosphere,
- distribution of water on Earth, and
- protecting Earth's resources and environment

By the end of Grade 5, students can

- Develop and use models to describe phenomena.
- Support an argument with evidence, data, or a model.
- Describe that matter is made of particles too small to be seen.
- Measure and graph the weight of matter to show it is conserved.
- Observe and measure a variety of properties used to identify materials: color, interaction with liquid, reaction to heat or magnets.
- Investigate whether the mixing of two or more substances results in new substances.
- Use evidence to show that gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center.
- Describe that energy in animals' food was once energy from the Sun.
- Provide evidence that plants obtain materials they need for growth mainly from air and water.
- Describe the movement of matter among plants, animals, decomposers, and the environment.

- Explain how the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.
- Graph data to show patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.
- Describe ways the geosphere, biosphere, hydrosphere and/or atmosphere interact.
- Describe and graph the amounts of saltwater and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.
- Evaluate potential solutions to problems that individual communities face protecting the Earth's resources and environment.

Home to School Connections

Questions you can ask your learner could include:

- When water evaporates, where does it go?
- How come we don't float away into space?
- What is an example of a producer? How about a consumer?
- What structure in space does Earth orbit?
- What role does a decomposer play in an ecosystem?
- What foods do we eat that get energy directly from the sun?
- What kind of water do we have in our community - freshwater or saltwater?
- How is water cycled through Earth if it starts as a raindrop?
- During what season is the length of day the longest? How about the shortest?

Questions you can ask your learner's teacher could include:

- Which stars and constellations are discussed in class?
- What human activities have had major effects on the environment in our community?
- What local land and water features do the students learn about?

Activities and learning you can do outside of the classroom to support your learner could include:

- Adding air to a balloon causing inflation to show matter particles that are too small to see are in the air.
- Observe the melting of an ice cube in a bag and discuss how the water changed from a solid to a liquid form.
- Stack blocks to build a larger structure, then break it back down to individual pieces to see that matter is conserved.
- Use a variety of items from your house to practice identifying properties including color, hardness, reflectivity. Examples: powders such as baking soda, metals, minerals, and liquids
- Cooking and baking at home gives the learner a great opportunity to observe what happens when 2 or more substances are mixed together.
- Drop a variety of objects to see which direction they go.
- Take a trip through the grocery store and identify foods that store energy created from the Sun.
- Sprout seeds with a moist paper towel in a clear bag taped to a window to observe plant growth, discuss how the plant's needs are met and what the next steps would be to keep the plant alive.
- Choose a spot in nature with a variety of plants and animals to observe over several seasons. In the spring new plants will sprout and different animals will appear. In the fall leaves fall to the ground and create a layer of decomposition.
- Observe the stars at night for a week and try to identify those that are the brightest. Discuss how selected stars are only visible in particular months.
- Record the length of day based on the sunrise and sunset each day for a week. You can observe the sunrise and sunset or find the published times in the media.
- Look at a world map and estimate how much of Earth is covered by ocean (saltwater). Identify mountains, rivers, lakes. Observe patterns with water and land features.
- Observe the land use in your community. Identify ways humans have impacted the natural environment.

Books

- Conklin, Wendy. *Earth's Cycles*
- Driscoll, Michael. *A Child's Introduction to the Night Sky*

- Howell, Izzi. *Geographics Earth's Resources*
- Kamkwamba, William and Mealer, Bryan. *The Boy Who Harnessed the Wind*
- Landau, Eliane. *Oil Spill! Disaster in the Gulf of Mexico*
- Mitton, Jacqueline. *Once Upon a Starry night: A Book of Constellations*
- Reynolds, Paul A. *Sydney and Simon Go Green!*
- Schilling, Govert. *Constellations: The Story of Space Told Through the 88 Known Star patterns in the Night Sky*

Resources

- American Museum of Natural History: Ology (<https://www.amnh.org/explore/ology>)
- Britannica Kids (<https://kids.britannica.com/>)
- CK-12 Foundation: (<https://www.ck12.org/student/>)
- Discus Kids (<https://www.scdiscus.org/discus-kids>)
- Edventure Children's Museum (<https://edventure.org/>)
- Exploratorium (<https://www.exploratorium.edu/>)
- Khan Academy Kids (<https://learn.khanacademy.org/khan-academy-kids/>)
- NASA Kid's Club (<https://www.nasa.gov/learning-resources/nasa-kids-club/>)
- PBS Kids Science (<https://pbskids.org/games/science>)
- South Carolina State Museum (<https://scmuseum.org/>)