KINDERGARTEN SCIENCE

Key Features

Focus Areas

- motion of objects: pushing, pulling, collisions, starting, and stopping,
- sunlight warms Earth's surface,
- plant and animal survival,
- human impact on the local environment and ways to reduce the impact, and
- weather patterns and forecasts.

By the end of Kindergarten, students can

- Ask questions, make observations, and gather information to solve problems.
- Create designs to solve problems using sketches, drawings, or physical models.
- Investigate how the direction and speed of motion can change when an object is pushed or pulled, and when two objects hit one another (collide).
- Use the terms warmer and cooler in their observation of sunlight on Earth's surfaces (sand, soil, rocks, water).
- Identify that all animals and plants need food and water in order to live and grow.
- Observe patterns of survival: animals take in food and plants make food; all living things require water; plants need light.
- Provide examples how plants and animals (including humans) can change their environment (for example, beavers building dams, tree roots breaking concrete, humans heating/cooling their homes)
- Model how the needs of a plant or animal are met in the location they live (for example, grasses need sunlight so they grow in meadows or deer eat leaves therefore they live in forested areas).
- Communicate examples of human impact on the environment and choices that can be made to reduce the impact (for example, the impact of cutting trees to produce paper and making the choice to reduce and reuse paper materials).
- Observe local weather and describe weather patterns.
- Identify how weather forecasts can help people plan for and respond to local weather including severe weather.

Home to School Connections

Questions you can ask your learner could include:

- What happens when you kick a ball? Does the ball speed up or slow down if you kick it harder?
- When the sun is shining directly on sand (or any other material you observe), does it get warmer or cooler?
- What happens if you do not give a plant enough water?
- What are some things we use at home that we need for survival?
- What clothing would be best to wear if rain is in the forecast?

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

- Where are places in the community to view a variety of plants and animals?
- How do students prepare for severe weather at school?

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

- Rolling one ball into another at different speed
- Feel how the sun warms up materials: sand, soil, rocks, and water.
- Show how reducing the sun with shade can cool down materials.
- Go on a nature walk and talk about how plants take up water with their roots and use sunlight in their leaves to make food. Discuss different types of food for the animals you see.
- Talk about choices your family makes to reduce the impact on the environment locally. Examples: recycling, alternative modes of transportations such as bicycling and walking.
- Track local weather patterns (the number of sunny, cloudy, rainy, warm days in a month).
- Discuss safety plans for local severe weather.

Books

- Batten, Mary. *Hungry Plants*
- Bluemle, Elizabeth. *Tap Tap Boom*
- Carle, Eric. *The Tiny Seed*
- Gibbons, Gail. *Sun Up, Sun Down*
- Little Grasshopper Books-*Plant It! Grow It! Eat It!*
- Murphy, Patricia J. *Push and Pull*
- Stille, Darlene R. *Push and Pull, Fast and Slow*
- Mandel, Muriel. *Simple Weather Experiments With Everyday Materials*
- Stojic, Manya. *Rain*

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/)