

3RD GRADE SCIENCE

Students should be able to use science and engineering practices and understand the following content:

Science and Engineering Practices

- Development of habits of mind that are necessary for scientific thinking and that allow students to engage in science in ways similar to those used by scientists and engineers
- Asking and answering questions about the natural world
- Developing and using models to (1) build understanding of phenomena, processes and relationships, (2) test devices or solutions, or (3) communicate ideas to others
- With teacher guidance, conduct structured investigations to answer scientific questions, test predictions, and develop explanations
- Collecting and analyzing data from investigations to construct explanations and communicate results
- Using mathematical and computational thinking in collecting and communicating data
- Using technology to collect data and in communication of results

Physical Science (Electricity and Magnetism)

- Demonstrate an understanding of how electricity transfers energy and how magnetism can result from electricity
- Recognize that electricity can be transformed into the other kinds of energy (heat, light, motion, sound)
- Construct electrical circuits
- Identify properties of conductors and insulators
- Develop and use models to describe and compare properties of magnets and electromagnets (including polarity, attraction, repulsion, and strength)
- Plan and conduct investigations to determine factors that affect the strength of an electromagnet

Earth Science (Earth Processes)

- Demonstrate an understanding of the composition of Earth and the processes that shape features of Earth's surface
- Analyze and interpret data from observations and measurements to describe different Earth materials (rocks, minerals, soil)
- Classify Earth materials based on physical properties
- Develop and use models to describe and classify the patterns of land and water features on Earth
- Develop models and describe the characteristics of various continental landforms
- Determine how natural processes (weathering, erosion, gravity) shape the Earth's surface
- Explain how natural events (fires, landslides, earthquakes, etc.) and human activities impact the environment
- Communicate information about how resources are used and how they can be conserved

Life Science (Diversity of Organisms)

- Demonstrate an understanding of how the characteristics and changes in environments and habitats affect the diversity of organisms
- Analyze and interpret data about the characteristics of environments to describe how the environment supports a variety of organisms
- Develop and use a food chain model to classify organisms such as producers, consumers, and decomposers
- Describe how organisms obtain energy

- Explain possible outcomes for plants and animals if the environment changes
- Develop and use models to illustrate how plants and animals respond to changes
- Discuss how fossils of plants and animals can be used to make inferences about early environments

Activities:

- Use a battery, bulb, and some insulated wire to make a simple circuit. Be safety aware when working with electricity!
- If you have a small compass, show what the current in the circuit you make does to the compass needle.
- Make an electromagnet. You can find directions online.
- Discuss some of the uses for magnets and electromagnets. Many medical applications exist.
- Read about Maglev trains.
- Review a world map to see where the most active volcanoes and earthquake zones are.
- Watch a program that describes safety precautions during severe weather
- Find someone who has a rock and mineral collection that you can examine.
- Start a rock and mineral collection. Learn how to classify rocks and minerals.
- Discuss examples of fossils and locations where they are found.
- Discuss the kinds of plants and animals found in South Carolina. What kinds of habitats are available in your state? You can also write and draw this information on a map.
- View educational television programs that have information on plants and animals.
- There are Web sites that also have quality information on animals and other science topics.
- Take a walk in your neighborhood, visit a park, or visit a zoo. Talk about the various plants and animals that you see and how they look and what they need.

Books:

- Aiki. *Fossils Tell of Long Ago*
- Cole, Joanna. *The Magic School Bus and the Electrical Field Trip*
- Crossingham, John. *What Is Hibernation?*
- Hewitt, Sally. *All Kinds of Habitats*
- Hewitt, Sally. *Heat*
- Loewer, Peter and Jean. *The Moonflower*
- Pellant, Chris. *Smithsonian Handbooks: Rocks & Minerals*
- Silver, Donald. *One Small Square: Woods*
- Wilkes, Angela. *Animal Homes (Kingfisher Young Knowledge)*
- Whalley, Margaret. *Magnetism & Electricity*

Web Sites:

- AAAS Science Netlinks - www.sciencenetlinks.com
- Bill Nye the Science Guy - www.billnye.com
- SC Department of Natural Resources - www.dnr.state.sc.us
- ENature - www.eNature.com
- Learning Network Parent Channel - www.familyeducation.com
- NASA's Web site for Earth Science - <http://kids.earth.nasa.gov>
- National Wildlife Federation - www.nwf.org/kids/