



IMPORTANT CONCEPTS YOUR STUDENT SHOULD KNOW AND ACTIVITIES TO DO AT HOME

ELECTRICITY AND MAGNETISM

DESCRIPTION

In this unit will investigate the properties of static electricity and human-harnessed electricity. Students will also investigate magnetism and the relationship between magnetism and electricity. Students will perform the following science and engineering practices to help explain electricity and magnetism.

KEY WORDS TO KNOW

Electricity

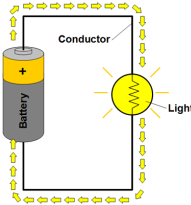
- Electricity- the effect of the apparent flow of electrons through a conductor
- Electric current- the flow of an electric charge through a conductor
- Static electricity- An electric charge, caused by friction, that builds up on the surface of an object.
- Electric force-the force of attraction between two electrically charged objects or a charged object and a neutral object
- Friction- The resistance caused by moving the surface of one object over the surface of another.
- Electric circuit- a closed path that electric current follows
- Series circuit-a circuit that has only 1 path for its current to follow
- Parallel circuit- a circuit that has more than 1 path for the current to follow

Magnetism

- Magnetism: a property of certain types of materials that allows them to attract or repel other objects that have this property
Magnet: An object that attracts certain materials, such as iron or steel
- Magnetic Field: The space around a magnet in which its magnetic lines of force act
- Magnetic Pole: Either of two poles of a magnet: a North Pole (or north-seeking pole) and a South Pole (or south-seeking pole).
- Magnetic force is concentrated near the poles. The like poles of a magnet repel each other; unlike poles attract.



ELECTRICITY AND MAGNETISM

Important Concepts Addressed in this Unit	Sample Problems	How You Can Help Your Child
<p>S5P2. Obtain, evaluate, and communicate information to investigate electricity.</p> <p>a. Obtain and combine information from multiple sources to explain the difference between naturally occurring electricity (static) and human-harnessed electricity.</p> <p>b. Design a complete, simple electric circuit, and explain all necessary components.</p> <p>c. Plan and carry out investigations on common materials to determine if they are insulators or conductors of electricity.</p> <p>S5P3. Obtain, evaluate, and communicate information about magnetism and its relationship to electricity.</p> <p>a. Construct an argument based on experimental evidence to communicate the differences in function and purpose of an electromagnet and a magnet.</p> <p>b. Plan and carry out an investigation to observe the interaction between a magnetic field and a magnetic object.</p>	<ol style="list-style-type: none"> 1. What are the conditions for static electricity? 2. How is human-harnessed electricity different from static electricity? 3. How does a basic electric circuit work?  <ol style="list-style-type: none"> 4. How are conductors and insulators different? 5. Explain the relationship between electricity and magnetism. 	<p style="text-align: center;">Online Resources</p> <ul style="list-style-type: none"> • Science Curriculum: STEMscopes via MyBackpack • Milestones Assessment Guide https://lorpub.gadoe.org/xmlui/bitstream/handle/123456789/49665/Gr_05_Assessment_Guide_10.25.17.pdf?sequence=1 • GA Power http://www.learningpower.org/georgia/ • Brain Pop-via MyBackpack https://www.brainpop.com/science/energy/electriccircuits/ • Electricity: www.studyjams.com http://studyjams.scholastic.com/studyjams/jams/science/energy-light-sound/electricity.htm • Magnetism: www.studyjams.com http://studyjams.scholastic.com/studyjams/jams/science/energy-light-sound/magnetism.htm
<p style="text-align: center;">Changes to Science Standards: Students are expected to perform the practices while learning the content and understanding the crosscutting concepts.</p>		

Science and Engineering Practices

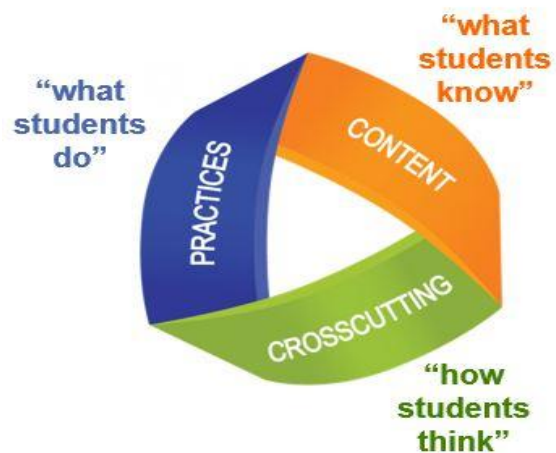
Students can use their understanding to investigate the natural world through the practices of science inquiry, or solve meaningful problems through the practices of engineering design.

Crosscutting Concepts

Provide students with connections and intellectual tools that are related across the differing areas of disciplinary content and can enrich their application of practices and their understanding of core ideas

Core Ideas

Core ideas cover the four domains: physical sciences, earth and space sciences, life science, and engineering and technology.



Quoted text from Peter A'Hearn