Unit 2: Electricty and Magnetism

Content Area: **Science**
Course(s): **Science 4**
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Enduring Understandings

Magnets are attracted to iron and steel.

Magnets attract and repel one another.

A circuit is a pathway in which electricity flows.

Electromagnetism is magnetism created by current flowing through a conductor.

Essential Questions

What kinds of materials do magnets stick to?

What happens when put magnets together?

How do magnets interact with other objects?

How can you get electricity to a source from a receiver?

What does a switch do in a circuit?

Can you make a magnet that turns on and off?

Why is the transfer of energy important?

Content

Module: Electricity and Magnetism

Internet Resources

Physics for Kids

- http://www.physics4kids.com/files/elec_intro.html

Science Bob

- http://www.sciencebob.com/experiments/staticroll.php

Educational Videos and Lessons

- http://www.neok12.com/Electromagnetism.htm

How Magnets Work

- http://www.howmagnetswork.com/

Experiments

- http://www.galaxy.net/~k12/electric/index.shtml

Brain Pop

- https://www.brainpop.com

Bill Nye Videos

Scholastic News

- http://magazines.scholastic.com

Readworks

- http://www.readworks.org

http://www.bbc.co.uk/bitesize/ks1/science/electricity/play/
http://www.bbc.co.uk/schools/podsmission/electricity/annie02.shtml
http://www.switchedonkids.org.uk
http://www.swlauriersb.qc.ca/schools/mccaig/teachers/dstrina/electricitygr6.htm

Skills

Categorize objects that contain iron to stick to magnets and those that do not.

Discover that two or more magnets will attract or repel one another.

Measure the force of attraction between two magnets.

Observe and record what happens to the force between two magnets as distance between them increases.

Explore ways to detect magnetic force.

Investigate simple electric circuits.

Build a circuit to test whether objects are conductors or insulators.

Identify ways to collect data

Standards

SCI.4	Energy
SCI.4	Structure, Function, and Information Processing
SCI.4-PS3-3	Ask questions and predict outcomes about the changes in energy that occur when objects collide.
SCI.4-PS3-1	Use evidence to construct an explanation relating the speed of an object to the energy of that object.

SCI.4-PS3-2	Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.
SCI.4-PS3-4	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.
SCI.4-PS4-2	Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.