 

Science in a Bag – Student Page

**Magnets**

Grade Level

Third Grade

Standards

GLE 0301.13.1 Explore how magnets attract objects made of certain metals.

CU 0301.12.1 Determine that only certain types of objects are attracted to magnets.

SPI 0307.12.2 Identify objects that are attracted to magnets.

Task Objective

Students should be able to identify properties of magnets by classifying objects as magnetic or not magnetic.

Materials Needed

-Giant Magnet

- paper clip, eraser, pencil, bottle cap, crayon, nickel, post-it note, marker, blue o ring, key, hair clip, fuzzy wire, pop sickle stick, magnet, slinky, brad.

Procedures

1. Take all the objects out of the bag.

2. Set aside giant magnet and Magnetic/Not Magnetic chart.

3. Spread out remaining objects on a table.

4. In your Learning Log draw a picture of each object and make a prediction about each object, whether it will be magnetic or not magnetic and why. Make sure to give your page a title.

5. After you have made your predictions, hold the giant magnet and scan it over each object. When you scan the objects put magnetic objects and non-magnetic objects on the chart in the correct box.

6. Then look back and see if your predictions were right! If any of your predictions are wrong write what really happened to the object.

Assessment

*Answer these questions in your Learning Log*

-What types of objects are attracted/not attracted to magnets?

-Where do we use magnets?

-What does a magnet do?

Clean up: Put ALL of the materials neatly in the bag.



Science in a Bag – Teacher Page

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Task Objective

Students should be able to identify properties of magnets by classifying objects as magnetic or not magnetic.

Explanation

In this activity students will discover different materials and objects that are attracted to magnets. They will be able to see how the giant magnet has a pull on certain objects, especially if they hold the magnet right above the objects instead of touching the magnet to the objects. By separating the objects, in the bag, as magnetic and not magnetic students should be able to see the different properties about magnets and get hands on experience with the magnets. Some misconceptions the students might have, prior to this activity, about magnets should be clarified. Iron, nickel and cobalt are the only metals attracted to magnets. If these three metals are mixed with other metals, which are called alloys, then the object will be attracted to a magnet.

Common Misconceptions

Some common misconceptions about magnets are that all metals are attracted to magnets, all silver color objects are attracted to magnets, and larger magnets are stronger than smaller magnets.

Real World Connection

Magnets are found everywhere in our daily lives. Most commonly you can find magnets on refigerators holding up reminders or artwork. You can also find magnets inside electronics in home appliances such as the dishwasher, microwave, and other electronics in your home. Magnets are helpful to us because they can produce electricity, which we need to power our homes, cars, and electronics. They can be harmful to some electronics like computer hard drives and cell phones if they are too close.

Connections Across the Curriculum

**Math:**

-3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units- Whole numbers, halves, or quarters.

- In math magnets can be used with measuring. Students can measure how far the magnet has to be before it moves and object.

**Language:**

-W.3.7 Conduct short research projects that build knowledge about a topic.

-After students complete this activity they could write a short research paper about what types of objects were/are attracted to magnets and explain why certain objects are attracted to magnets.

**Art:**

**-**Checks for Understanding 1.2 Demonstrate developmentally appropriate use of media (e.g. drawing, painting, sculpting, print making, and technology).

-Magnets can be use in art to make 3D sculptures. As the students work with different shapes and sizes they will see how the magnets react to each other while making art.

References

<http://www.cyberphysics.co.uk/PGCE/Misconceptions/magnets.htm>

<http://sciencewithme.com/learn-about-magnets/>

<http://www.wondermagnet.com/disclaimer.html>