

Manchester College

Education Department

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Lesson Plan: adapted from Activities for Teaching Science Inquiry

Lesson: Magnets and Interactions

Length: 45 minutes

Age or Grade Intended: 2nd grade

Academic Standard(s):

2.3.8 Demonstrate and observe that magnets can be used to make some things move without being touched.

Performance Objectives:

*Each student will have a worksheet to record their predictions and results on a data chart with 95% accuracy.

*Each student will discover through their tests, observations, and exploring the classroom what magnets can do with 100% accuracy.

Evaluation:

The teacher wants to have the students see what their predictions are and also see the results so they can compare and learn about what their testing showed them. Having a worksheet will allow them to learn by comparing their predictions and their results. Also having the student test, observe, and explore objects in the room on their own will allow them to make a connection and test their own intuition on what they believe is will be attracted to their magnets.

Prep/Materials:

Preparation:

Materials: Need to have enough bar magnets for all students. An assortment of magnetic objects containing iron, such as paper clips, screws, and nails. Some nonmagnetic materials, such as wood, plastic, and paper objects. Also some non-iron metallic objects, such as aluminum nails and pop cans.

Engagement:

Give each student a bar magnet without telling them what the object is called. Let them try to figure it out. Ask the students after a few moments, “What is this object on your desk?” (**Bloom’s Taxonomy: Knowledge**) After the students have discovered what each of them have the teacher can tell them to go explore any interactions the magnet has with things in reach of their seats. Explain that something happens with things interact. Point out that the key interaction is when objects stick to the magnet.

Exploration & Explanation:

1. Ask the students, “What kinds of things will stick to magnets?” (**Bloom’s Taxonomy: Application**)
2. The teacher will divide the students into six groups of three students.
3. After the students are in their groups, each group will receive a bag of assorted magnetic and nonmagnetic objects. The teacher will instruct the students to sort

the objects into two piles, according to which objects will stick to the magnet and will not stick.

4. Each student will have a worksheet with a chart to fill out after they have sorted their objects into two piles. On the chart they will see a list of objects from the bag in which they will have to list what they put in each pile depending on the magnetism.

5. Once the groups are done sorting their objects the teacher will approve them to go onto the next step of testing each object for its magnetism.

6. After the objects are all tested, have the students fill out the results on that same worksheet.

7. The teacher can lead a discussion by asking, “How accurate were your prediction?” (**Bloom’s Taxonomy: Evaluation**) “What surprised you about your results?” Some students will probably talk about the objects that are metallic, but non-iron. During this class discussion the teacher will lead them in questions and allowing them to think about what they just did and apply it to their reasons why some objects stuck to the magnet and why some objects did not.

Elaboration:

To extend the concept of magnetism a little more have the students explore the room to find more objects that will interact with magnets. (**Gardner’s: Spatial-Visual**)

IMPORTANT NOTE TO TEACHERS: make sure to put signs up that say, “NO MAGNETS HERE” because magnets should not be around computers, television screens, computer disks, and audiotapes. When in contact with these items, magnets could damage them. After the students go around for about five minutes, make a list of items on the blackboard that interacted with the magnets. Ask the students, “What objects in the room contain iron?” (**Bloom’s Taxonomy: Analysis**)

Adaptation:

-Some students may need to know what each object is that is inside the bag. The teacher needs to make sure to tell them what each object’s name is.

Enrichment:

-These students can maybe research on a specific website about magnets and give a brief description of what they learned or found interesting. They can maybe find something about how magnets are used in society.