

**Project FOCUS
Best Lessons
FOURTH GRADE**

Title of Lesson: Magnetic Pick-Ups

Theme: Physical Science

Unit Number: **Unit Title:** Force, Motion and Simple Machines

Performance Standard(s) Covered (enter codes):

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

magnetism,

Learning Activity (Description in Steps)

Abstract (limit 100 characters): Students will gain an understanding that certain materials are attracted to magnets and some are not

Details: Students should carry out many investigations in order to familiarize themselves with the pushes and pulls of magnets. By exploring magnets, students are indirectly introduced to the idea that there are forces that occur on earth which cannot be seen. This idea can then be developed into an understanding that objects, such as the earth or electrically charged objects, can pull on other objects. It is important that students get a sense of electric and magnetic force fields (as well as gravity) and of some simple relations between magnetic and electric current.

Divide students into pairs and provide each pair with a bag of objects to test (students should not have magnets at this time). Tell students to empty their bags of materials and investigate what is inside. Ask students to study all the objects and then classify or group them based on what they know about the materials. Students may choose to sort by size, shape, material make-up, weight, or some other scheme. Then ask students to think of another way to classify the objects. Once students have determined two or three ways to classify the objects, have each group share one of its methods, and perhaps discuss which objects would fall under which categories. You may wish to record the various classification methods on the board.

Tell students that they will explore magnets and the types of objects that are attracted to them. Explain to students that they will make predictions about whether or not the objects in front of them are magnetic, and then discover if their predictions are correct.

The student may now explore with magnets which objects are most magnetic and which are not. They may be able to discuss why one object is more magnetic than another, etc.

Materials Needed (Type and Quantity):

- bar or horseshoe magnet
- brown paper bag or ziploc bag
- wooden toothpick
- penny
- jewelry
- plastic cup
 - paper clips
- thread
- needles or pins
- rubber bands
- elastic hair bands
- tin can
- glass
- aluminum foil
 - crayon
- nail
- mitten
- paper
- school scissors
 - tack
- staples
- bobby pin or barrette
- “Magnetic Pickups” worksheet

Notes and Tips (suggested changes, alternative methods, cautions):

Possible Questions:

How are magnets used in our everyday lives? How do you know when something is a magnet? How can you tell if an object is magnetic or not?

Sources/References:

- 1)
- 2)
- 3)