

# Yikes! It's Sticking to Me!

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## Overview

**Topic:** Magnets. This lesson will focus on certain characteristics of magnets and the specific types of metals magnets will attract. By the completion of this lesson, the students will be able to conduct science investigations, explain what a magnet is as well as give examples of items that a magnet will and will not attract.

## Time Allotment

1 - 60 minute class period

## Subject Matter

Science  
Math  
Language Arts

## Learning Objectives

Students will be able to:

- Explain the meaning of the word magnet.
- Describe how a magnet is used.
- Determine what items a magnet will and will not attract.
- Conduct science investigations.
- Write a short story using key vocabulary within their story.

(This lesson addresses Va. SOL Science 2.1 and 2.2; Math 2.9; Language Arts 2.1)

## Media Components

### Video

### *Take a Look 2 # 8, Magnets*

## Materials

Materials the teacher will need to prepare for the Introductory Activity:

- 1 “magic” wand containing a magnet
- 1 plastic fish
- 1 paper clip

Materials the teacher will need for the Learning Activity:

- 1 chart
- word strips on which each metal is written

Materials the teacher will need for the Culminating Activity:

- “Maybe It Will, Maybe It Won’t Attract” Data Sheet (attached)
- “Maybe It Will, Maybe It Won’t Attract” Graph (attached)
- 1 magnet
- 1 box for each group of 2 students with the following items:
  - 1 thumbtack
  - 1 nail
  - 1 toothpick
  - 1 penny
  - 1 pen
  - 1 pin



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- bits of paper
- 1 paper clip
- 3" x 5" piece of aluminum foil
- 1 dime
- 1-3" x 5" piece of cotton cloth
- 1 pair of scissors
- 1 brass paper fastener
- 1 rubber band
- 1 C - cell battery
- plastic
- 1 key
- 1 piece of chalk
- 1 ¾" screw

Materials the teacher will need for the Assessment:

- 1 copy of "What I Learned About Magnets" paragraph sheet (attached)

For each group:

- 1 magnet
- "Maybe It Will, Maybe It Won't Attract" Data Sheet
- "Maybe It Will, Maybe It Won't Attract" Graph
- 1 box of items prepared by the teacher

### Introductory Activities

**1.** Flyin' Fish Activity. The teacher will place a fish, with a paper clip attached to its body, where everyone can see it. The teacher then asks, "How many of you think that I can make this fish fly with my "magic" wand?" After the students respond, the teacher should count the yes's and the nos. (Most of the children will probably say no.)

**2.** The instructor should then place her "magic" wand above the fish, causing it to "magically" move. The teacher will allow the fish to "fly" off the surface of the table.

**3.** Ask, "Can anyone tell me how the fish moved with the help of my wand?" If the students are unable to guess correctly, the teacher should say, "I'll tell you a secret. My 'magic' wand had a little help." The teacher should then pull out the magnet from inside

the wand and show it to the students. The teacher says, "This is called a magnet. A magnet is an object that can attract metal like iron or nickel or a paper clip. Here, the magnet is attracted to the paper clip that was hidden on the fish. A magnet can be man-made using special metals. There are some minerals in the Earth that are magnetic (lodestone)."

**4.** After explaining the definition of a magnet, the instructor should then pass the magnet around until all the students have seen it.

### Learning Activities

**1.** Say, "You have just learned what a magnet is and observed how it works. Now we are going to watch a video about magnets. I will pause or stop the video from time to time to ask questions and discuss what you have seen or heard." Ask, "Does everyone understand?" (The students should say yes.) **START** the *Take a Look 2 #8* video where the word "Magnets" disappears from the screen and the woman says, "Pass me another screw please." **PAUSE** the video after the boy asks, "Hey, how did you do that?" Ask, "How do you think she picked up the screws with her screwdriver?" (*The screws stuck to the screwdriver. The screwdriver picked up the nails. It was magic.*) The reason the screws stuck to the screwdriver was because the screwdriver contained a magnet. It is a special magnetic screwdriver.

**2. Focus:** Say, "In this next segment, I want you to look and listen closely for materials that are magnetic." **RESUME** the video and **STOP** when the woman says "Why don't you sort them into two collections." There is a picture of the different materials on the television screen. The teacher will post a chart that has a column for magnetic items and a column for nonmagnetic items. There will be word strips that have the same names as the metals on the television screen (*aluminum, copper, steel, glass, wood, plastic, nickel and rubber*) Say, "Here is a similar chart with the same items that are in the video. Which metals do you think are magnetic and which are not?" The children will place each word strip under a column marked either "magnetic" or "non -

magnetic". Once the children have completed this activity, the teacher will refocus the students.

**3. Focus:** Say, "Let's see if our magnetic predictions are correct." **RESUME** and **PAUSE** where the boy says, "So the aluminum and copper belong in the non-magnetic group." Say, "Now let's take a look at your answers and see if your predictions were correct." (The teacher should then discuss the student answers and make any corrections as needed to their response sheet.)

**4. Focus:** Say, "I want you to pay close attention to this next video segment and be able to tell me what else a magnet can do." **RESUME** and **PAUSE** when the boy says, "It shows me that magnetism can go through some materials." Ask, "Who can name a material that is not magnetic but a magnet can work through? (*Paper*)" Say, "Now let's see if you can tell me some other materials that magnets can or cannot go through. **RESUME** the video and **PAUSE** when the woman says, "Alright, I'll record our results and you try the rest." Ask, "What other materials can magnetism go through? (*Copper, glass and water*) What does it not go through? (*Aluminum*)"

**5. Focus:** After watching the next video segment I want you to be able to tell me where magnets can be found. **RESUME** and **PAUSE** when narrator says "You use a compass and it works with a magnet." Ask, "Can you name some items that have magnets in them? (*VCR, tape player, compass, computer disks*)"

**6. Focus:** Say, "In the last video segment I want you to listen closely and be able to tell me what the largest magnet in the world is." The teacher should **FAST FORWARD** the video to where a rocket is taking off from Earth and the narrator says, "A rocket taking off from Earth . . ." **PLAY** the video then **STOP** where the astronaut is flying in space. Ask, "What is the largest magnet in the whole world? (*Earth*)"

Note: If necessary, the teacher should review the definition of the word magnet and briefly discuss its properties.

## Culminating Activities

Say, "Now that we've heard some facts about magnets, let us see for ourselves what a magnet can do." At this time, the teacher should divide the students into groups of two. Each group should receive a box previously prepared by the teacher and a "Maybe It Will, Maybe It Won't Attract" Graph and Data Sheets. After passing out the students' materials, the teacher should remind the students to begin only after being told to do so. Afterwards, say, "I have placed a box and two worksheets in each group. The box contains items you see listed on your "Maybe It Will, Maybe It Won't Attract" Data Sheet. Your sheet should look like this." The teacher holds up a copy of the worksheet. Say, "There is also a magnet inside your box. You are going to use the magnet to test each item on the data sheet; however, before you test your items, I want you to make a prediction about each item. Do you think the thumbtack is magnetic or non-magnetic? Under prediction, put a check as to whether you think the item is magnetic or nonmagnetic. Go through each item and do the same thing. In order to work effectively, you need to decide who's going to be the tester and who's going to be the recorder. The recorder is to record the results of the test on the data sheet under "Results". After testing all items and recording all the information or data that you have collected, I want you to write two sentences at the bottom of your data sheet about what you have learned from this experiment. Then I want you to graph your results on the graph that I have provided. Count how many items you found were magnetic. Color up to that number in the magnetic column. Do the same for the nonmagnetic items." The teacher makes certain that each student understands what he/she is supposed to do.

Note to the teacher: When the project is complete, review the answers with the students for accuracy.

## Assessment

"What I Have Learned About Magnets". Ask the students are to write a short story about what they learned about magnets. Tell the students that within

their story, they are to use the word magnet and other words that have been written on the board. The teacher should proofread the students' work and make corrections as necessary. After making corrections, the students will write their final draft on their worksheet. Have the students share their story in front of the class. Afterwards, the teacher may display the students' work in the classroom.

### Cross Curricular Extensions

**Math:** The students could "catch" fish with a magnet. Each fish would have a paper clip attached to the mouth and a value written on the side. The students are to catch as many fish as possible in one minute. The person with the least points is eliminated. The students will go in one minute increments until one student is left.

**Language Arts:** The students could create a classroom book about magnets. They can have pictures, the actual items or illustrate their book themselves. The students are to write about each object and tell whether it is magnetic or non - magnetic.

### Community Connections

1. Students could go on a field trip to the Science Museum and work with exhibits on magnets.
2. Students could go through their own home and discover which items are magnetic.
3. Students could go on a field trip to International Paper, an industry that uses magnetic force during its production.

### About the Author

#### Tahishia R. Harrison

A 1997 graduate of Sussex County High School, Tahishia graduated Cum Laude from Norfolk State University in May of 2001. Majoring in Interdisciplinary Studies, she received her certificate in Early Childhood Education. A writer of short stories and poetry, Tahishia is a member of the NEA and Southside Virginia Educational Association. Free time is spent with her dog, Trixie – as well as playing volleyball, basketball and baseball.