



CHILDREN'S
MUSEUM
— OF VIRGINIA —
PORTSMOUTH

Pre and Post – Visit Activities

More Than Magnets

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Important Information for Teachers

Thank you for choosing *More Than Magnets* for your students! This program will cover the following aspects of your SOL's:

- 2.1 The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which
- a) observations and predictions are made and questions are formed;
 - b) observations are differentiated from personal interpretation;
 - c) observations are repeated to ensure accuracy;
 - d) two or more characteristics or properties are used to classify items;
 - j) conclusions are drawn;
 - k) observations and data are communicated;
 - m) current applications are used to reinforce science concepts.
- 2.2 The student will investigate and understand that natural and artificial magnets have certain characteristics and attract specific types of metals. Key concepts include
- a) Magnetism, iron, magnetic/nonmagnetic, poles, attract/repel; and
 - b) Important applications of magnetism.

Museum Manners

Please review with students and chaperones prior to your visit to the museum.

1. Please plan to arrive 15 minutes before your scheduled time to allow final counts and payment prior to your visit.
2. Remember to use walking feet.
3. Remember to use inside voices.
4. Teachers and chaperones must stay and explore with their students at all times throughout the museum.
5. Remember to share the exhibits and place items back where you found them.
6. Food and drink are not permitted in the museum.

Vocabulary

North Pole- northernmost point on the Earth's axis

South Pole- southernmost point on the Earth's axis

Natural Magnets- magnets found in nature; not made by humans.

Artificial Magnets- magnets made by humans.

Magnetic Field- the area around a magnet in which a magnet's strength affects a magnetic object.

Compass- a device that is used to find direction by means of a needle that always points north.

Investigate- carry out a systematic process to discover or examine.

Predict- statement of what is expected to happen in the future.

Classify- to arrange or organize by category.

Electromagnet- type of magnet in which the magnetic field is created by an electric current.

Iron- one of the three metals that a magnet attracts.

Nickel- one of the three metals that a magnet attracts.

Cobalt- one of the three metals that a magnet attracts.

Pre - Visit Activity

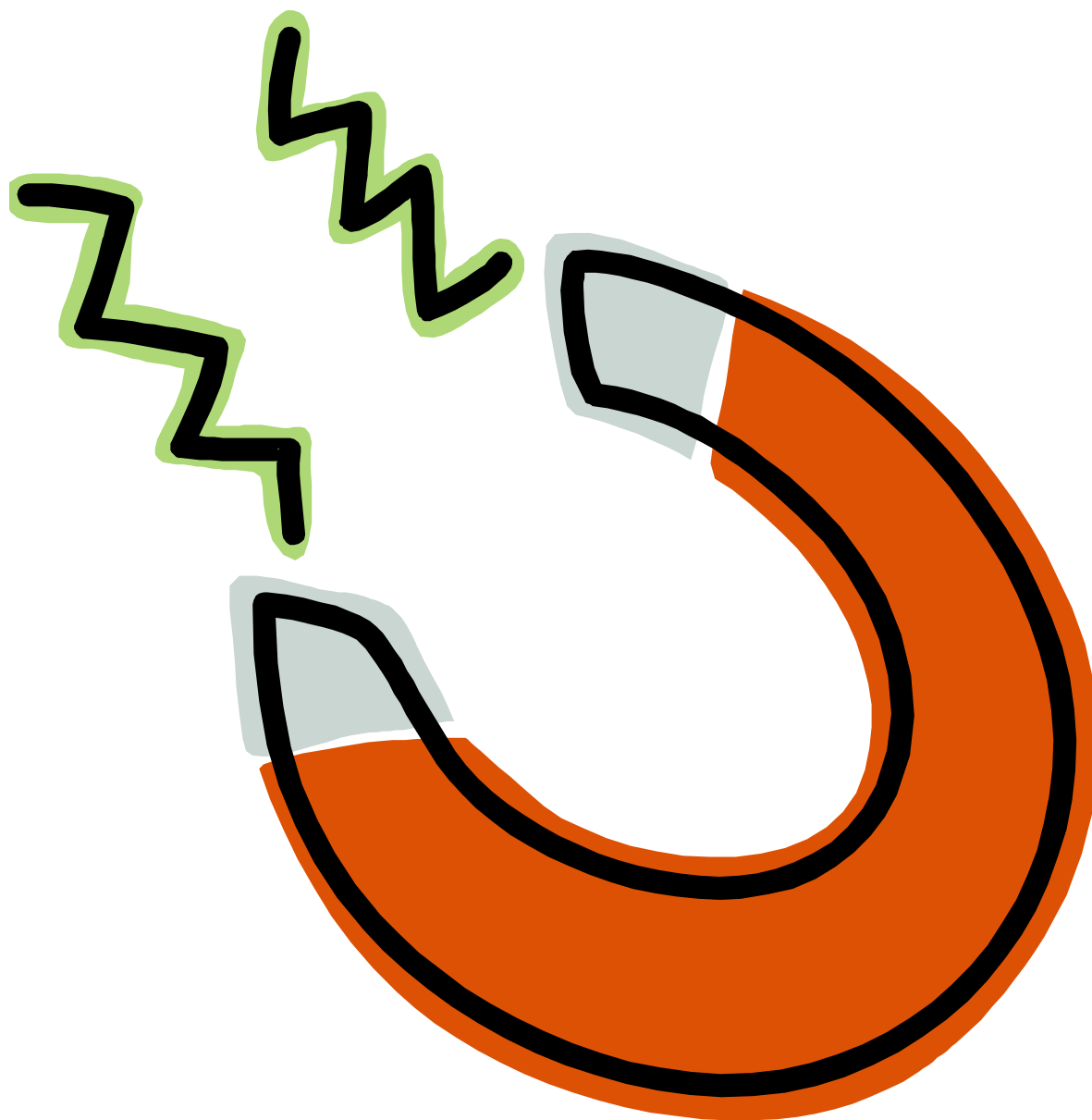
Try this activity before you visit the museum.

More Muscle

Objective: Students will be able to demonstrate which part of the magnet has the strongest attracting ability. Meets SOL's 2.1a-d, 2.2a.

Materials: Scissors, ruler, 2-3 feet of string, bar magnet, masking tape, paper clips, and large bowl

Investigation: Tie a piece of string to each end of the magnet. Tape the free ends of the string to the top of a doorframe so the magnet hangs level. Pour the paper clips into the bowl and spread them out. Raise the bowl to the magnet. Lower the bowl and observe. What is the magnetic field of a magnet and what does it look like? Draw what you see. How many paper clips attracted? Repeat four times and graph results.



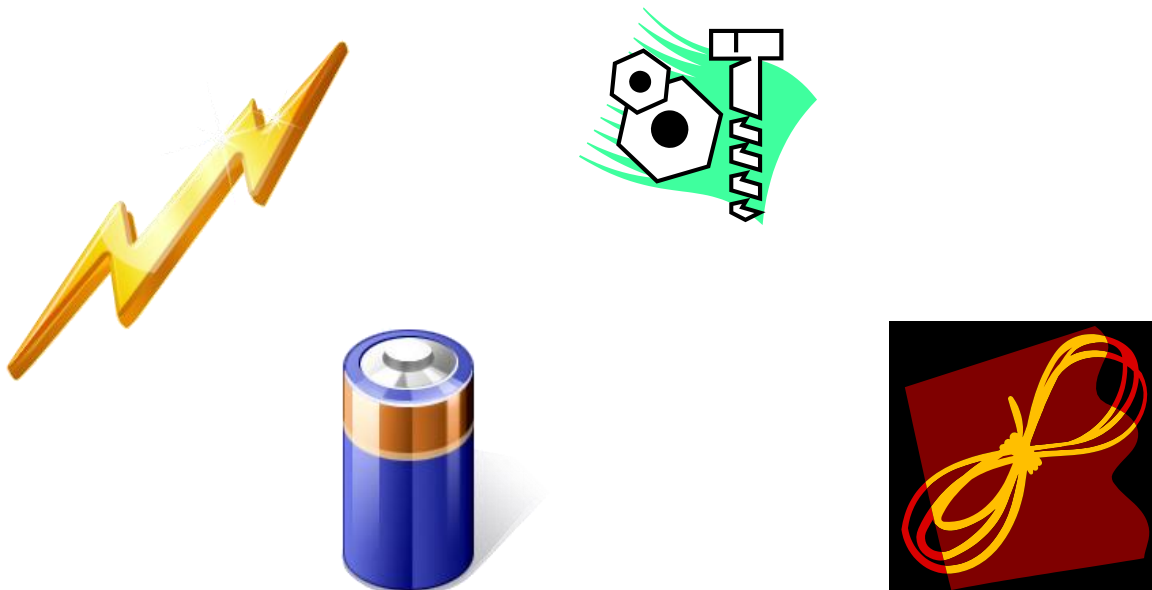
Post - Visit Activity

Try this activity after you visit the museum.

Objective: Students will be able to create and observe an electromagnet. Meets SOL 2.2b.

Materials: coated copper wire of different gauges, electrical tape, different types of batteries (AA, C & D etc), paper clip, large bolt, and pliers/wire cutters.

Investigation: Cut a 6" piece of wire and remove a ½ inch section of the coating on each end to expose the wires. Wrap the bolt with the copper wire and tape it tightly around, keeping the two ends free. Touch the copper wire to the top and bottom of the battery and hold the paper clip close to the bolt. What happened? Try different batteries, different wires, and try coiling the copper wire in different ways around the bolt, but change only 1 variable at a time. Write down your findings and create a chart.



Review Vocabulary

Objective: Students will be able to review and understand the key terms used in the program and by the Virginia Standards of Learning.

Materials: Word Search on following page and pencils.

Investigation/Practice: Students will review the terms in the puzzle and write the definitions of the terms as they find them.

2nd GRADE MAGNETS

Name: _____

Date: _____

I D D C V C H T U M Y D F K J V
W I P L I K G A W A C O B A L T
J T R W K D O D A G N Z C T X I
G I E H S O L C Q N P A H J K L
F P D Y L A I Z R E I M E T A L
P K I Q A B T P D T P N I V L E
I W C T K Z R E P E L N P Q V Z
R E T S O C N Q Q A U Z L E Z Y
T X I S S U N Q V V C B B F R W
R N O L D B J T R M N S Z H K W
O I N O W L L A P C O M P A S S
X S L O D E S T O N E I G A Y R
A T T R A C T H L I R O N W B S
N I C K E L M S E E U Z Q B B Z
N O N M E T A L S A H M Y Q Z N
M A G N E T I C F I E L D D F L

ATTRACT
COBALT
COMPASS
LODESTONE

MAGNET
MAGNETIC FIELD
METAL
NICKEL

IRON
NONMETAL