

Teacher _____

Date _____ Class _____

Period(s) _____

Grade: K Course: Science

Lesson Topic: Magnetism

Objectives		Correlation to State Documents		
The student should be able to:		COS	SAT 9	AHSGE/EXIT
1) Predict whether an object will be attracted by a magnet				
2) Identify questions that can be answered through scientific investigation		K: 1		
3) Use appropriate skills to design and conduct a scientific investigation		K: 4		
Activities/Methods		Resource Materials		Assessment
1. Introduce the topic of magnetism. Introduce the concept of the north and south polar ends of magnets. (If needed use Teacher Cheat Sheet).			Textbook	Check homework
2. Discuss how like poles repel and opposite poles attract			Overhead Masters	Test/Quiz
3. Divide class into groups of three: writer, examiner, experimenter. (Class of 18 = 6 groups of 3)			Workbook/Handouts	X Project
4. Give groups one of three items for testing: One piece of magnetite (13), one paperclip, & one piece of cork One magnet "Magnets" handout			Multimedia Materials Video Computers CD	X Participation
5. Ask "Writer" to write group's names by assigned tasks and prediction of how each object will react to the magnet (hypothesis).		X	Hands-On Materials	Class work
6. Ask "Experimenter" to procure the magnet and the item for testing			Reference Materials	Review
7. Ask "Experimenter" to expose the magnet to selected item			Other Supplies	Presentation
8. Ask "Examiner" to answer, "How does it respond to the magnet?"				X Oral Responses
9. Ask "Writer" to write each response down				X Teacher Observation
10. Groups swap items and repeat steps with remaining items				Other
11. Ask groups if their predictions were correct.				
Comments:	Accommodations	Initials	Remediation Activities	
	Extended Time			
Set up includes: distributing materials to each group	Preferential Seating			
Materials to distribute include: magnet, magnetite rock, paper clips, cork, & magnet handout.	Testing Accommodation			
	Segmented Assignments			
To extend the activity , have the group perform more tests of magnetism with common items in classroom, such as bits of paper, an eraser, chalk, coins, etc.	Copy of Teacher Notes			
	Assignment Length		Enrichment Activities	
	Communication		Cooperative learning	
	Assignment Notebook			
	Peer Tutor		Character Education	
Homework:	Other: Copy of chart		Respect for environment	

Non Instructional Events _____



Magnets

Name of the writer: _____

Your job is to **write** down the group's names and answers to the experiment.

Name of the experimenter: _____

Your job is to **test** each item to see if it attracted to the magnet.

Name of the examiner: _____

Your job is to **answer** the question, "Was the item attracted to the magnet?" Do this for the paper clip, cork, and the rock.

Will item be attracted to the magnet?

Was item attracted to magnet?

PAPER CLIP:

CORK:

ROCK:

Magnets “Teacher Cheat Sheet”

Set Up:

Divide class into groups of 3.

Assign each student a role as the “writer,” “examiner,” or “experimenter.”

Distribute magnets and items for testing (paper clips, magnetite rock *13*, and cork)

Distribute “Magnets” handouts (one per group).

Directing discussions:

Magnetism:

Magnets have a north pole and a south pole, each attracted to the corresponding poles (north and south) of the earth. This is the principle of how a compass works.

Like-poles of magnets repel each other, and opposite poles attract. This creates a force that can push or pull magnets or magnetic items.

Some naturally occurring stones are magnetic, such as magnetite.

Naturally occurring magnets are magnetized over very long periods of time by the earth’s magnetic field.

A piece of iron can be magnetized by stroking it with a magnet.

The extent of how a piece of metal can be magnetized varies. “Soft” magnetic materials, such as iron, can be charged easily, but lose their charge quickly. In contrast, “hard” magnetic material, like cobalt & nickel, is difficult to charge, but tends to retain its magnetism.

Magnets are used in industry and are very important. Some strong magnets are used to pick up cars and other heavy metal items. Magnets are also used in tape recorders, computers and computer disks, and in the medical field (MRI’s).

Experiment:

Some items are magnetic and respond to a magnet. Others do not.

The “writer” will write each member’s name by his or her assigned task and will also write the group’s predictions and results.

The “experimenter” in each group will take the magnet and pick the magnetite rock, cork, or paper clip to begin the experiment.

Then “experimenter” tells the “writer” which item he/she has selected.

The group makes a prediction (hypothesis) as to whether the item will be attracted to the magnet.

The writer then writes the groups prediction in the first column adjacent to the correct item.

The “experimenter” then exposes the item to the magnet.

Then tell the “examiner” to observe if the item was attracted to the magnet. The writer then writes “Yes” or “No” in the second column.

Have groups swap items and repeat steps for the other two items.

Other classroom items, such as chalk, coins, erasers, may be used to extend the project if needed.

Finally, discuss the class’s predictions with the results. Where they what they expected?