Name _____ Date _____

Magnetism

How are electric charges and magnetic fields related?

Before You Read

Before you read the chapter, think about what you know about magnetism. Record three things that you already know about magnetism in the first column. Then write three things that you would like to learn about in the second column. Complete the final column of the chart when you have finished the chapter.

K What I Know	W What I Want to Learn	L What I Learned

Chapter Vocabulary

Lesson 1	Lesson 2	Lesson 3
NEW magnet magnetic pole magnetic force magnetic material ferromagnetic element magnetic domain temporary magnet permanent magnet **ACADEMIC** align	**NEW** electromagnet electric motor **ACADEMIC** reverse	**NEW** electric generator direct current alternating current turbine transformer **REVIEW** hydroelectric

Lesson 1 Magnets and Magnetic Fields

Scan *Lesson 1. Read the lesson titles and bold words. Look at the pictures. Identify three facts you discovered about magnets and magnetic fields. Record your facts in your Science Journal.*

Main Idea

Magnets

I found this on page _____.

Define magnet, *and record two examples of common devices that use* magnets.

Magnet: _____

_____

1. _____

2. _____

Magnetic Poles

I found this on page _____.

Contrast *the* magnetic forces *between different arrangements of* magnetic poles.

Arrangement of Poles	Force (Attracts or repels?)
North pole to north pole	
North pole to south pole	
South pole to south pole	

Magnetic Fields

I found this on page _____.

Diagram *the magnetic field of a bar* magnet.

Main Idea

Details

Earth's Magnetic Field

I found this on page _____.

Explain *two events related to Earth's magnetic field.*

Event	Explanation
A compass points north	
Aurora	

Magnetic Materials

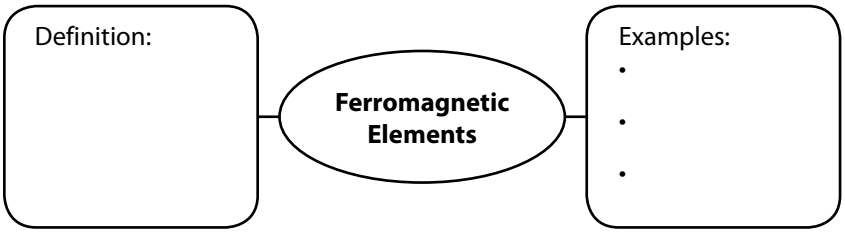
I found this on page _____.

Analyze *statements about* magnetic materials. *Decide whether each statement is true or false; explain your reasoning.*

Statement	T or F	Explanation
All magnets are magnetic materials.		
All magnetic materials are magnets.		

I found this on page _____.

Characterize ferromagnetic elements.



Main Idea

I found this on page _____.

How Magnets Attract Magnetic Materials

I found this on page _____.

Details

Model magnetic domains *in groups of atoms as described below. Draw and label each material. Use these labels:*

• magnet • non-magnet • magnetic material.

16 atoms that are not arranged in magnetic domains	16 atoms arranged in 4 magnetic domains that do not line up	16 atoms arranged in 4 magnetic domains that line up

Differentiate *a* temporary magnet *from a* permanent magnet. *Explain the reasons for the difference.*

Temporary Magnet	Permanent Magnet
Definition:	Definition:
Reason:	Reason:

Analyze It Think about the materials that you encounter every day at home and at school. Which ones are generally magnetic? How does your observation relate to why Earth has a magnetic field?

_____

_____

_____