

Chapter 21 Magnetism

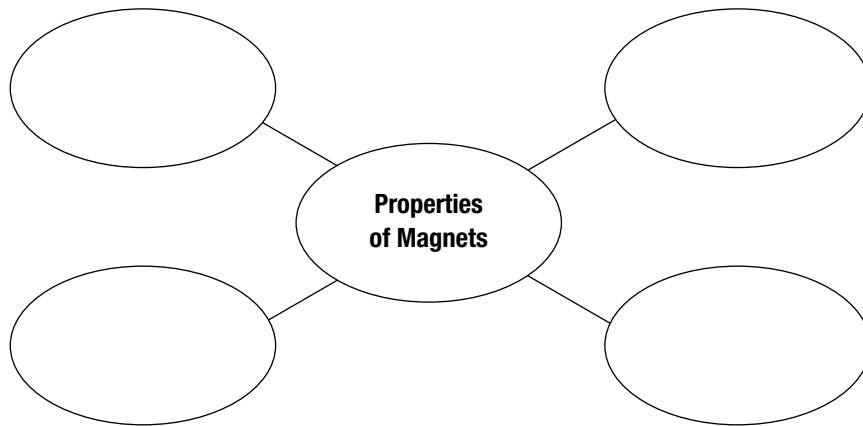
Section 21.1 Magnets and Magnetic Fields

(pages 630–633)

This section describes magnetic forces and magnetic fields. Characteristics of magnetic materials also are discussed.

Reading Strategy (page 630)

Using Prior Knowledge Before you read, copy the diagram below and add what you already know about magnets to the diagram. After you read, revise the diagram based on what you learned. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.



1. In the year 1600, William Gilbert published a book explaining the properties of _____.

Magnetic Forces (page 630)

2. Is the following sentence true or false? Magnetic force can be exerted on moving charges, as well as on iron or on another magnet.

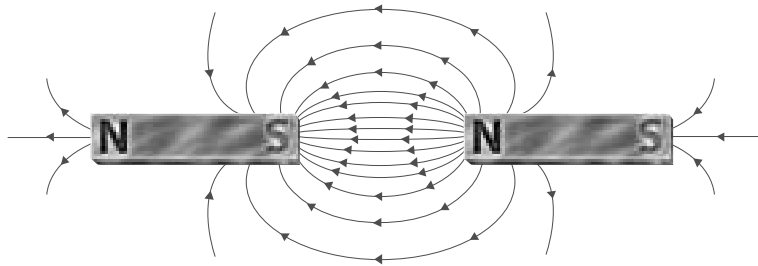
3. What did William Gilbert discover when he used a compass to map forces around a magnetic sphere? _____

4. Circle the letter of each sentence that is true about magnetic force.
 - a. Two magnets that approach each other may attract or repel.
 - b. Magnetic forces do not vary with distance.
 - c. Opposite magnetic poles repel one another.
 - d. Magnetic forces act over a distance.

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Magnetic Fields (pages 631–632)

For questions 5 and 6, refer to the figure below.



5. Where is the magnetic field the strongest? _____

6. Based on this figure, what would you expect to happen when the north pole of one magnet faces the south pole of another magnet?

7. Circle the letter of each sentence that is true about magnetic fields.

- a. Magnetic fields surround a magnet and can exert a magnetic force.
- b. Field lines begin near the south pole of a magnet and extend toward the north pole.
- c. Iron filings are most attracted to areas where the field is strongest.
- d. A magnetic field is strongest near the north and south poles of a magnet.

8. The area that is influenced by the magnetic field surrounding Earth is called the _____.

Magnetic Materials (pages 632–633)

Match each term with its description.

Description	Term
_____ 9. Can be magnetized because it has many domains	a. ferromagnetic material
_____ 10. Has randomly oriented domains	b. magnetic domain
_____ 11. Region that has many atoms with aligned magnetic fields	c. nonmagnetized material

12. What can cause the realignment of magnetic domains in a material?
