

**STUDY GUIDE**

**Chapter 16**

**Matter and Temperature**

Match the definition in Column II with the term in Column I. Write the letter of the correct definition in the blank on the left.

**Column I**

**Column II**

- |                                   |  |
|-----------------------------------|--|
| _____ 1. kinetic theory of matter | a. water vapor   |
| _____ 2. plasma                   | b. state of matter with no definite shape but with definite volume   |
| _____ 3. crystals                 | c. solid which is not made of crystals                               |
| _____ 4. solid                    | d. state of matter that has no definite shape and no definite volume |
| _____ 5. amorphous material       | e. Matter expands when it gets hotter and contracts when it cools.   |
| _____ 6. steam                    | f. state of matter with definite shape and definite volume           |
| _____ 7. thermal expansion        | g. water in the solid state  |
| _____ 8. liquid                   | h. Tiny particles in motion make up all matter.                      |
| _____ 9. gas                      | i. particles arranged in repeating geometric patterns                |
| _____ 10. ice                     | j. gaslike mixture of charged particles                              |

Use the words in the box to fill in the blanks.

shape	vibrate	plasma	energy
spread	volume	contracts	crystals
heated	position	flow	separate

In solids, particles move back and forth, but do not change \_\_\_\_\_  
 Different kinds of solids have \_\_\_\_\_ of different shapes. Particles in a liquid have more energy than do solid particles. Liquid particles can \_\_\_\_\_ over and around each other. Because of this kind of particle motion, liquids are able to \_\_\_\_\_. Because particles of a liquid are very close to one another, a liquid has a definite \_\_\_\_\_. The particles in a gas have more \_\_\_\_\_ than do liquid particles. Gas particles can completely \_\_\_\_\_ from one another. A gas does not have a definite \_\_\_\_\_ or volume. The most common form of matter in the universe is \_\_\_\_\_. Matter expands when it is \_\_\_\_\_. Matter expands because particles \_\_\_\_\_ apart in all directions. Matter \_\_\_\_\_ when it is cooled.

**REINFORCEMENT**

**Chapter 16**

**Matter and Temperature**

Answer the following questions in the blanks provided. Use complete sentences where appropriate.

1. What are the three common states of matter?

a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_

What is the fourth state of matter? \_\_\_\_\_

2. Complete the following chart describing the shape and volume for the three common states of matter.

State of Matter	Volume	Shape
Solid		
Liquid		
Gas		

How does the fourth state of matter differ from the other three? \_\_\_\_\_

\_\_\_\_\_

3. Use the kinetic theory of matter to explain the behavior of the three common states of matter. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. In general, when you heat a substance, it expands. This phenomenon is called thermal expansion. Use the kinetic theory to explain thermal expansion. Give an example of thermal expansion that you have observed.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_