

Name \_\_\_\_\_

Date \_\_\_\_\_

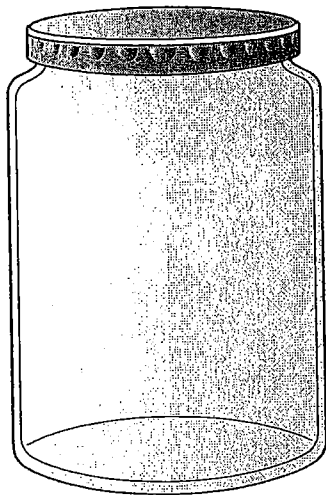
Use with textbook pages 246–253.

## Solids, liquids, and gases

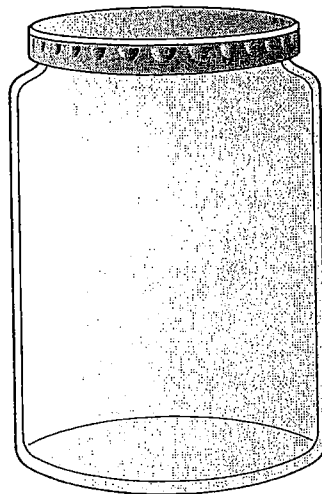
Complete the following table to describe three states of matter. The table has been partially completed to help you.

	Solid	Liquid	Gas
shape		not fixed; takes the shape of the container	
volume	fixed volume		
spaces between particles			
movement of particles			can move freely and quickly in all directions in the container

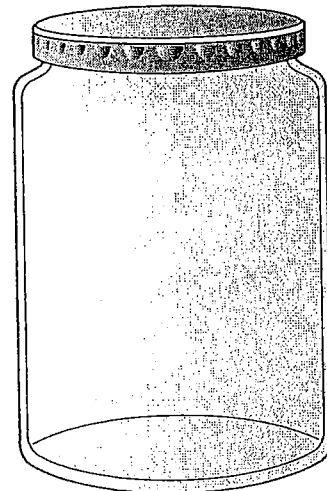
In each of the jars below draw the particles in a gas, a liquid, and a solid. Make sure to indicate whether the particles are moving or vibrating in your diagrams.



solid



liquid



gas

Use with textbook pages 246–253.

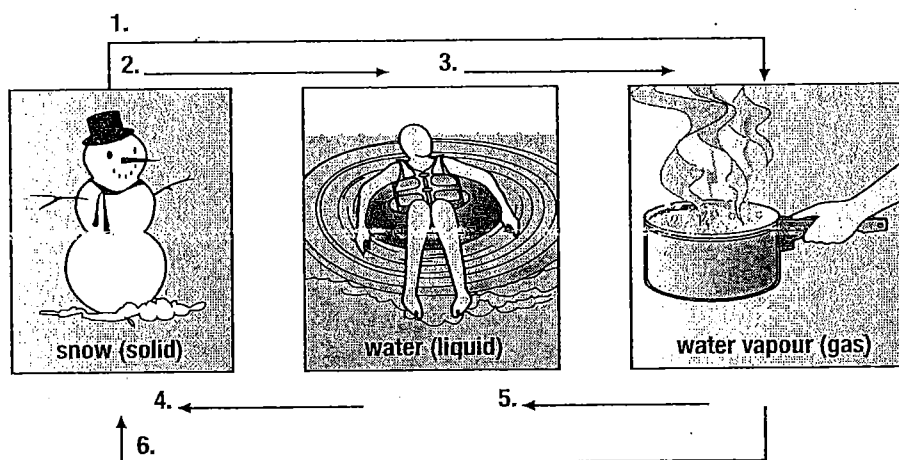
## What's the matter?

### Vocabulary

condensation  
deposition  
evaporation

melting  
solidification  
sublimation

Use the terms in the vocabulary box to label the diagram. Place the terms on the numbered arrows.



Complete the following table by describing the change of state. The table has been partially completed to help you.

	Change of state	Heat added or released
condensation		released
deposition		
evaporation	liquid to gas	
melting		added
solidification		
sublimation		

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## Expand and contract

Vocabulary	
condensation	melting
contracts	move around quickly
deposition	rises
evaporation	slide past each other
expands	slower
falls	solidification
faster	state of matter
kinetic molecular theory	sublimation
mass	vibrate
matter	volume

Use the terms in the vocabulary box to fill in the blanks. Use each term only once. You do not need to use all the terms.

- \_\_\_\_\_ is the amount of material that makes up something.  
 \_\_\_\_\_ is the amount of space that a material takes up.  
 Anything that has mass and volume is called \_\_\_\_\_.
- When you add energy to matter, its temperature \_\_\_\_\_.
- \_\_\_\_\_ is the process of a solid changing to a liquid.  
 \_\_\_\_\_ is the process of a solid changing directly to a gas.
- \_\_\_\_\_ is the process of a liquid changing to a gas.  
 \_\_\_\_\_ is the process of a liquid changing to a solid.
- \_\_\_\_\_ is the process of a gas changing to a liquid.  
 \_\_\_\_\_ is the process of a gas changing to a solid.
- Particles in a solid are packed so close together they can only \_\_\_\_\_.  
 Particles in a liquid can \_\_\_\_\_.  
 Particles in a gas can \_\_\_\_\_.
- When you remove energy from particles they move \_\_\_\_\_ and the matter \_\_\_\_\_.
- The \_\_\_\_\_ explains how particles act when their spacing and movement change.

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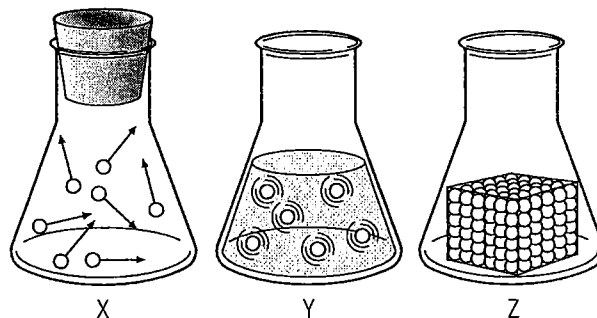
## States of matter

Match each Term on the left with the best Descriptor on the right. Each Descriptor may be used only once.	
Term	Descriptor
1. _____ mass	A. amount of matter in an object
2. _____ matter	B. amount of space an object takes up
3. _____ volume	C. anything that has mass and volume
	D. total energy of the particles in an object

Circle the letter of the best answer.

- Which of the following is not an example of matter?
  - heat
  - solids
  - water
  - oxygen
- What does the kinetic molecular theory explain?
  - how particles act when their spacing and movement change
  - how to determine the mass and volume of solids, liquids, and gases
  - how the kinetic energy in solids, liquids, and gases can be measured
  - how to find out the temperature of solids, liquids, and gases
- What happens to matter when energy is added to it?
  - the particles take up less space
  - the particles decrease in volume
  - the particles move around faster
  - the particles move around slower

Use the following diagram to answer questions 7 to 9.



- Both Y and Z have definite volume.
  - The statement is true.
  - The statement is false.
  - You cannot tell from the diagram.
- The particles in Z can flow past each other.
  - The statement is true.
  - The statement is false.
  - You cannot tell from the diagram.
- Which of the following correctly compares the amount of energy in the particles of X and Z?
  - The particles in X have less energy than the particles in Z.
  - The particles in X have more energy than the particles in Z.
  - The particles in both X and Z have the same amount of energy.
  - You cannot tell from the diagram.