

Chapter 9

Use with Text Pages 246-251

REINFORCEMENT

Composition of Matter

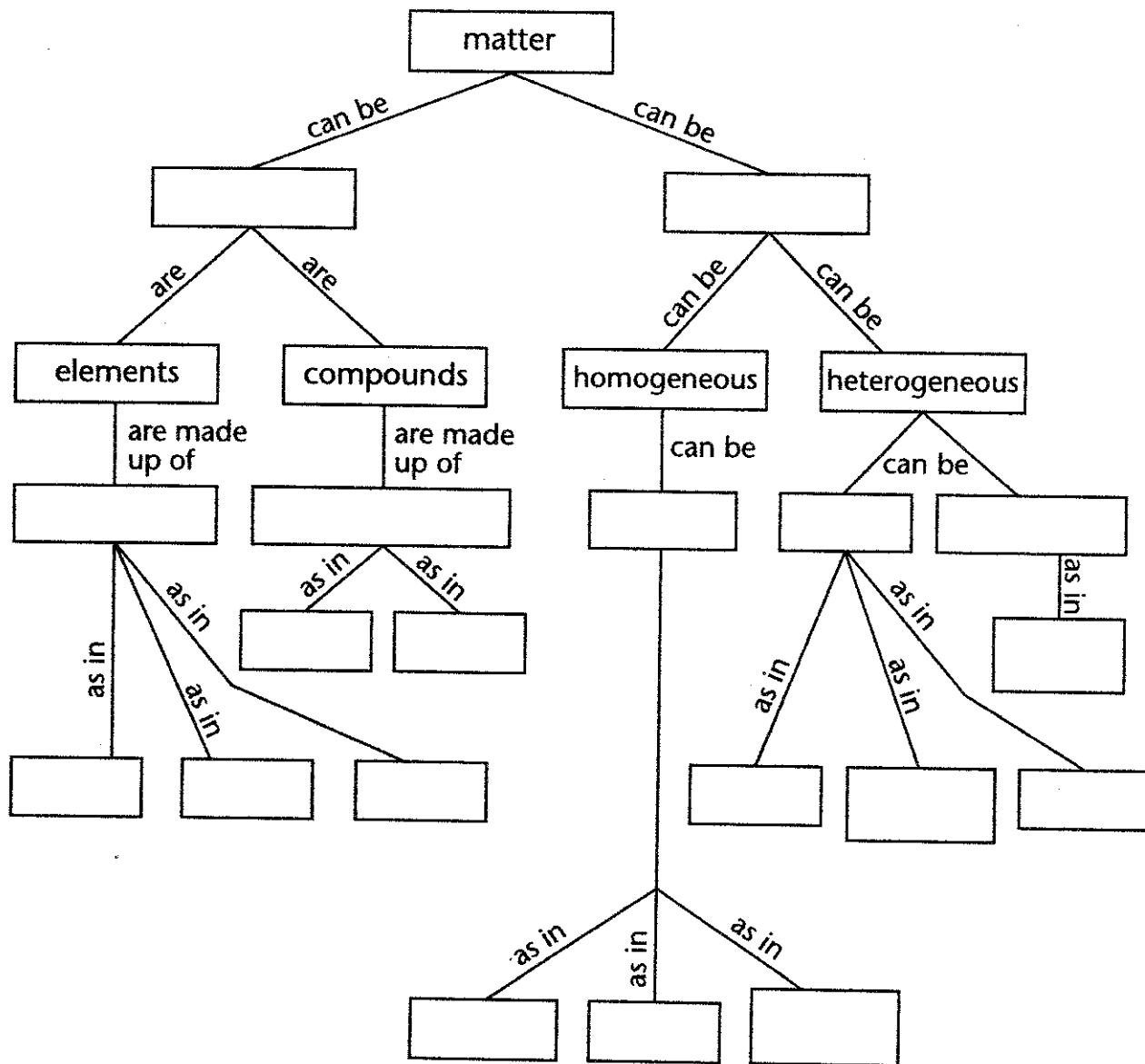
Use the words listed below to correctly complete the concept map.

atoms (different)
gold
oxygen
solutions
vinegar

atoms (same)
iron
salt
substances
water

colloids
mixtures
smoke
suspensions
whipped cream

fog
muddy water
soft drinks
syrup



Chapter 9

REINFORCEMENT

• The Colloid Connection

When Do $50 + 50 = 95$?

Read the following paragraphs. Answer the questions and make drawings in the spaces provided.

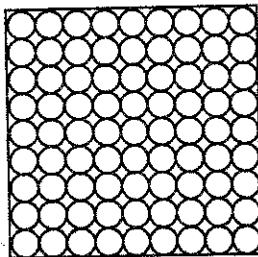
Karen did an activity in science class. She measured 50 mL of alcohol into one graduated cylinder and 50 mL of water into another graduated cylinder. She then emptied the 50 mL of alcohol into a 100-mL graduated cylinder. Then she emptied the 50 mL of water into the same 100-mL graduated cylinder that contained the alcohol. She then observed and recorded the total volume as 95 mL. Karen thought that she made a mistake in measuring, so she repeated the entire procedure and again observed that the total volume was 95 mL.

How could this be? She asked her teacher what she had done wrong. Her teacher said that Karen would be able to explain the results if she thought about it for a while.

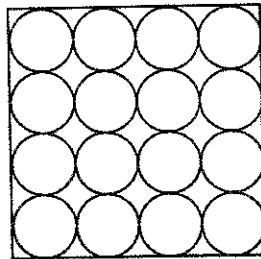
Karen went home from school and made some popcorn. To 500 mL of popped popcorn she added 5 mL of salt and noted that the total volume did not go above 500 mL. Karen then watched her four-year-old neighbor playing in his sandbox. He emptied a container of sand into a pail filled with pebbles, but his pail did not overflow. Karen could not wait until she went to school the next day. She could now explain how $50 + 50 = 95$.

1. What explanation was Karen going to give in science class? _____

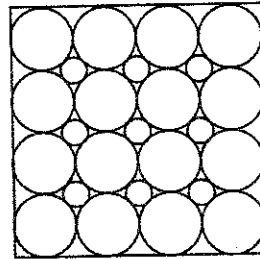
2. Use these drawings to help you explain.



a.



b.



c.

3. How can Karen's science class explanation help you explain how air pollution conditions can worsen in a city in a period of one day? _____

Chapter 9

Use with Text Pages 254–261

REINFORCEMENT

● Describing Matter

Analogies

Below are two sets of words. Complete the second set by choosing a word from those listed below the blank. The two words must be related in the same way as the first set of words.

EXAMPLE

letter:envelope::pillow:[case]
case, sheet, soft, bed

1. steam:water::water: _____
heat, molecules, ice, matter
2. solid:melting::liquid: _____
condensing, heating, mixing, vaporizing
3. physical:chemical::size: _____
burning, taste, solubility, acid
4. liquid:vaporizing::solid: _____
melting, freezing, decomposing, evaporating
5. iron:rust::silver: _____
reaction, oxygen, tarnish, water
6. chemical:rust::physical: _____
compound, condensation, solid, change
7. element:compound::oxygen: _____
water, hydrogen, matter, mixture
8. compound:mixture::chemical: _____
physical, separation, property, gas
9. hydrogen:water::carbon: _____
carbon dioxide, graphite, coal, gas
10. solid:steel::gaseous: _____
coal, air, water, gasoline
11. burning:candle::corrosion: _____
vaporization, physical property, copper, mixture.