

Section 5.1 The Particle Model of Matter

Name: _____ Date: _____

Read a small part of pages 117 to 120. Then answer the matching question. Fill in the blanks, circle a choice, or write a few words.

Page 117 The four main ideas

1 Four ideas in the particle model

Words: faster spaces particles moving

- a. All matter is made up of tiny _____.
- b. Particles are always _____.
- c. There are _____ between particles.
- d. Adding heat makes particles move _____.

2 Why is the particle model useful

- a. What does the model help explain? _____
- b. What does it tell us about particles? _____

Page 118 Solids and melting

3 Particles in a solid

- a. How are the particles held together? _____
- b. How big are the spaces between them? _____
- c. How do the particles move? _____

4 Melting solid to liquid

- a. Heat makes the solid particles vibrate faster / slower.
- b. They break away from their fixed _____.
- c. They can move more freely. The solid becomes a _____.

Page 118 Freezing and liquids

5 Freezing liquid to solid

- a. What do the particles lose as the liquid cools? _____
- b. Do they move faster or slower? _____
- c. What do they settle into? _____

6 Particles in a liquid

- a. Do liquid particles have spaces between them? YES / NO
- b. Are liquid particles still held close together? YES / NO
- c. They can _____ past each other.
- d. Does a liquid have a fixed volume? YES / NO

7 A liquid in a container

Why does a liquid take the shape of its container?

Page 118 Evaporation and condensation

8 Evaporation liquid to gas

- a. When a liquid absorbs heat, its particles move faster / slower.
- b. Some particles gain enough energy to break _____.
- c. The liquid becomes a _____.

9 Condensation gas to liquid

- a. What do the particles lose as the gas cools? _____
- b. Do they move faster or slower? _____
- c. What does the gas become? _____

Page 118 Gas particles

10 Particles in a gas

- a. Are gas particles held close together? _____
- b. How big are the spaces between them? _____
- c. Which directions do gas particles move? _____
- d. What does a gas fill? _____

Page 119 Sublimation

11 Solid straight to gas

- a. What is sublimation? _____
- b. Does the solid become a liquid first? _____
- c. Give one example from the page. _____

Pages 119 and 120 Fixed mass

12 Mass volume and shape

Fixed means it stays the same. A fixed volume takes up the same amount of space. Think about the same amount of matter, with nothing added or taken away. Write YES or NO.

State	Fixed mass	Fixed volume	Fixed shape
Solid	_____	_____	_____
Liquid	_____	_____	_____
Gas	_____	_____	_____

Page 120 What happens to the particles

13 Four examples

For each example, circle one choice for speed and one for space. Draw dots in the boxes to show particles before and after.

a Butter is warmed on a stove

Change: solid to liquid Particles move: faster / slower

Particles get: farther apart / closer together

Before	After

b Water vapour cools and forms raindrops

Change: gas to liquid Particles move: faster / slower

Particles get: farther apart / closer together

Before	After

c Liquid wax hardens

Change: liquid to solid Particles move: faster / slower

Particles get: farther apart / closer together

Before	After

d Water boils

Change: liquid to gas Particles move: faster / slower

Particles get: farther apart / closer together

Before	After