


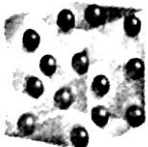

## SCIENCE 8 – STATES OF MATTER WORKSHEET

NAME: KEY

Vocabulary			
Contracts	Kinetic molecular theory	Move around quickly	State of matter
Expands	Mass	Slide past each other	Vibrate
Faster	Matter	Slower	Volume

*Use your notes from pages 1 – 2 and the terms in the vocabulary box to fill in the blanks for the following nine questions. You will not need to use every term.*

- 1) MASS is the amount of matter that makes up something.
- 2) VOLUME is the amount of space that a material takes up.
- 3) Anything that has mass and volume is called MATTER.
- 4) When you add energy to matter, the particles move FASTER and the matter EXPANDS.
- 5) Particles in a solid are packed so close together they can only VIBRATE.
- 6) Particles in a liquid can SLIDE PAST EACH OTHER.
- 7) Particles in a gas can MOVE AROUND QUICKLY.
- 8) When you remove energy from particles they move SLOWER and the matter CONTRACTS.
- 9) The KINETIC MOLECULAR THEORY explains how particles act when their spacing and movement change.
- 10) Match each Term on the left with the best Descriptor on the right. Each Descriptor may be used only once

Term		Descriptor					
C	Mass	A.	Anything that has mass and volume				
D	Solid	B.	Amount of space an object takes up				
E	Gas	C.	Amount of matter in an object				
A	Matter	D.		E.		F.	
F	Liquid						
B	Volume						

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

	Solid	Liquid	Gas
Shape	FIXED (DEFINITE)	Not fixed; takes the shape of the container	← SAME AS
Volume	Fixed volume (DEFINITE)	FIXED/ DEFINITE	NOT FIXED/ INDEFINITE
Spaces between particles	PARTICLES MOST TIGHTLY PACKED	PARTICLES PACKED CLOSELY BUT, ↓	MOST OF THE 3 STATES
Movement of particles	VIBRATE IN PLACE	CAN SLIDE PAST EACH OTHER	Can move freely and quickly in all directions in the container

12) Use your knowledge of the kinetic molecular theory to explain the following statements:

(a) Solids have a definite shape because PARTICLES HAVE LOW ENERGY & ARE TIGHTLY PACKED

(b) Liquids and gases flow because THEIR PARTICLES ARE NOT VERY TIGHTLY PACKED & THEY HAVE ENOUGH TEMP./ENERGY TO MOVE

(c) Ice cubes form in the freezer because LIQ. H<sub>2</sub>O MOLECULES COOL, AND THEY STOP MOVING FREELY & TAKE ON THE SHAPE OF THE CONTAINER

(d) Ice cream melts quickly on a hot day because HEAT = ENERGY = ABILITY OF MOLECULES TO MELT & FLOW

(e) Gases do not have a definite shape because HAVE HIGH ENERGY, SO MOVE FREELY