Answer

Particle Model and Phase Change Worksheet

1. Match each type of physical change listed with one of the statements below.

A. Fusion	D. Sublimation
B. Solidification	E. Condensation
C. Deposition	F. Evaporation

a) Humidity in the air from a shower transformed into droplets on the mirror — E

b) Melting ice that has built up under skis — A

c) Clothes drying in the sun — F

d) Making frozen treats with fruit juice — B

e) Snow crystals forming from water vapour in the air — C

f) Using dry ice to make smoke during a concert — D

g) CO_2 being released from a fire extinguisher — C

h) Moth balls releasing a bad odour — D

2. Check each statement that applies to the particle model of matter.

a) Particles of matter are in constant motion. — ☑

b) The smaller the molecules, the faster they move. — ☐

c) Particles move more quickly as temperature rises. — ☑

d) Forces of attraction can hold particles together. — ☑

e) The particle model explains the organization of the three states of matter. — ☑

3. Match each statement below with one of the following states of matter.

State:	A. Gas	B. Liquid	C. Solid

a) You need a container to carry me. — A & B

b) My particles can move freely. — A

c) I can be picked up and held. — C

d) My particles are held together loosely. — B

e) My particles are very ordered. — C

f) When I change container, I keep my volume, but not my shape. — B

g) I can be moulded and I retain my shape. — C

4. How do we define matter?

Matter is anything that has volume and mass.

5. What holds the particles of a solid together?

Forces of attraction.

6. Using the particle model, describe two differences between a solid, a liquid and a gas.

SOLID	LIQUID	GAS
Particles are very close.	Very close together	Very far apart.
Strong forces of attr.	Weaker forces of attr.	Not bound.
Very Organized.	Fairly disorganized.	Lots of space
Very little freedom	More freedom.	move freely
Can only vibrate in one spot	Slide over eachother	

7. The particles in a sample of matter are very close together.

a) Using only this information, can you confirm that this sample is a solid? Explain your answer.

No. It could also be a liquid.

b) What other information could you use to be certain that the sample is a solid?

particles are very organized little freedom, space, vibrate in one spot

8. For each of the examples below determine of there in an increase **or** decrease in temperature and an increase **or** decrease in energy.

	Increase or decrease in temp.	Increase or decrease in energy
Ice melts	increase	increase
Water evaporates	increase	increase.
Water freezes	decrease	decrease
Gas becomes a liquid	decrease.	decrease.