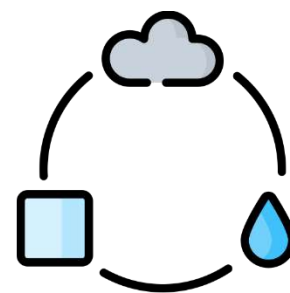


Name \_\_\_\_\_ Date \_\_\_\_\_



## CHANGES OF STATES OF MATTER QUIZ –Answer Key

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### 1. What is matter?

**Matter is anything that has mass and occupies space.**

### 2. Complete each sentence with the correct word.

- A. Solid, liquid, and gas increase their **volumes** when heated.
- B. A solid has a definite **shape**.
- C. The point at which solid starts to melt is called **Melting Point**.
- D. A change of state from a liquid to a gas is called **Evaporation**.
- E. Gas expands much more than solid and **liquid**.
- F. During **sublimation**, particles of a solid don't pass through the liquid state as they form a gas.
- G. In which state of matter are the particles most closely held together?  
**Solid**
- H. Most substances can exist in the three states of matter (solid, liquid, and gas) depending on environmental conditions such as **temperature and pressure**.
- I. The 4<sup>th</sup> and 5<sup>th</sup> state of matter are **Plasma and Bose-Einstein condensate**.

### 3. Match the description to the corresponding state of matter

Description	State of Matter
It has a fixed shape. It doesn't always take the shape of its container	<b>Solid</b>
It has weight and it takes the shape of the container	<b>Liquid</b>
It does not have a shape and it moves around freely or it can take the shape of its container	<b>Gas</b>

### 4. State the name used to describe each of the following changes of state.

- a) solid to liquid: **Melting**
- b) gas to liquid: **Condensation**
- c) liquid to solid: **Freezing**
- d) solid to gas: **Sublimation**
- e) liquid to gas: **Evaporation**

5. Fill the table below by giving properties of states of matter

<b>Solid</b>	<b>Liquid</b>	<b>Gases</b>
<b>Fixed shape</b>	No fixed shape	<b>No fixed shape</b>
Cannot be compressed	<b>cannot be compressed</b>	Can be compressed
<b>Fixed volume</b>	Fixed volume	<b>No fixed volume</b>
<b>Particles vibrate in fixed positions</b>	<b>Particles slide past each other</b>	Particles move freely

6. A substance has a melting point of  $-210^{\circ}\text{C}$  and a boiling point of  $-196^{\circ}\text{C}$ .  
What is its state at  $-190^{\circ}\text{C}$ ?

**$-190^{\circ}\text{C}$  is higher than the boiling point of the substance so it will be in the gaseous state.**

7. In what state of matter do electrons tear away from their atomic nucleus and flow around freely (ionized)? (*Hint: This type of matter comprises 99% of the universe*).

**Plasma state**

8. The behavior of matter in different states is governed by various physical laws. According to you what are the factors that determine the state of matter?

- **Temperature**
- **Pressure**
- **Mass and Volume**

9. Wet clothes are put on a washing line to dry. The water in the clothes turns into water vapor in the air as they dry.

A. Name the change as water turns into water vapor: **Evaporation**

B. Rain forms from water vapor in the air. Name this change:

**Condensation**

C. The clothes dry much faster on a sunny day, explain why in terms of particles.

**The sun provides heat energy, which is transferred to the particles, so the particles in the liquid are heated and start to move around more quickly. The movement of the liquid particles overcomes the forces of attraction between the particles and the substance evaporates.**

### 10. Match the term with its example

  **b**  Boiling point

a. As a pot of water is heated, bubbles form below the surface and rise

  **d**  Evaporation

b. A Temperature of 100°C

  **a**  Boiling

c. Clouds form from water vapor in the sky

  **c**  Condensation

d. A puddle dries up after a rain shower.