

# Revision Sheet #1 | Lower Secondary

## Stage (6-8)

1<sup>st</sup> Semester | 2023-2024

**Subject:** Chemistry

**Chapter 1:** The Particle Model

**Objectives:**

- Define evaporation, boiling, condensation, melting, freezing and sublimation.
- Describe how the arrangement, separation and movement of particles change when a substance changes its state.
- Make conclusions from data

**1 – Use the words and phrases to copy and complete the sentences below. You may use each word or phrase once, more than once, or not at all.**

*a little*      *close together*      *far apart*      *gas*      *liquid*  
*much*      *solid*      *vibrate on the spot*      *move around from place to place*  
*move around and slide over each other*

Copper exists in three states – solid, liquid and ..... In the solid state, its particles ..... The particles are ..... When copper melts, it changes state from ..... to ..... Its particles start to ..... They get ..... further apart. If copper is heated to 1084°C, it changes from the liquid to the ..... state. Its particles get ..... further apart and the start to .....

**2- Choose the correct answer.**

- Which of the following choices is not an example of a change of state?
  - a) A puddle of water drying out
  - b) Table salt dissolving in a pot of warm water
  - c) Ice melting in a glass of soda
  
- In a research lab a technician placed a pot with water on a gas stove. The technician notices bubbles forming throughout the water. What process caused the bubbles to form?
  - a) Sublimation
  - b) Boiling
  - c) Evaporation

- A handful of ice cubes were placed on a pan held over a tea pot that was filled with water and set over high heat. Eventually the water comes to a boil and you notice water droplets forming on the pan. What is the correct order of the changes of state involved in this scenario?



- a) Liquid----> sublimation----> gas ---->deposition----> liquid
- b) Liquid----> evaporation----> gas----> deposition----> liquid
- c) Liquid----> evaporation----> gas----> condensation----> liquid

- What happens to the movement of the particles in a substance when the energy is increased?

- a) Speed Up
- b) Slow Down
- c) Stay the same

- When energy is decreased in a gas, what change in state is happening?

- a) Boiling
- b) melting
- c) Condensation

**3- Describe the arrangement, movement and separation of particles before and after sublimation.**

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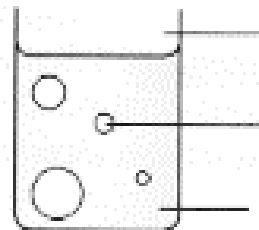
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**4- Choose the correct term to complete the following statements.**

- A space with no particles in it is called .....
- The temperature at which a substance boils is known as its ....., while the temperature at which the substance melts is called .....
- The change of state from liquid to solid is ....., and the opposite change of state will be .....

5- Write the letter of each label next to the correct line in the diagram.

- A Water in the liquid state
- B Water in the gas state (steam or vapour)
- C Mixture of air and steam



6- The table gives the melting points and boiling points of five substances.

a- Which substance has the highest melting point?

.....

b- Which substance has the lowest boiling point?

.....

c- Name a substance from the table that is in the gas state at 20°C. ....

d- Name all the substances that are in the solid state at 20°C. ....

e- What is the state of bromine at 20°C? .....

f- Explain what happens when bromine is heated from 20°C to 100°C?

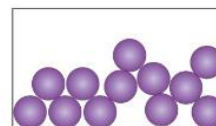
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Substance	Melting point (°C)	Boiling point (°C)
bromine	-7	59
chlorine	-102	-34
iodine	114	184
osmium	3000	5000
tungsten	3422	5555

7- The diagram shows the particle of a substance in its liquid state.

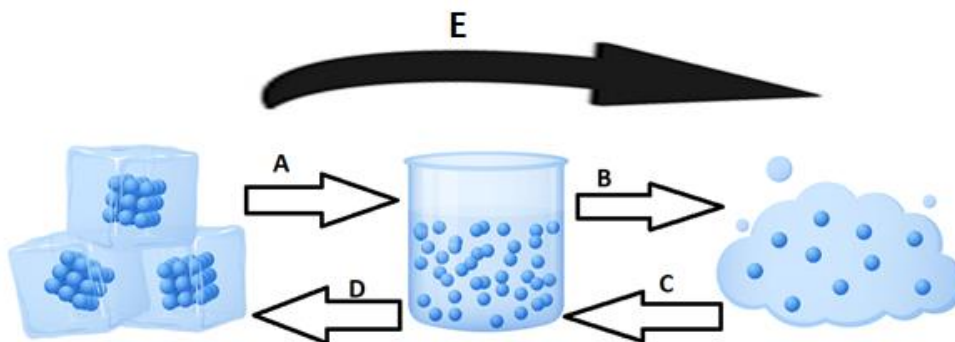
a-What can you do to make the particles in the liquid move faster?



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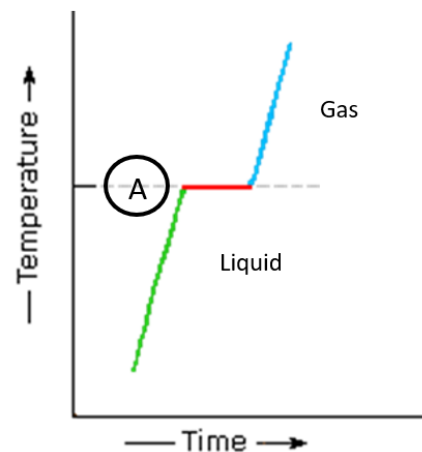
b-Draw a diagram to explain what happens to the liquid when it evaporates.

7- In the diagram below, each arrow represents a change of state.



- Write the letter that shows the following:  
 Freezing                       Sublimation                       Condensing
- Give the letters that show a decrease in energy.
- Give the letters that show an increase in energy.

8- The graph shows changes of state of a substance.



- The liquid turns into a gas when it reaches point (A). What is point (A) called?  
 .....
- Explain why the temperature stops rising at point (A).  
 .....
- Explain the process in which liquids turn into gases using the particle theory.  
 .....  
 .....