Phases of Matter
Questions
Module 1.1

Name: _____

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Question 1

1.1. D
1.2. C
1.3. D
1.4. C
1.5. A

Question 2

2.1.C
2.2.A
2.3.E
2.4.D
2.5.B

Question 3

3.1. No, evaporation takes place at temperature lower than boiling point.
3.2. Increases.
3.3. The tempo at which a substance boils is faster than the tempo at which it evaporates.

Question 4

4.1. True
4.2. False, viscosity increases with decrease in temperature.
4.3. True
4.4. False, the density of a liquid is higher than that of gas.
4.5. True

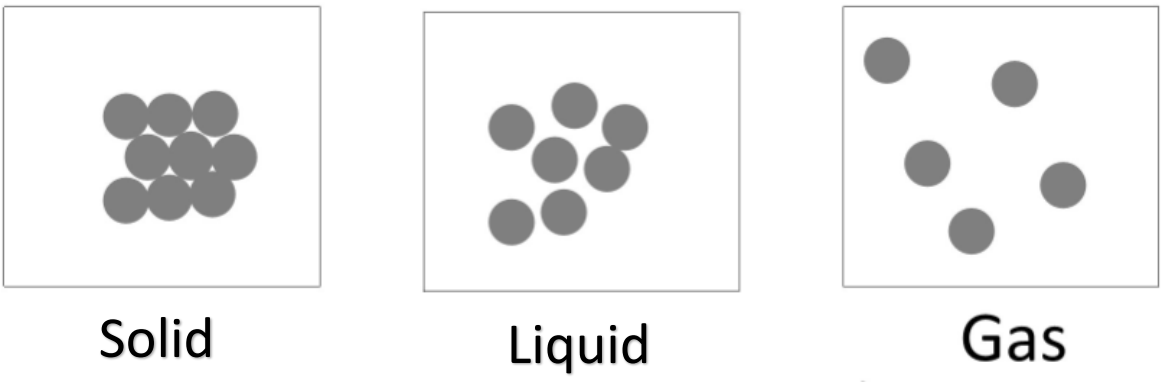
Question 5

5.1. a) Matter is compressed from **particles**.
b) The particles **move continuously**.
c) There are **spaces** between the particles.
d) The movement causes **collisions** with one another and the edges of the container.
e) Temperature is a measurement of the particles' ***average kinetic energy***.
f) **Gravitational forces** occur between particles that are close together, while **repulsive forces** occur between particles that come too close together.
g) A **phase change** takes place when the *energy* of the particles *change* and it leads to a *rearrangement* of the particles.

5.2. Kinetic energy is determined by the speed at which the particle moves. Particles move at different speeds due to the collisions they experience and they thus have different kinetic energies.

5.3. Colour, phase, volume and form
5.4. Pressure and temperature

5.5.



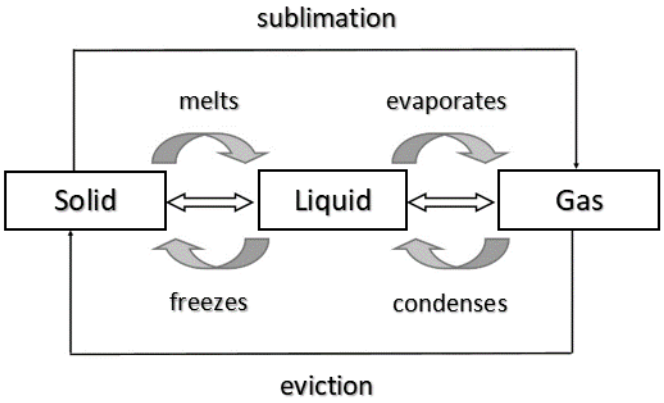
Solid: Particles are densely packed and vibrate against one another.
Liquid: Particles are less densely packed together and they vibrate and rotate.
Gas: Particles move freely around and are far apart.

Question 6

6.1. The energy matter possesses due to the movement of its particles.
6.2. Temperature at which a liquid changes to gas phase.
6.3. Temperature at which a solid changes to a liquid.
6.5. Temporary change in the form of a substance. Characteristics of the substances remain unchanged.
6.6. Temperature where a gas changes to a solid due to cooling.

Question 7

7.1.

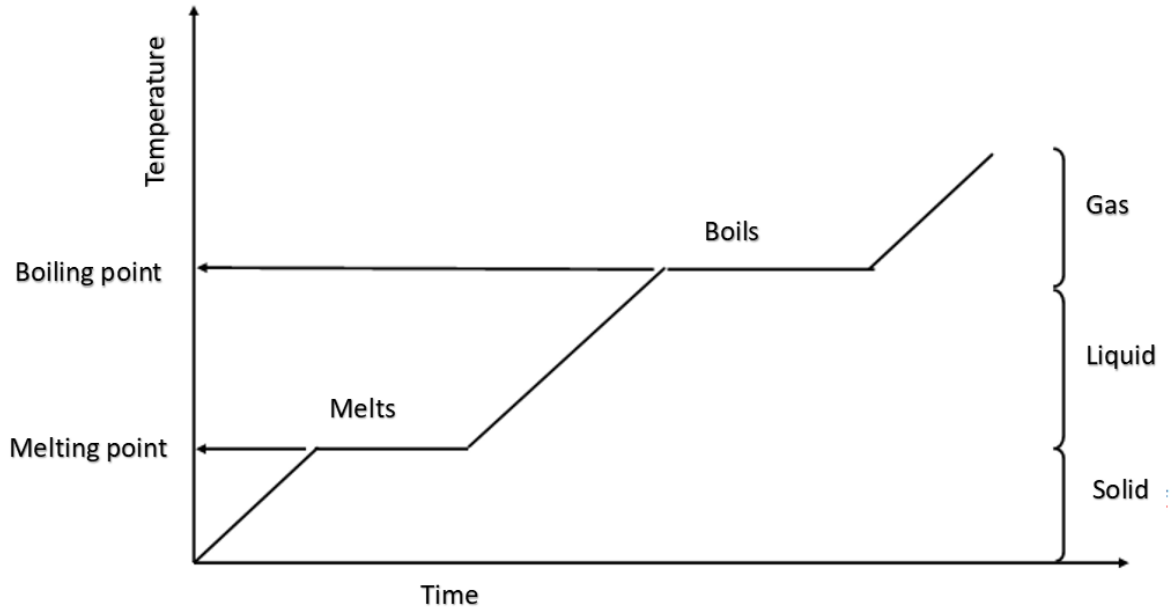


7.2. Form, phase, colour, temperature
7.3. Average kinetic energy of the substance remains constant. The additional energy added increases the potential energy. When it is already melted, the potential and kinetic energies increase.
7.4. With the increase in temperature, both the kinetic and potential energies increase. The temperature remains constant during the phase change, because the average kinetic energy remains constant. The added energy only changes the potential energy. When the phase changes, the potential and kinetic energies increase.

Question 8

Macroscopic characteristics	Solid	Liquid	Gas
Form	Maintains form	Adapts form of container	Fills entire container
Flow	No flow	Flows easily	Flows easily
Compressibility	Not compressible	Not compressible	Compressible
Spaces between particles	Small	Small	Larger
Energy of particles	Low	Medium	High
Movement of particles	Only vibrations	Vibrates and rotates	Free movement
Gravitational forces between particles	Strong	Medium	Weak

Question 9



Question 10

10.1. Rubidium, Sodium, Iron, Iodine
10.2. Bromine, Mercury
10.3. Carbon dioxide, Nitrogen dioxide, Oxygen
10.4. Iron, Iodine
10.5. None
10.6. Carbon dioxide, Bromine, Mercury, Nitrogen dioxide, Oxygen, Iodine