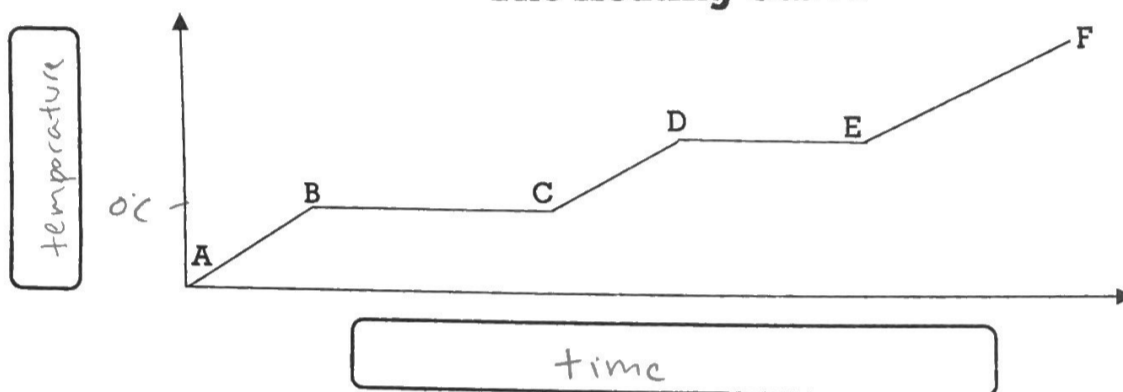


Heating & Cooling Curve Practice

YOYO: Answer the following questions using your knowledge of chemistry and explain your reasoning.

1. True or False: Boiling and melting happen at the same temperature.
False Boiling = $L \rightarrow G$
Melting = $S \rightarrow L$
2. True or False: Freezing and melting happen at the same temperature.
True Melting = $S \rightarrow L$
Freezing = $L \rightarrow S$
3. True or False: Temperature remains constant during a phase change.
True

The Heating Curve



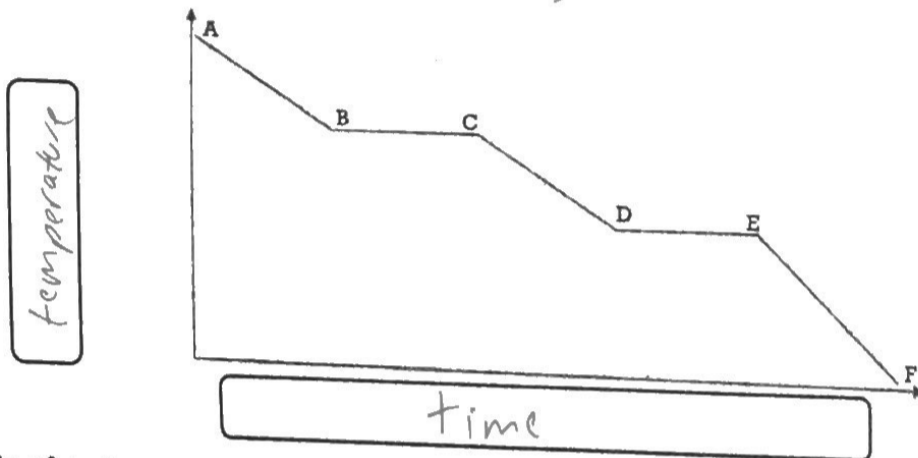
1. The state of matter represented by line AB is a solid
2. The state of matter represented by line CD is a liquid
3. The state of matter represented by line EF is a gas
4. The phase change represented from B \rightarrow C is called melting
5. During the phase change represented by line BC, the temperature is constant.
6. The phase change represented from C \rightarrow B is called freezing
7. In order to go from a liquid to solid, heat must be removed
8. When a solute such as salt is added to a solvent such as water, the freezing point decreases
9. Circle One: If the freezing point is lowered, the new temperature is (hotter/colder) than the original freezing temperature. circle One
10. True or False: The freezing point and the melting point occur at the same temperature. TRUE
11. The phase change represented from D \rightarrow E is called vaporization
12. In order to go from a liquid to a gas, heat must be added
13. During the phase change represented by line DE, the temperature is constant
14. When a solute such as salt is added to a solvent such as water, the boiling point increases
15. Circle One: If the boiling point is elevated/higher, the new temperature is (hotter/colder) than the original boiling temperature. circle One
16. The phase change represented from E \rightarrow D is called condensation
17. In order to go from a gas to a liquid, heat must be removed
18. The phase change from a solid directly to a gas is known as sublimation
19. The phase change from a gas directly to a solid is known as deposition
20. Temperature is the measure of average kinetic energy.
21. If Kinetic energy increases, P.E stays the same.
22. If Kinetic energy stays the same, P.E increases.
23. In segment AB, the temperature increases, therefore the kinetic energy increases, the P.E stays the same.

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 Teacher: _____ Period: _____ Class: _____

24. In segment BC, at 0 °C, the phase change that happens is melting, the temperature constant, therefore the kinetic energy is constant, the P.E increases.
25. In segment CD, the temperature goes from 0 °C to 100 °C, the K.E increases, the P.E is constant.
26. In segment DE, the phase change that happens at 100 °C is vaporization, the temperature is constant, kinetic energy is constant, Potential energy increases.
27. In segment EF, the temperature increases, K.E ↑, P.E is constant.

The Cooling Curve

- A cooling curve is obtained when a substance cools down and changes state.
- The cooling curve is the opposite of the heating curve. The temperature is decreasing, therefore the kinetic energy is also decreasing.



- The state of matter represented by line AB is a gas
- The state of matter represented by line CD is a liquid
- The state of matter represented by line EF is a solid
- The phase change represented from B → C is called condensation
- During the phase change represented by line BC, the temperature is constant
- The phase change represented from C → B is called vaporization
- In order to go from a liquid to solid, heat must be removed
- The phase change represented from D → E is called freezing
- To go from a liquid to a solid, heat must be removed
- During the phase change represented by line DE, the temperature is constant
- The phase change represented from E → D is called melting
- In order to go from a solid to a liquid, heat must be added
- The phase change from a gas directly to a solid is known as deposition
- The phase change from a solid directly to a gas is known as sublimation
- Temperature is the measure of average kinetic energy
- If temperature of a gas is decreases, K.E decreases, P.E stays the same
- If Kinetic energy stays the same, P.E decreases. ** This is the opposite of the heating curve.
- In segment AB, the temperature decreases, therefore the kinetic energy decreases, the P.E stays the same
- In segment BC, at 100 °C, the phase change that happens is condensation, the temperature is constant, therefore the kinetic energy is constant, the P.E decreases
- In segment CD, the temperature goes from 100 C to 0° C, the K.E decreases, the P.E remains the same
- In segment DE, the phase change that happens at 0 °C is freezing, the temperature is constant, kinetic energy is constant, Potential energy decreases
- In segment EF, the temperature decreases, K.E decreases, P.E remains the same