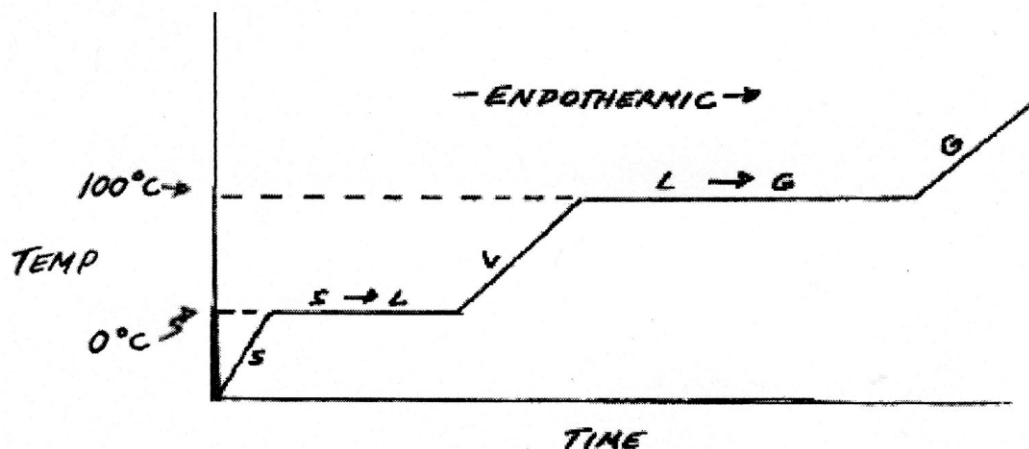


## HEATING CURVE

During a **phase change** (PE; position) there is **no change in temperature** (KE; speed).

-POTENTIAL ENERGY INCREASES→



In the opposite direction, it's a "Cooling Curve" which is exothermic.

## Calorimetry

$$\{q = m \cdot C \cdot \Delta T\}$$

$$\{q = m \cdot H_f\}$$

$$\{q = m \cdot H_v\}$$

1) How many joules are needed to raise the temperature of 30.0 g H<sub>2</sub>O from 50.0 °C to 70.0 °C?

REMEMBER: **1000 J = 1 kJ**; when converting from J to kJ divide by 1000 (move 3 decimal places to the left)

2) How many grams of ice can be melted by the absorption of 8,350 J at 0 °C?

**Note:** the same constant is used for freezing water, but it's energy released instead of absorbed.

3) How much heat is needed to boil 100. g H<sub>2</sub>O at 100 °C?

**Note:** the same constant is used for condensing water, but its energy released instead of absorbed.