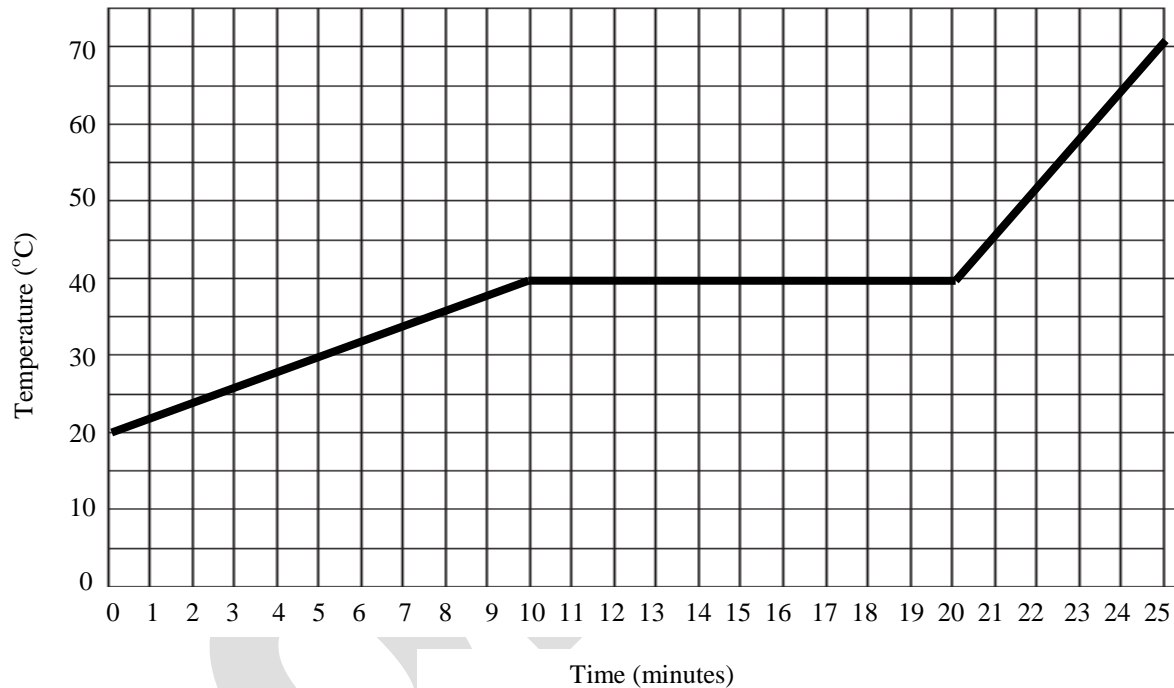


# Topic: Measurement and Graphing

**Aim:** How is rate of change determined on a graph?

Rate of Change and the Slope of a Line: The steeper the slope, the faster the rate.  
The more gradual (flatter) the slope, the slower the rate.

## Heating Curve of Unknown Substance X



Rate of Change during first 10 minutes: THIS FORMULA IS A DIFFERENT FORMAT FOR USE WITH A GRAPH:

$$\text{Rate of Change} = \frac{V_2 - V_1}{T_2 - T_1} = \frac{40 - 20 (\text{°C})}{10 - 0 (\text{min})} = 2 \text{ °C/min}$$

Rate of change between 10 and 20 minutes:

$$\text{Rate of Change} = \frac{V_2 - V_1}{T_2 - T_1} = \frac{40 - 40 (\text{°C})}{20 - 10 (\text{min})} = 0 \text{ °C/min}$$

Rate of Change between 20 and 25 minutes:

$$\text{Rate of Change} = \frac{V_2 - V_1}{T_2 - T_1} = \frac{70 - 40 (\text{°C})}{25 - 20 (\text{min})} = 6 \text{ °C/min}$$