



ST ANDREW'S SECONDARY SCHOOL

NAME

TEACHING
GROUP

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CHEMISTRY



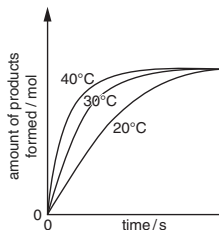
Rate of Reactions

Factors affecting Rate of Chemical Reactions: [Summary] & [Answering Templates]

Temperature

AN INCREASE IN TEMPERATURE
INCREASES THE RATE OF REACTION

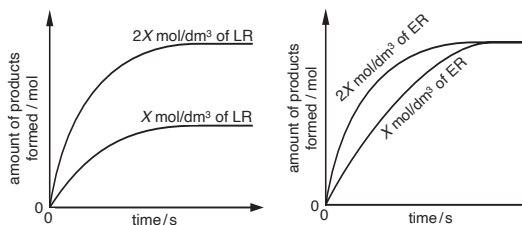
- $\uparrow$ kinetic energy of reacting particles and move faster
- $\uparrow$ proportion of reacting particles possess energy that is greater than or equal to activation energy
- reacting particles collide more frequently
- $\uparrow$ frequency of effective collisions



Concentration (solutions only)

AN INCREASE IN CONCENTRATION
INCREASES THE RATE OF REACTION

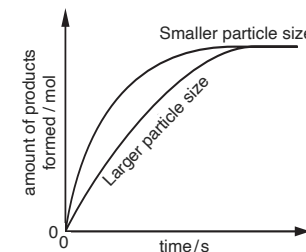
- $\uparrow$ concentration of reactants, $\uparrow$ number of reacting particles per unit volume
- reacting particles collide more frequently
- $\uparrow$ frequency of effective collisions



Particle size (solids only)

A DECREASE IN PARTICLE SIZE
INCREASES THE RATE OF REACTION

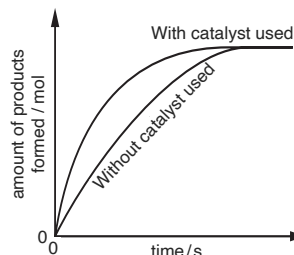
- $\downarrow$ size of reacting particles, $\uparrow$ surface area available (total mass & total volume remains unchanged)
- $\uparrow$ frequency of effective collisions



Catalyst

USE OF A CATALYST
INCREASES THE RATE OF REACTION

- catalyst provides an alternative pathway of lower activation energy
- $\uparrow$ proportion of reacting particles with energy that is greater than or equal to the activation energy
- $\uparrow$ frequency of effective collisions



Pressure (gases only)

AN INCREASE IN PRESSURE
INCREASES THE RATE OF REACTION

- $\uparrow$ pressure, $\downarrow$ volume
- reacting particles get closer and collide more frequently
- $\uparrow$ frequency of effective collisions

