# Factors Affecting the Rate of Chemical Reactions

PowerPoint 6.2

## Rate of Reaction

The ***rate of reaction*** is how quickly or slowly reactants turn into products.

Four ways to control the rate of reaction,

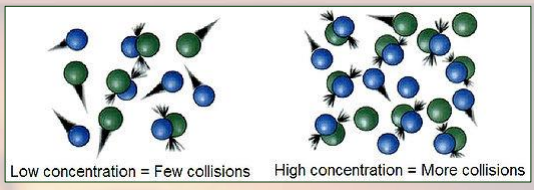
1. Temperature
2. Concentration
3. Surface area
4. Catalyst

# 1. Temperature

Temperature ↑
- Movement of particles ↑
  - Reaction between particles ↑

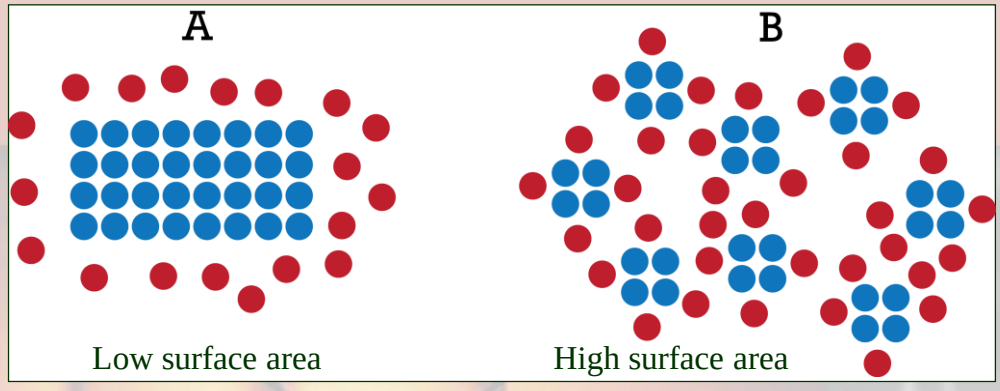
Temperature ↓
- Movement of particles ↓
  - Reaction between particles ↓

# 2. Concentration




With a greater concentration of reactants, there is a greater chance that collisions among them will occur.

## 3. Surface Area




Surface area ↑
→ Collisions frequency between reactants ↑
→ Reaction rate ↑

Example, burning logs versus burning saw dust.

## 4. Catalyst

A ***catalyst*** is a substance that speeds up the rate of a chemical reaction without being used up in the reaction itself

A catalyst generally is not included directly when we write the chemical equation of a reaction

Vital example → ***enzymes***

# Summary

Factors that influence reaction rates

1. Temperature
   - Reaction rates increase as temperature increases
2. Concentration
   - Reaction rates increase as concentration increases
3. Surface area
   - Reaction rates increase as surface area increases
4. Catalyst
   - Catalysts facilitate the interaction of reactants and increase reaction rates