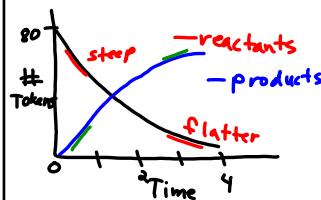


Reaction Rate Analogy

Particles must collide to react.

Analogy - ~ 50% success rate

Reality - Very low success rate.

$$\text{Rate} = \frac{\Delta \text{tokens}}{\Delta \text{time}} =$$

$$\Delta = \text{final} - \text{initial}$$

$$36 - 80$$

Factors Affecting Rate of Reaction

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1. Temperature - higher temp. \Rightarrow faster
e.g. refrigerator
2. Concentration of reactants
higher $[] \Rightarrow$ faster
3. Surface area - more area \Rightarrow faster
e.g. kindling for a fire
4. Nature of reaction
fast e.g. explosion
slow e.g. growing plants
5. Catalyst - substance which speeds reaction.
e.g. car exhaust system.
e.g. enzymes

Kinetic Molecular Theory Explains Factors

K M Theory or collision theory.

1. Concentration.



B - faster
greater chance of
Collision

2. Surface area for heterogeneous reactions



$$\uparrow \text{two or more states}$$

$$S.A. = 6 \times 4 = 24$$

$$S.A. = 6 \times 1 \times 8 = 48 \quad \text{more S.A.}$$

Greater chance of collision with
more S.A.

3. Nature of Reaction

- Reacting particles must have a minimum amount of energy to react successfully.
- Potential Energy Diagram.

