

Stealth learning – how chemical card games can improve student participation

Activity 3: Reaction-rate sentences

In order for a reaction to occur

the reactant particles must collide.

Not all collisions successfully produce products.

In order for a collision to be successful, the particles must collide with a minimum amount of energy,

known as the **Activation Energy**.

This is the energy required to overcome forces of repulsion from the electrons and to break any bonds within the reactant molecules.

The particles must also collide with the correct geometry.

A reaction's speed can be altered by increasing the surface area of one of the reactants.

This can be achieved by breaking up lumps into chips or even better grinding it into a powder.

When this occurs, more of the reactant's particles are exposed,

and therefore, more particles can come into contact with the other reactant.

This means that there will be a greater number of collisions,

and therefore, more successful collisions,

resulting in a faster rate of reaction.

A reaction's speed can be altered by increasing the concentration of a solution or pressure in a gas.

When this occurs, there are more reactant particles

in a given volume of space,

and therefore, more particles can come into contact with the other reactant.

This means that there will be a greater number of collisions,

and therefore, more successful collisions,

resulting in a faster rate of reaction.

A reaction's speed can be altered by increasing the temperature of the reaction mixture.

When this occurs, all the reactant particles have more energy,

and so, a much greater number will have the

required activation energy.



This means that there will be a greater number of collisions with the activation energy,

and therefore, more successful collisions,

resulting in a faster rate of reaction.

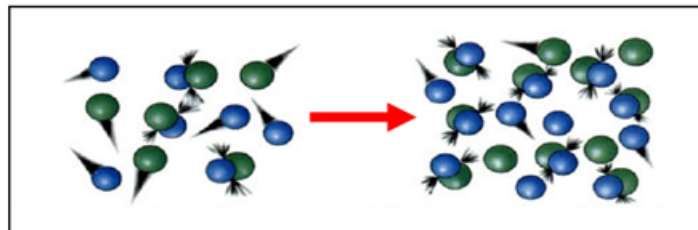
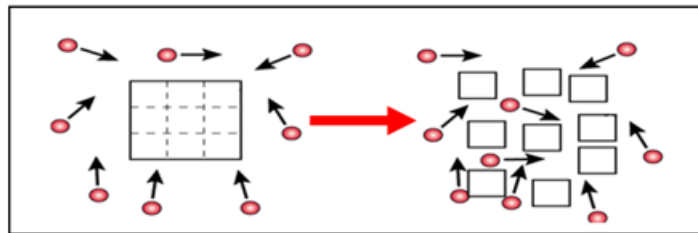
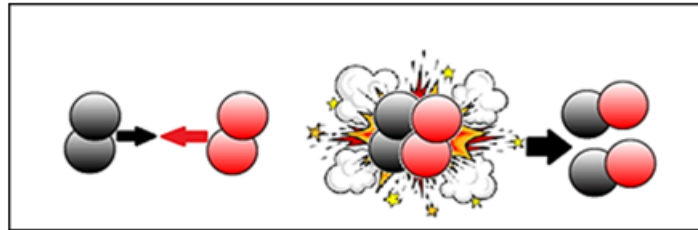


Image courtesy of the author