

RATES OF REACTION

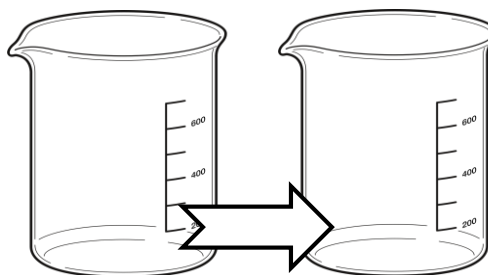
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Collision Theory

Collision theory states that, for a _____ to occur, particles must _____ with the correct _____ and with sufficient _____.

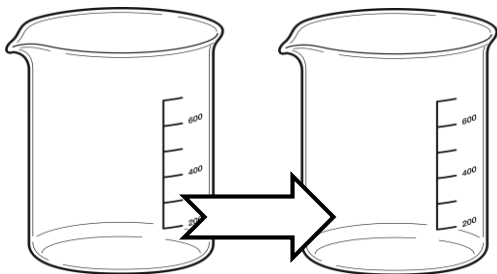
Concentration

_____ concentration provides a greater number of _____ available to _____. This increases the frequency of _____.



Pressure

_____ pressure of a reaction involving _____ forces the gases _____ together. This increases the frequency of _____.



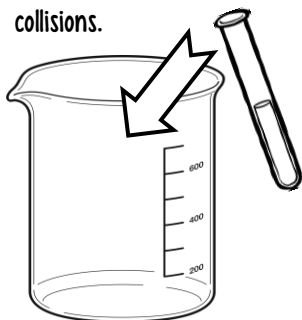
Temperature

_____ temperature increases the _____ energy of particles. This increases the frequency of _____ and a greater _____ of those collisions have the _____ required to _____.



Catalysts

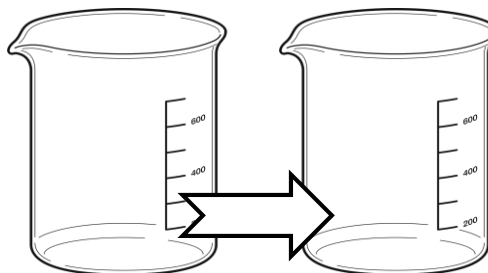
A catalyst _____ up reactions by _____ the _____ energy required for _____ collisions.



_____ are protein molecules that act as _____ in reactions in living _____.

Surface Area

_____ surface area of a _____ increases the number of _____ that are exposed. This increases the frequency of _____.

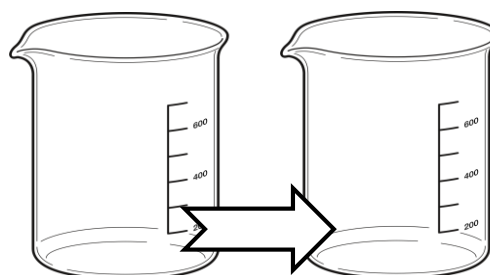


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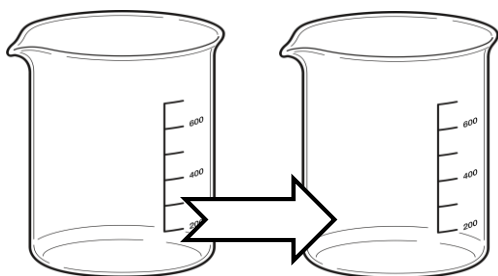
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Collision Theory

Concentration



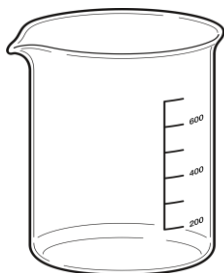
Pressure



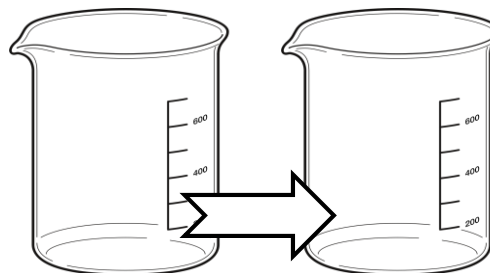
Temperature



Catalysts



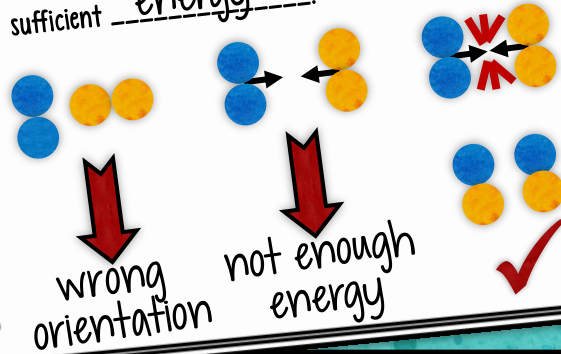
Surface Area



RATES OF REACTION

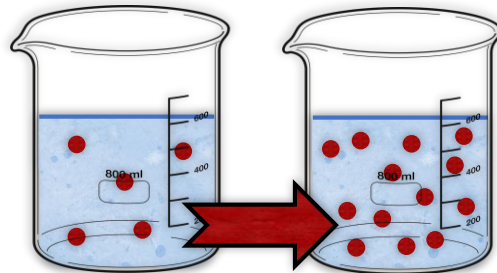
Collision Theory

Collision theory states that, for a reaction to occur, particles must collide with the correct orientation and with sufficient energy.



Concentration

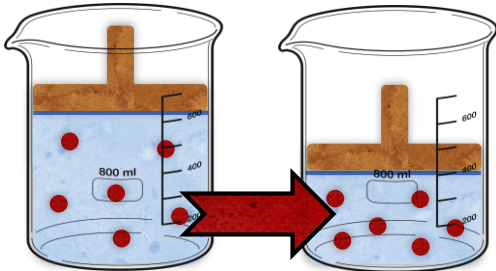
Increasing concentration provides a greater number of particles available to react. This increases the frequency of collisions.



More particles in the same space!

Pressure

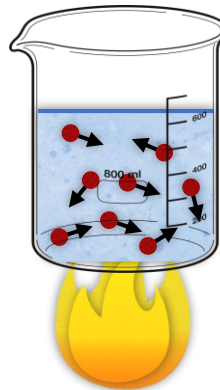
Increasing pressure of a reaction involving gases forces the gases closer together. This increases the frequency of collisions.



Higher chance of hitting each other!

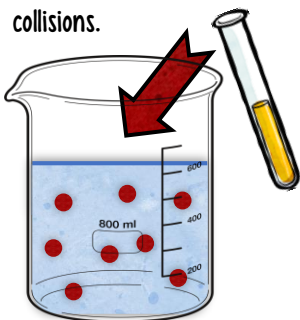
Temperature

Increasing temperature increases the Kinetic energy of particles. This increases the frequency of collisions and a greater proportion of those collisions have the energy required to react.



Catalysts

A catalyst speeds up reactions by lowering the activation energy required for reaction collisions.

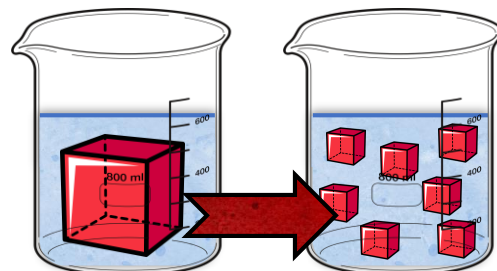


enzymes are protein molecules that act as catalysts in reactions in living organisms

Greek - "to untie"

Surface Area

Increasing surface area of a solid increases the number of particles that are exposed. This increases the frequency of collisions.



powdered drink mix dissolves faster, same principle!