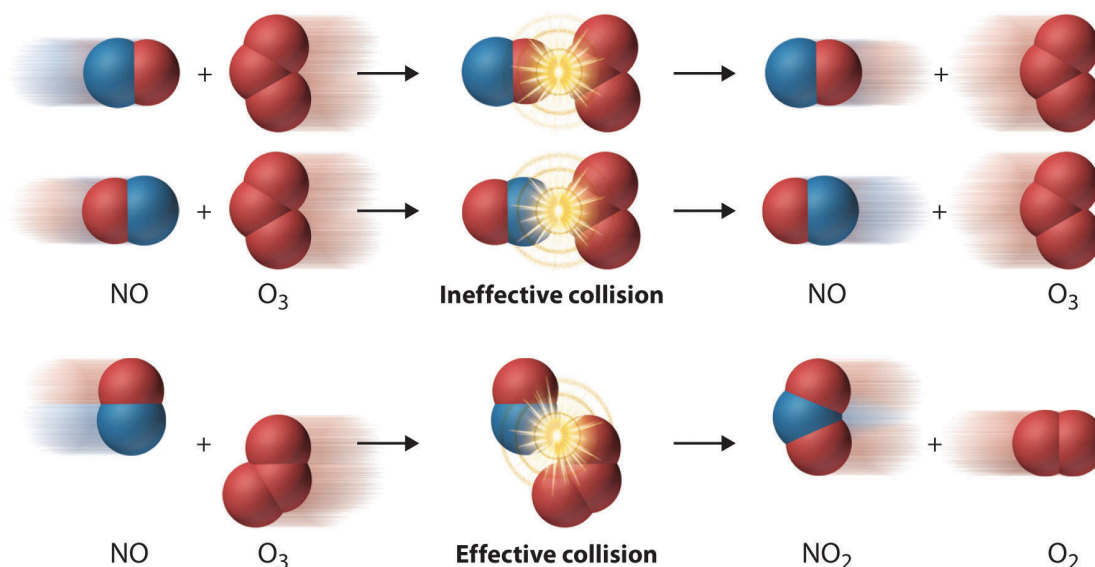


Topic	Collision theory	Level	GCSE
Outcomes	1. To use the collision theory to explain why changes to a reaction can increase the rate of reaction (temperature, concentration, surface area and catalyst) 2. To understand why not all collisions are successful		

The collision theory and rates of reaction



When two particles collide (hit each other) sometimes a chemical reaction happens. Not all collisions result in a chemical reaction. To increase the number of successful collisions we can change the conditions of a reaction (see page 2).

1. Do all collisions between particles cause a reaction to happen?
2. What do we call the minimum energy the particles must have for a reaction to happen?
3. What do we call a collision between two particles that causes a chemical reaction?
4. Look at the picture above, how do you know the first reaction is not a successful collision?

Change to the reaction	What happens to movement (kinetic energy) of the particles?	What happens to the frequency of collisions every second?	What happens to the number of successful collisions every second?	What happens to the rate of reaction?
Increase the temperature				
Increase the concentration				
Increase the surface area of a solid				
Add a catalyst				

Progress: further resources on rates of reaction are available here:
<http://www.thescienceteacher.co.uk/rates-of-reaction/>