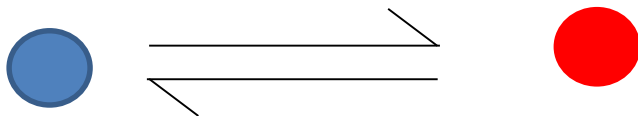
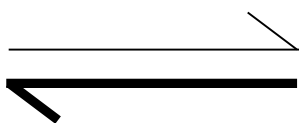
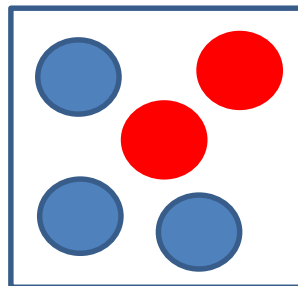


Topic	Position of equilibrium	Level	GCSE (or any other course for students aged 14-16)
Outcomes	<p>To understand what happens when the position of equilibrium moves.</p> <p>To understand how pressure, temperature and a catalyst affect the position of equilibrium and yield.</p>		
Information for teachers	<p>The graphic on slide 2 can be used to introduce the concept of position of equilibrium to students. Slide 3 could be used to help model student answers to questions on equilibria. Once students understand how temperature and pressure affect the position of equilibrium they can attempt slide 5.</p>		

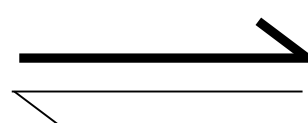
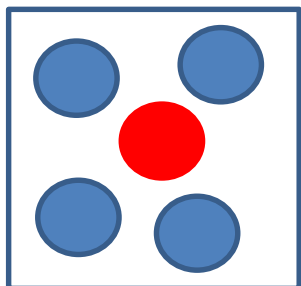


Position of equilibrium



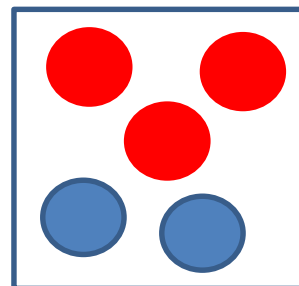
Moves to the left

Proportion of reactants in reaction mixture increases



Moves to the right

Proportion of products in the reaction mixture increases





Any reaction at equilibrium will try to oppose the change. If we increase the pressure, the reaction will try and decrease the pressure. If we increase the temperature, the reaction will try and decrease the temperature.

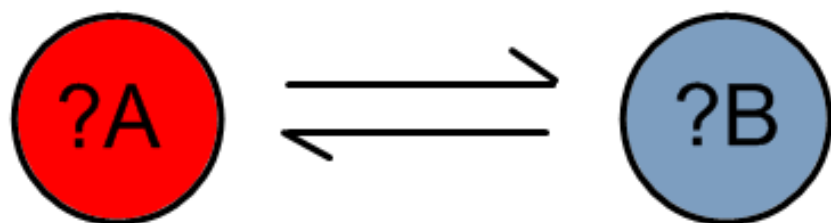
This guide below can be helpful to explain what a reaction at equilibrium will do if a change is applied.

1. State what the change is e.g. **if you increase the pressure...**
2. State what the reaction will do e.g. **the reaction will try to reduce the pressure**
3. State how the reaction will do this (what will happen to the position of equilibrium) e.g. **this will happen because the position of equilibrium will move to the right in the direction of the side with the fewer gas particles.**

Have a go for a) decreasing the pressure, b) increasing the temperature, c) decreasing the temperature and d) adding a catalyst.



	Effect on the rate (increase or decrease)	Effect on the position of equilibrium (shift to the right, left or no change)	Effect on the yield (increase or decrease or no change)
Increasing the temperature			
Increasing the pressure			
Adding a catalyst			



What can you tell me about this reaction if:

- (i) when I decrease the temperature the mixture goes red?
- (ii) when I increase the pressure the mixture goes blue?