



E.g. hydrated copper sulfate  $\rightleftharpoons$  anhydrous copper sulfate + water

Forwards reaction is endothermic, backwards reaction is exothermic

Energy changes  
The reaction will be endothermic in one direction and exothermic in the other  
Equal amounts of energy transferred in each direction

If you change the conditions of a reversible reaction, the system will try to counteract the change

# 6.2 REVERSIBLE REACTIONS AND DYNAMIC EQUILIBRIUM

## Reversible reactions

Denoted by:  $\rightleftharpoons$   
The products can react to produce the original reactants  
Direction changed by altering the conditions  
Reversible reactions will reach equilibrium

## Le Chatelier's Principle

Change in temperature  
Decreasing the temperature will shift equilibrium in the exothermic direction

Change in pressure  
Increasing the pressure will move equilibrium in the direction where there are fewer molecules of gas

Change in concentration  
Increasing the concentration of the reactants will increase the rate of the forwards reaction  
Equilibrium will shift to the right

## Equilibrium

Nothing can get in  
Closed system  
None of the reactants or products can escape

Explain in terms of Le Chatelier's Principle

The forwards and backwards reaction are occurring at the same rate  
Depends on temperature, pressure and concentration

**KEY**  
'Higher only' written in yellow

**AQA**

