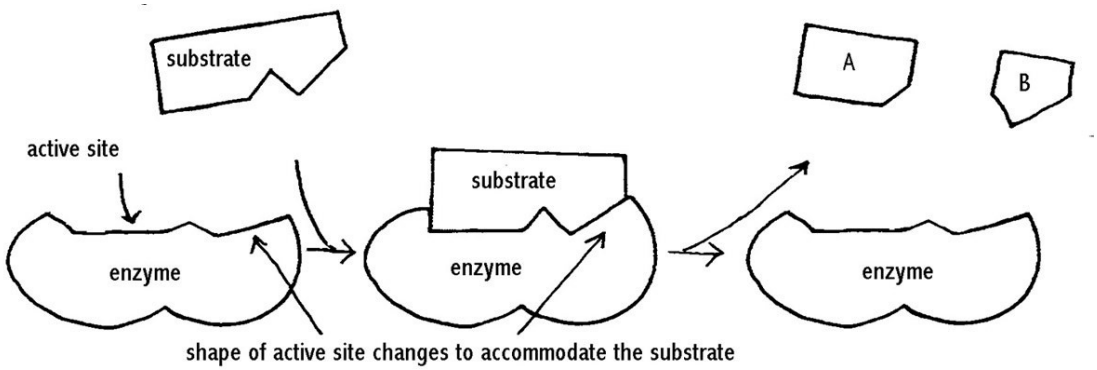
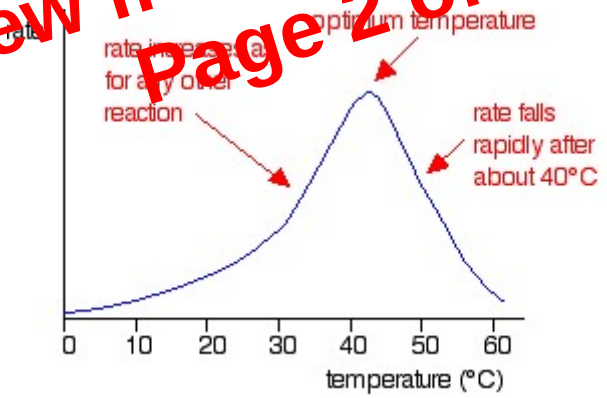
includes more detail. While the previous method shows the complementary fitting, it does not explain how the enzyme lowers the activation energy. In the 'Induced Fit' model, the substrate enters the active site the same way. However, the active site changes shape slightly when it forms the enzyme-substrate complex, which puts pressure on the substrate and the bonds inside of it. When it leaves as a product, the bonds in it are weaker, and are therefore easier to break, lowering the activation energy.



Factors Affecting Enzyme Activity

1. Temperature - generally, in most chemical reactions, when the temperature is increased, the rate of reaction increases. This is because molecules are given more kinetic energy and move faster, and therefore the are more likely to collide successfully with the active site as the activation energy is most likely going to be met. This continues to increase the rate until the optimum temperature, which is the temperature at which the rate is its fastest, and which the enzyme works best at. If the temperature gets too high, the substrate can vibrate too fast breaking the bonds within the tertiary structure of the enzyme. This will change the shape of the over polypeptide, and the active site, preventing a reaction. This is called denaturing.



2. pH - all enzymes also have an optimum pH value, which is the pH in which the enzyme works the fastest at. Different enzymes will work at different pHs. Above or below to optimum pH, the H+ and OH- ions in acids and alkalis can interfere with the bonds within the tertiary structure, breaking original ones and forming them with the acid or alkali molecules. This will change the shape of the active site, preventing a reaction.