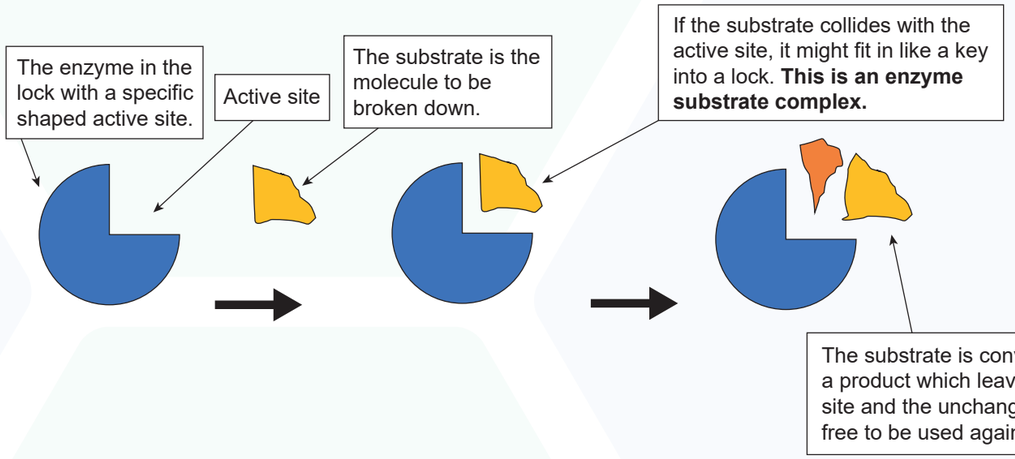
GCSE Biology 1.1 Enzymes Knowledge organiser

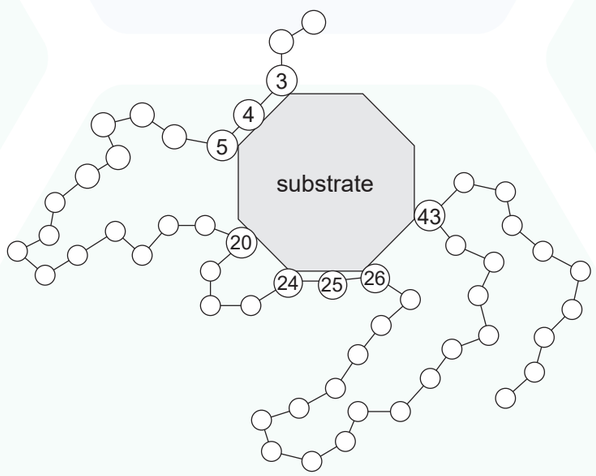
Enzymes - Lock and key Theory

- An enzyme made of protein.
- It catalyses/ speeds up reactions in cells.
- Enzymes can help break down molecules (digestion/ respiration).
- Enzymes can help build up molecules (Protein synthesis).
- Enzymes rely on collisions of molecules with a specific region of the enzyme called the active site to work.

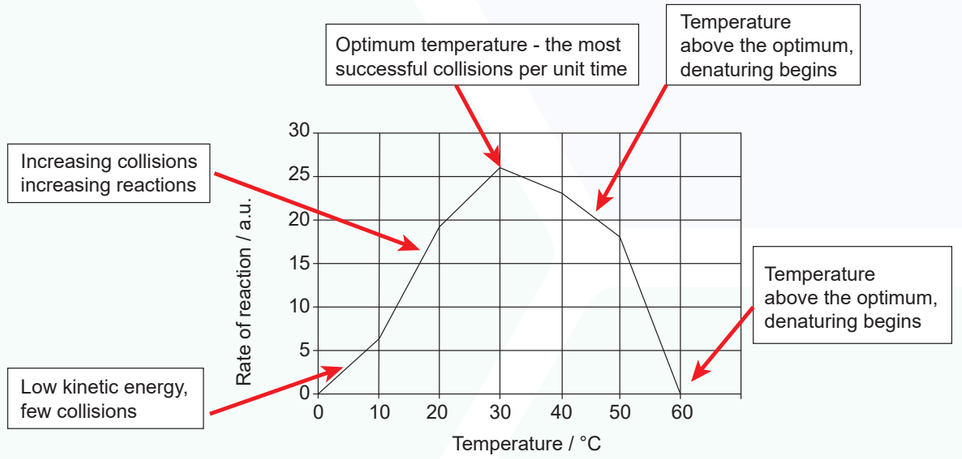


How to make an enzyme - Higher tier only

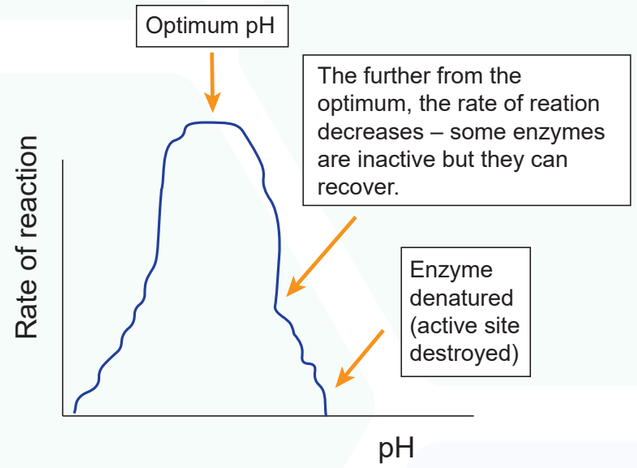
- The instructions to make enzymes are written in the DNA.
- Genes are sections of DNA made of many bases, every 3 DNA bases codes for an amino acid.
- Amino acids are linked in chains and interact to fold into enzymes with specific active sites.
- So different genes code different order of amino acids which fold differently to form active sites specific to each substrate.



Enzymes and temperature



Enzymes and pH



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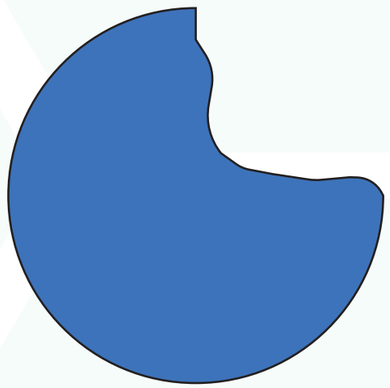

High temperatures or extremes of pH change the shape of the active site of the enzyme. The substrate can no longer fit into the active site and so no reaction occurs.