



GCSE Biology (Separate AND Trilogy)

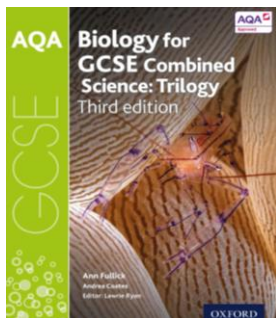
Success criteria: Cell organisation and The digestive system

I can...	
Describe cells as the basic building blocks of all living things	
Discuss the hierarchy of cells, tissues, organs and systems in relation to size and scale	
Describe a biological molecule as a molecule that an organism is made up of. All cells are built using the same basic molecules.	
State that water (H ₂ O) is the most abundant molecule in living cells.	
Name the main biological molecules as proteins, carbohydrates and lipids (fats)	
Identify proteins and carbohydrates as being polymers AND name the monomers that each of these polymers is made up of (amino acids for proteins, monosaccharides for carbohydrates)	
Identify the components of a lipid (glycerol and fatty acids)	
Describe the main functions of each bio-molecule (carbs = energy, proteins = structural/enzymes/antibodies, lipids = cell membranes/stored energy/insulation)	
Understand that we obtain the components for biological molecules from our food.	
State that foods can be investigated using specific chemical tests to see which nutrient types they contain.	
Describe the chemical tests for starch (iodine-brown → blue/black), sugar (Benedict's-blue → brick red), protein (biuret-blue → purple) and lipid (ethanol and water- emulsion)	
Required practical-FOOD TESTS- use of qualitative reagents to test for a range of carbohydrates, lipids and proteins.	
Describe digestion as a process of breaking down large (insoluble) molecules into small (soluble) molecules that can then be absorbed into the bloodstream.	
Identify the mechanical aspects (mastication by teeth, squeezing and churning by muscles) and the chemical aspects (enzymes) of digestion.	
Identify enzymes as protein molecules that lower the activation energy of a chemical reaction. (biological catalysts).	
Use the terms enzyme, active site, specific, substrate, products, collision, and denature correctly. (Lock and key theory)	
Describe AND explain the effects of temperature, pH and substrate concentration on enzyme activity. (sketch graphs)	
Describe a method that could be used to investigate enzyme activity for a reaction that produces a gas	
Analyse numerical data, including mean calculations and rate calculations, AND present data graphically.	
Required practical-ENZYMES- investigate the effect of pH on the rate of reaction of amylase enzyme	
Name the specific enzyme used and products made during the digestion of proteins, carbohydrates and lipids (fats).	
Identify where protease, amylase and lipase enzymes are made, AND where they act.	
Describe AND explain the roles of hydrochloric acid, HCl (optimum pH for protease/pepsin) and bile during digestion (neutralisation of stomach acid and emulsification of fats)	

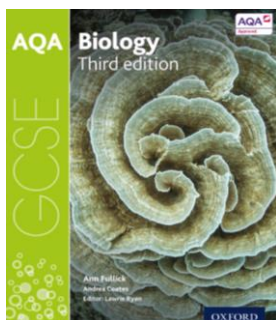
- 4.2.1 Principles of organisation
- 4.2.2.1 The Human digestive system

Additional support:

Access the appropriate textbook on kerboodle.com, create your own revision notes of the key points of the topic and attempt the summary questions.

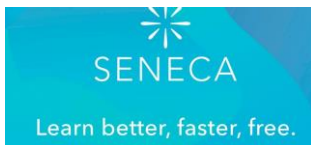


Combined science GCSE textbook
Pages 36-51



Separate Biology GCSE textbook
Pages 36-51

Utilise online revision resources to support your class notes, such as...



Attempt past paper questions using www.physicsandmathstutor.com and self-mark your answers using the official exam mark schemes.



Extension work/extra challenge:

Ask your teacher for extension tasks...

Pack 1 Topic 7 – Digestive Enzymes, Clean Clothes and Smelly Cheese (4.2.2.1)

Pack 1 Topic 8 – Holes in Stomach (4.2.2.1)