

Basic (E grade)	Intermediate (C grade)	Advanced (A grade)
<p>Living things (such as animals and plants) are made from cells that have different parts.</p>	<p>Nucleus - control, co-ordination Cell membrane - in/out of cell Cytoplasm - where stuff happens Ribosomes - making proteins Mitochondria - respiration/energy Plant cells only: Chloroplasts - photosynthesis/green Vacuole - storage of water/cell sap Cell wall - keep shape, cellulose</p>	<p>Specific adaptations, linking structure and function, especially for common examples of specialised cells.</p> <p>e.g. Many chloroplasts present in palisade cells in leaf, arranged to get maximum sunlight for more photosynthesis.</p>
<p>Substances can move by diffusion, osmosis and active transport.</p>		
<p>Plants take in water through their roots and carbon dioxide through their leaves to make glucose by photosynthesis.</p>		

Basic (E grade)	Intermediate (C grade)	Advanced (A grade)
<p>Glucose has many uses in the plant.</p> <p>Plants need minerals like us.</p> <p>Photosynthesis can be slowed down by limiting factors.</p>		
<p>Animals eat to get energy.</p> <p>We use food chains and webs to describe a simple version of an ecosystem.</p> <p>Pyramids of number and biomass help us to do this.</p>		
<p>Energy is lost at each stage of the food chain.</p> <p>Human effects on the ecosystem have had some unexpected consequences.</p>	<p>Animals pass on less energy than they have taken in because of movement and maintaining body temperature.</p> <p>The carbon cycle shows how the processes of photosynthesis, respiration, decomposition and combustion are linked.</p>	<p>Intensive farming reduces these energy losses to be more efficient. Ethical issues e.g. battery chickens.</p> <p>Humans affect C cycle (less photosynthesis, more combustion) and cause fertiliser pollution in lakes and rivers, leading to eutrophication.</p>

Basic (E grade)	Intermediate (C grade)	Advanced (A grade)
<p>Enzymes are natural catalysts used in/by the body, to digest food and build proteins.</p>		
<p>We use enzymes in industry too.</p>	<p>Biological washing powder</p> <p>Proteases to make baby food</p> <p>Carbohydrases to turn cheap starch into more valuable sugar</p> <p>Isomerase to turn glucose into very sweet fructose (for slimming foods)</p>	<p>Advantages/Disadvantages</p>
<p>Body conditions need to be kept constant e.g. temperature, water content, glucose.</p> <p>If body temp (normally 37°C) gets too high or too low we can become ill or die.</p>		

Basic (E grade)	Intermediate (C grade)	Advanced (A grade)
<p>Our kidneys regulate water content by filtering the blood and then reabsorbing everything useful. We call the waste product urine.</p>	<p>1 Ultrafiltration: Sugar, urea, water and salts are squeezed out of blood under high pressure 2 Reabsorption: All sugar is usually reabsorbed, some salts, none of urea. Amount of water depends on level of ADH. 3 Everything not reabsorbed sent to bladder through ureter; this is urine.</p>	<p>If there is not enough water in blood, more ADH produced by pituitary. More water is then reabsorbed in the kidney, so urine is concentrated.</p> <p>If blood dilute: less ADH, less water reabsorbed, large amount of dilute urine.</p>
<p>The pancreas produces a hormone which stops glucose levels in the blood getting too high. If this goes wrong diabetes can result.</p> <p>Banting and Best did experiments on dogs to identify the exact hormone involved, which led to a treatment for diabetes.</p>		
<p>We inherit (some) characteristics from our parents.</p> <p>In sexual reproduction, one male and one female sex cell (each carrying half of the information) join together to make a new individual.</p>		