

AQA Biology GCSE

Name _____ Class _____ Date _____

Cell Structure and transport

Lesson	Target 4	Target 6	Target 8
B1.1 The world of the microscope	I can use a light microscope. <input type="checkbox"/>	I can describe the difference between magnification and resolution. <input type="checkbox"/>	I can compare and contrast the magnification and resolution obtained by using light and electron microscopes. <input type="checkbox"/>
	I can state why microscopes are useful in the study of cell biology. <input type="checkbox"/>	I can describe the advantages and disadvantages of using a light and electron microscope. <input type="checkbox"/>	I can justify the use of an electron microscope. <input type="checkbox"/>
	I can calculate total magnification. <input type="checkbox"/>	I can use the formula: magnification = size of image/size of real object. <input type="checkbox"/>	I can re-arrange the magnification equation and measure the size of cells. <input type="checkbox"/>
B1.2 Animal and plant cells	I can identify a plant and animal cell from a diagram. <input type="checkbox"/>	I can describe the functions of the parts of cells. <input type="checkbox"/>	I can explain how the main structures of cells are related to their functions. <input type="checkbox"/>
	I can name the main parts of cells. <input type="checkbox"/>	I can compare plant and animal cells. <input type="checkbox"/>	I can suggest reasons why some cells do not contain all cell structures. <input type="checkbox"/>
	I can prepare a microscope slide. <input type="checkbox"/>	I can use a microscope to study plant and algal cells. <input type="checkbox"/>	I can compare sizes of cells using units of length and standard form. <input type="checkbox"/>
B1.3 Eukaryotic cells and prokaryotic cells	I can identify structures in prokaryotic cells. <input type="checkbox"/>	I can compare prokaryotic and eukaryotic cells. <input type="checkbox"/>	I can explain how the main structures of prokaryotic cells are related to their functions. <input type="checkbox"/>
	I can state that bacterial (prokaryotic) cells do not contain a nucleus and eukaryotic cells do. <input type="checkbox"/>	I can describe the functions of the parts of a prokaryotic cell. <input type="checkbox"/>	I can perform calculations to work out orders of magnitude. <input type="checkbox"/>
	I can use orders of magnitude to correctly order objects according to size. <input type="checkbox"/>	I can use orders of magnitude to compare sizes of organisms. <input type="checkbox"/>	

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Lesson	Target 4		Target 6		Target 8	
B1.4 Specialisation in animal cells	I can identify specialised animals cells from diagrams.	<input type="checkbox"/>	I can explain why animals have specialised cells.	<input type="checkbox"/>	I can discuss how the structure of specialised animal cells are related to their function within the organ and whole organism.	<input type="checkbox"/>
	I can describe the function of specialised animal cells.	<input type="checkbox"/>	I can compare the structure of a specialised and generalised animal cell.	<input type="checkbox"/>	I can suggest the function of an unknown specialised cell based on its structure.	<input type="checkbox"/>
	I can write a basic explanation of how animal cells are adapted.	<input type="checkbox"/>	I can write a coherent explanation of how animal cells are adapted.	<input type="checkbox"/>	I can write an effectively structured explanation of how animal cells are adapted.	<input type="checkbox"/>
B1.5 Specialisation in plant cells	I can identify specialised plant cells from diagrams.	<input type="checkbox"/>	I can compare the structure of a specialised and generalised plant cell.	<input type="checkbox"/>	I can discuss how the structure of specialised plant cells is related to their function within the organ and whole organism.	<input type="checkbox"/>
	I can describe the function of specialised plant cells.	<input type="checkbox"/>	I can describe the adaptations of specialised plant cells.	<input type="checkbox"/>	I can design a cell, tissue or organ to perform a certain function.	<input type="checkbox"/>
	I can use a light microscope to view a root hair cell.	<input type="checkbox"/>	I can draw a scientific drawing of a root hair cell observed using a light microscope.	<input type="checkbox"/>	I can measure a root hair cell observed using a light microscope.	<input type="checkbox"/>
B1.6 Diffusion	I can state that diffusion is the spreading of the particles of any substance in solution, or particles of a gas.	<input type="checkbox"/>	I can predict which way substances will move across a cell membrane.	<input type="checkbox"/>	I can explain how temperature and concentration gradient affects rate of diffusion.	<input type="checkbox"/>
	I can list the factors that affect the rate of diffusion.	<input type="checkbox"/>	I can explain why surface area affects the rate of diffusion.	<input type="checkbox"/>	I can write a hypothesis using detailed scientific knowledge and explain how it could be tested.	<input type="checkbox"/>
	I can write a simple hypothesis.	<input type="checkbox"/>	I can write a hypothesis using scientific knowledge.	<input type="checkbox"/>		

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Lesson	Target 4	Target 6	Target 8
B1.7 Osmosis	I can describe what osmosis is.	<input type="checkbox"/> I can state the differences between osmosis and diffusion.	<input type="checkbox"/> I can explain how a model shows osmosis in a cell.
	I can state that if animal cells lose or gain too much water by osmosis they can stop working properly.	<input type="checkbox"/> I can use ideas about osmosis to explain why maintaining constant internal conditions in living organisms is important.	<input type="checkbox"/> I can use the terms isotonic, hypotonic or hypertonic to explain the movement of water across a cell membrane.
		<input type="checkbox"/> I can write a prediction using scientific knowledge of osmosis.	
B1.8 Osmosis in plants	I can state that if a plant loses too much water from its cells they become soft.	<input type="checkbox"/> I can use osmosis to explain the effect of placing plant tissue in salt or sugar solutions.	<input type="checkbox"/> I can explain the mechanisms that lead to turgid or flaccid plant cells and plasmolysis.
	I can write a simple method with support.	<input type="checkbox"/> I can write a suitable plan to investigate into the effect of salt or sugar solutions on plant tissue.	<input type="checkbox"/> I can write a detailed plan independently.
	I can use given data to plot a suitable graph with some support.	<input type="checkbox"/> I can calculate percentage change and use this to plot a line graph with negative numbers and draw a line of best fit.	<input type="checkbox"/> I can use a line graph to estimate the concentration of solution inside a plant cell.
B1.9 Active transport	I can define active transport as the movement of a substance against a concentration gradient using energy.	<input type="checkbox"/> I can explain why active transport is important for living organisms.	<input type="checkbox"/> I can describe how active transport takes place.
	I can identify where active transport takes place.	<input type="checkbox"/> I can explain the differences between diffusion, osmosis, and active transport.	<input type="checkbox"/> I can suggest how a cell that carries out active transport is adapted to this function.
	I can use a representational model to show active transport.	<input type="checkbox"/> I can suggest some improvements/ limitations to a representational model that shows active transport.	<input type="checkbox"/> I can design and evaluate a representational model to show active transport.

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Lesson	Target 4		Target 6		Target 8	
B1.10 Exchanging materials	I can state the function of exchange surfaces in plants and animals.	<input type="checkbox"/>	I can describe how the effectiveness of exchange surfaces is increased.	<input type="checkbox"/>	I can link ideas about diffusion to explain how the adaptations of exchange surfaces increases their effectiveness.	<input type="checkbox"/>
	I can state that a single-celled organism has a relatively large surface area to volume ratio.	<input type="checkbox"/>	I can use ideas about surface area to volume ratio to describe why multicellular organisms need exchange surfaces.	<input type="checkbox"/>	I can use ideas about surface area to explain the shape of a leaf.	<input type="checkbox"/>
	I can calculate the surface area to volume ratio of a cube.	<input type="checkbox"/>	I can calculate the surface area to volume ratio of a cylinder.	<input type="checkbox"/>	I can calculate the surface area to volume ratio of a sphere.	<input type="checkbox"/>

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B2

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Cell division

Lesson	Target 4		Target 6		Target 8	
B2.1 Cell division	I can state that human body cells have 46 chromosomes and gametes have 23.	<input type="checkbox"/>	I can explain why chromosomes in body cells are normally found in pairs.	<input type="checkbox"/>	I can explain why genetic material must be doubled during mitosis.	<input type="checkbox"/>
	I can state that mitosis is a stage in cell division.	<input type="checkbox"/>	I can describe situations where mitosis is occurring.	<input type="checkbox"/>	I can explain in detail what happens at each stage of the cell cycle.	<input type="checkbox"/>
	I can state the meaning of most of the keywords – mitosis, chromosomes, gene, gametes.	<input type="checkbox"/>	I can use the keywords to describe the process of mitosis.	<input type="checkbox"/>	I can use the keywords to write detailed explanations on why mitosis is an important process in living things and how characteristics are inherited.	<input type="checkbox"/>
B2.2 Growth and differentiation	I can define the terms growth and differentiation.	<input type="checkbox"/>	I can describe the importance of cell differentiation in multicellular organisms.	<input type="checkbox"/>	I can compare and contrast differentiation in plants and animals.	<input type="checkbox"/>
	I can state why plant clones are genetically identical to each other.	<input type="checkbox"/>	I can explain how using tissue culture creates a clone of a plant.	<input type="checkbox"/>	I can explain why it is easier to clone a plant compared to an animal.	<input type="checkbox"/>
	I can attempt to clone a plant by using apparatus correctly.	<input type="checkbox"/>	I can attempt to clone a plant by using the apparatus correctly and following safety rules.	<input type="checkbox"/>	I can explain and carry out a practical accurately and safely in order to successfully clone a plant.	<input type="checkbox"/>

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B2

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Lesson	Target 4		Target 6		Target 8	
B2.3 Stem cells	I can state that a stem cell is a cell that is not differentiated.	<input type="checkbox"/>	I can describe differences between embryonic and adult stem cells.	<input type="checkbox"/>	I can explain why embryonic stem cells are more useful for helping medical conditions.	<input type="checkbox"/>
	I can state that plant stem cells can be used to create clones.	<input type="checkbox"/>	I can explain why plant clones are produced in the agriculture industry.	<input type="checkbox"/>	I can write a well-structured article about stem cells which has impact by the use of precise vocabulary and real-life examples.	<input type="checkbox"/>
	I can write a simple article which states ways that stem cells can be used to help medical conditions.	<input type="checkbox"/>	I can write an well-structured article which communicates effectively how stem cells can be used to help medical conditions.	<input type="checkbox"/>		
B2.4 Stem cell dilemmas	I can list some arguments for and against the use of stem cells.	<input type="checkbox"/>	I can describe what therapeutic cloning can be used for.	<input type="checkbox"/>	I can explain the process of therapeutic cloning organism.	<input type="checkbox"/>
	I can verbally communicate simple ideas during a group discussion.	<input type="checkbox"/>	I can explain the reasons for ethical and religious objections against stem cells.	<input type="checkbox"/>	I can evaluate the use of stem cells.	<input type="checkbox"/>
			I can verbally communicate well-constructed arguments.	<input type="checkbox"/>	I can clearly communicate strong, well-researched arguments in a persuasive manner.	<input type="checkbox"/>

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Organisation and the digestive system

Lesson	Target 4	Target 6	Target 8
B3.1 Tissues and organs	I can state examples of cells, tissues, organs, and organ systems. <input type="checkbox"/>	I can define the terms tissue, organ, and organ system. <input type="checkbox"/>	I can relate levels of organisation to familiar organ systems in order to give examples of cells, tissues, and organs. <input type="checkbox"/>
	I can name organs found in a given organ systems. <input type="checkbox"/>	I can describe the function of certain organs and organ systems. <input type="checkbox"/>	I can explain why the cells of multicellular organisms are organised into tissues, organs, and organ systems. <input type="checkbox"/>
	I can order cells, tissues, organs, and organ systems according to their relative sizes. <input type="checkbox"/>	I can identify tissues that make up organs. <input type="checkbox"/>	I can suggest the function of glandular, epithelial, and muscular tissue in organs. <input type="checkbox"/>
B3.2 The human digestive system	I can identify some of the organs of the digestive system. <input type="checkbox"/>	I can name all of the organs of the digestive system. <input type="checkbox"/>	I can link the process of digestion to other processes in the body in order to explain its function. <input type="checkbox"/>
	I can state the function of some of the organs of the digestive system. <input type="checkbox"/>	I can describe the functions of the organs of the digestive system. <input type="checkbox"/>	I can explain in detail how the small intestine is adapted to its function. <input type="checkbox"/>
	I can state simply what happens to food during digestion. <input type="checkbox"/>	I can summarise the process of digestion. <input type="checkbox"/>	I can explain in detail what happens to food during digestion. <input type="checkbox"/>
B3.3 The chemistry of food	I can recall that food contains the molecules carbohydrates, lipids (fats), and proteins. <input type="checkbox"/>	I can describe the structure of simple sugars, starch, lipids, and proteins. <input type="checkbox"/>	I can explain which food molecules are polymers. <input type="checkbox"/>
	I can state the function of each food molecule in the diet. <input type="checkbox"/>	I can carry out multiple food tests in an organised manner. <input type="checkbox"/>	I can apply knowledge of the function of food molecules in the body to give diet advice. <input type="checkbox"/>
	I can carry out a food test and record results in a table. <input type="checkbox"/>	I can design a results table to clearly record results from food tests. <input type="checkbox"/>	I can suggest what a food contains using results from food tests, evaluating the observed data collected. <input type="checkbox"/>

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Lesson	Target 4	Target 6	Target 8
B3.4 Catalysts and enzymes	I can recall that enzymes are proteins which are biological catalysts. <input type="checkbox"/>	I can describe how enzymes are used in digestion. <input type="checkbox"/>	I can explain how enzymes speed up reactions. <input type="checkbox"/>
	I can state one function of enzymes inside the body. <input type="checkbox"/>	I can use the 'lock and key theory' to explain why the shape of the enzyme is vital for it to function. <input type="checkbox"/>	I can explain how enzymes control metabolism. <input type="checkbox"/>
	I can state the independent variable in an investigation. <input type="checkbox"/>	I can identify the key variables in a given investigation. <input type="checkbox"/>	I can plan an experiment to investigate how different catalysts affect the rate of a reaction. <input type="checkbox"/>
B3.5 Factors affecting enzyme action	I can state that temperature and pH affects how well an enzyme works. <input type="checkbox"/>	I can explain why high temperatures and changes in pH prevent enzymes from catalysing reactions. <input type="checkbox"/>	I can explain in detail how a change in temperature or pH affects the rate of an enzyme-catalysed reaction. <input type="checkbox"/>
	I can plot a line graph. <input type="checkbox"/>	I can draw a tangent to a line and calculate the rate of a reaction with guidance. <input type="checkbox"/>	I can apply knowledge of enzymes to explain how some organisms can survive in extreme conditions. <input type="checkbox"/>
	I can state simply what a line graph shows about how temperature or pH affects the rate of an enzyme catalysed reaction. <input type="checkbox"/>	I can plot a line graph and use it to draw conclusions about how temperature and pH affects the rate of an enzyme catalysed reaction. <input type="checkbox"/>	I can draw tangents in order to calculate the rate of a reaction. <input type="checkbox"/>
B3.6 How the digestive system works	I can state that enzymes are used in digestion to break down food molecules. <input type="checkbox"/>	I can explain why enzymes are needed for digestion. <input type="checkbox"/>	I can suggest how to test for substrates and products in the model gut. <input type="checkbox"/>
	I can identify that carbohydrases break down carbohydrates, proteases break down proteins, and lipases break down lipids. <input type="checkbox"/>	I can for each food molecule, name the enzyme that acts on it, where it is produced, and which products are formed. <input type="checkbox"/>	I can make a prediction with a scientific explanation. <input type="checkbox"/>
	I can plan a simple method to carry out an investigation. <input type="checkbox"/>	I can plan and carry out an investigation in order to gather accurate results. <input type="checkbox"/>	I analyse results in order to evaluate a method and the validity of conclusions, explaining suggestions for possible improvements. <input type="checkbox"/>

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3.7 Making digestion efficient	I can state that the stomach contains acid.	<input type="checkbox"/>	I can describe the functions of bile.	<input type="checkbox"/>	I can explain how acid in the stomach increases the efficiency of pepsin.	<input type="checkbox"/>
	I can state that the liver produces bile.	<input type="checkbox"/>	I can calculate the mean rate of an enzyme-catalysed reaction.	<input type="checkbox"/>	I can explain how bile increases the efficiency of fat digestion.	<input type="checkbox"/>
	I can write a simple hypothesis and prediction.	<input type="checkbox"/>	I can analyse data in order to determine if a hypothesis is correct.	<input type="checkbox"/>	I can explain how the rate of an enzyme catalysed reaction shows how efficient the reaction is.	<input type="checkbox"/>

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B4

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Organising animals and plants

Lesson	Target 4		Target 6		Target 8	
B4.1 The blood	I can state the main components in blood.	<input type="checkbox"/>	I can summarise the process of blood clotting.	<input type="checkbox"/>	I can suggest how white blood cells are adapted to their function.	<input type="checkbox"/>
	I can recognise the components of blood from photomicrographs.	<input type="checkbox"/>	I can view blood under a light microscope and recognise components.	<input type="checkbox"/>	I can estimate the diameter of a red blood cell and comment on its uncertainty.	<input type="checkbox"/>
	I can describe the function of each component in blood.	<input type="checkbox"/>	I can explain how red blood cells are adapted to their function.	<input type="checkbox"/>	I can evaluate in detail a model of the blood.	<input type="checkbox"/>
B4.2 The blood vessels	I can state the three main types of blood vessel and recognise them from diagrams.	<input type="checkbox"/>	I can explain how the structure relates to the functions of blood vessels.	<input type="checkbox"/>	I can explain in detail the importance of a double circulatory system.	<input type="checkbox"/>
	I can estimate heart rate.	<input type="checkbox"/>	I can comment on how accurate estimations are.	<input type="checkbox"/>	I can explain how to make estimates more accurate in terms of precision of data.	<input type="checkbox"/>
B4.3 The heart	I can describe the function of the heart.	<input type="checkbox"/>	I can describe the function of the main structures of the human heart.	<input type="checkbox"/>	I can explain in detail how the structure of the different parts of the human heart is related to their function.	<input type="checkbox"/>
	I can state the main structures of the human heart.	<input type="checkbox"/>	I can describe the problems that can develop with blood vessels in the heart and their treatments.	<input type="checkbox"/>	I can recognise the main structures of the heart when carrying out a heart dissection.	<input type="checkbox"/>
	I can list examples of problems that can develop in blood vessels in the human heart.	<input type="checkbox"/>	I can suggest advantages and disadvantages of using stents and statins.	<input type="checkbox"/>	I can evaluate the use of stents and statins in treating problems with blood vessels.	<input type="checkbox"/>

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B4.4 Helping the heart	I can state that heartbeat is maintained by a group of cells that act as a pacemaker.	<input type="checkbox"/>	I can explain why an irregular heartbeat is detrimental to health.	<input type="checkbox"/>	I can explain how a natural pacemaker maintains the heartbeat.	<input type="checkbox"/>
	I can give some ways in which the heart can stop functioning efficiently.	<input type="checkbox"/>	I can describe why people may have objections to heart transplants.	<input type="checkbox"/>	I can suggest how an artificial pacemaker regulates an irregular heartbeat.	<input type="checkbox"/>
	I can describe why a person may need an artificial pacemaker or an artificial heart.	<input type="checkbox"/>	I can summarise the advantages and disadvantages different treatments of heart problems.	<input type="checkbox"/>	I can evaluate in detail the different methods used in the treatment of heart problems.	<input type="checkbox"/>
B4.5 Breathing and gas exchange	I can list the main structures of the gas exchange system.	<input type="checkbox"/>	I can describe the function of the main structures of the gas exchange system.	<input type="checkbox"/>	I can evaluate in detail a model of the lungs.	<input type="checkbox"/>
	I can state that gas exchange happens in the alveoli.	<input type="checkbox"/>	I can describe how alveoli are adapted.	<input type="checkbox"/>	I can explain in detail how adaptations of alveoli result in efficient gas exchange.	<input type="checkbox"/>
	I can use data in the form of percentages to describe the differences in the composition of inhaled and exhaled air.	<input type="checkbox"/>	I can describe the processes of ventilation and gas exchange.	<input type="checkbox"/>	I can explain the differences between the composition of inhaled and exhaled air.	<input type="checkbox"/>
B4.6 Tissues and organs in plants	I can recognise examples of plant organs and state their functions.	<input type="checkbox"/>	I can describe how plant organs are involved in the transport system.	<input type="checkbox"/>	I can suggest what type of plant organs unfamiliar structures are.	<input type="checkbox"/>
	I can use a light microscope to view a cross-section of a leaf.	<input type="checkbox"/>	I can use a microscope to identify the different tissues in a cross-section of a leaf.	<input type="checkbox"/>	I can use a light microscope to draw a leaf cross-section and calculate scale.	<input type="checkbox"/>
	I can state the functions of different plant tissues.	<input type="checkbox"/>	I can explain how the structures of tissues in the leaf are related to their functions.	<input type="checkbox"/>	I can suggest functions for unknown plant tissues.	<input type="checkbox"/>
B4.7 Transport systems in plants	I can describe the function of xylem and phloem tissue.	<input type="checkbox"/>	I can describe why transport in plants is important.	<input type="checkbox"/>	I can explain in detail how the rate of transport through a plant can be measured.	<input type="checkbox"/>
	I can describe evidence for movement of water through xylem.	<input type="checkbox"/>	I can explain how the structure of xylem and phloem are adapted to their functions.	<input type="checkbox"/>		

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B4.8 Evaporation and transpiration	I can state that transpiration is the evaporation of water vapour from the leaves.	<input type="checkbox"/>	I can describe how transpiration maintains the movement of water from roots to leaves.	<input type="checkbox"/>	I can evaluate drinking from a straw as a model for transpiration.	<input type="checkbox"/>
	I can state the function of stomata.	<input type="checkbox"/>	I can describe how the opening and closing of stomata is controlled by guard cells.	<input type="checkbox"/>	I can explain in detail how stomata control transpiration.	<input type="checkbox"/>
	I can calculate the mean number of stomata on a given area of leaf.	<input type="checkbox"/>	I can use sampling to estimate the number of stomata on a leaf.	<input type="checkbox"/>	I can suggest reasons for differences in the number and distribution of stomata, as well as their adaptations.	<input type="checkbox"/>
B4.9 Factors affecting transpiration	I can recognise the factors that affect transpiration.	<input type="checkbox"/>	I can explain why temperature, humidity, light intensity and the amount of air flow affect the rate of transpiration.	<input type="checkbox"/>	I can apply particle model to explain in detail why temperature, humidity, light intensity and the amount of air flow affect the rate of transpiration.	<input type="checkbox"/>
	I can describe how a potometer can be used to estimate the volume of water lost by a plant.	<input type="checkbox"/>	I can describe the differences between a moving bubble potometer and a mass potometer.	<input type="checkbox"/>	I can summarise adaptations to control water loss and explain how they work.	<input type="checkbox"/>
	I can identify variables when investigating rate of transpiration.	<input type="checkbox"/>	I can make a prediction using scientific knowledge when investigating rate of transpiration.	<input type="checkbox"/>	I can evaluate in detail the use of a potometer to measure the rate of transpiration.	<input type="checkbox"/>

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B5

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Communicable diseases

Lesson	Target 4		Target 6		Target 8	
B5.1 Health and disease	I can describe health as a state of physical and mental wellbeing.	<input type="checkbox"/>	I can describe the difference between communicable and non-communicable diseases.	<input type="checkbox"/>	I can suggest how communicable diseases are spread.	<input type="checkbox"/>
	I can state some causes of ill health.	<input type="checkbox"/>	I can use a scatter diagram to identify a correlation between two variables.	<input type="checkbox"/>	I can suggest links between lifestyle and health.	<input type="checkbox"/>
	I can draw a simple conclusion from data on health.	<input type="checkbox"/>	I can construct and interpret bar charts, frequency tables, frequency diagrams and histograms.	<input type="checkbox"/>	I can discuss the validity of a statement based on evidence in the form of data.	<input type="checkbox"/>
B5.2 Pathogens and disease	I can state that pathogens are microorganisms that cause disease.	<input type="checkbox"/>	I can describe how bacteria and viruses cause disease.	<input type="checkbox"/>	I can explain why viruses are always pathogens but not all bacteria are.	<input type="checkbox"/>
	I can describe ways that pathogens can be spread.	<input type="checkbox"/>	I can explain why communicable diseases spread rapidly following a natural disaster.	<input type="checkbox"/>	I can explain how pathogens are passed from one organism to another and use this to suggest ways of preventing the spread.	<input type="checkbox"/>
B5.3 Preventing infections	I can list some ways in which communicable diseases spread.	<input type="checkbox"/>	I can describe how the spread of diseases can be reduced or prevented.	<input type="checkbox"/>	I can use scientific knowledge to explain in detail how methods reduce or prevent the spread of disease.	<input type="checkbox"/>
	I can take a role in designing a form of communication to inform the public about how to prevent the spread of a disease.	<input type="checkbox"/>	I can communicate to the public about how to stop the spread of a disease.	<input type="checkbox"/>	I can use an example to explain how the scientific method has been applied to help prevent the spread of disease.	<input type="checkbox"/>

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B5.4 Viral diseases	I can name some diseases that are caused by viruses.	<input type="checkbox"/>	I can describe how measles, HIV and tobacco mosaic virus affect the infected organism.	<input type="checkbox"/>	I can explain how measles, HIV and tobacco mosaic virus affect the infected organism.	<input type="checkbox"/>
	I can describe how measles and HIV are spread.	<input type="checkbox"/>	I can interpret data to describe how the number of people infected with measles in the UK has changed over time.	<input type="checkbox"/>	I can explain why viral infections are often more difficult to prevent and treat than bacterial infections.	<input type="checkbox"/>
	I can summarise information in a table.	<input type="checkbox"/>	I can design a table and use it to summarise information.	<input type="checkbox"/>	I can write a persuasive letter to parents urging them to vaccinate their children against measles.	<input type="checkbox"/>
B5.5 Bacterial diseases	I can name some diseases that are caused by bacteria.	<input type="checkbox"/>	I can describe similarities and differences between salmonella and gonorrhoea.	<input type="checkbox"/>	I can suggest why more people die from viral diseases compared to bacterial diseases.	<input type="checkbox"/>
	I can describe how salmonella and gonorrhoea are spread.	<input type="checkbox"/>	I can describe how the spread of salmonella and gonorrhoea is controlled.	<input type="checkbox"/>	I can explain in detail how methods to control the spread of salmonella and gonorrhoea work.	<input type="checkbox"/>
B5.6 Diseases caused by fungi and protists	I can state that rose black spot is caused by fungi and malaria is caused by protists.	<input type="checkbox"/>	I can describe how rose black spot affects the plant and how it is treated.	<input type="checkbox"/>	I can explain how rose black spot affects the growth of a plant.	<input type="checkbox"/>
	I can use a diagram to describe the life cycle of the malaria protist.	<input type="checkbox"/>	I can link ways of controlling the spread of malaria to specific parts of the protist's life cycle.	<input type="checkbox"/>	I can explain why it is so expensive to stop the spread of malaria.	<input type="checkbox"/>
	I can state some ways that malaria is controlled.	<input type="checkbox"/>				
B5.7 Human defence responses	I can describe some ways in which the human body defends itself against the entry of pathogens.	<input type="checkbox"/>	I can describe how human body defence mechanisms stop the entry of pathogens.	<input type="checkbox"/>	I can explain how a reduced or over active immune system can cause illness.	<input type="checkbox"/>
	I can state that white blood cells help defend the body against pathogens.	<input type="checkbox"/>	I can describe the role of white blood cells in the defence against disease.	<input type="checkbox"/>	I can explain in detail how antibody production fights pathogens.	<input type="checkbox"/>
	I can show how one part of a model is similar to real life.	<input type="checkbox"/>	I can use a model to explain how the body defends itself against disease.	<input type="checkbox"/>	I can evaluate an analogy of the human defence systems against disease.	<input type="checkbox"/>

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Preventing and treating disease

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B6.1 Vaccination	I can describe why people are vaccinated.	<input type="checkbox"/>	I can explain how vaccination works.	<input type="checkbox"/>	I can explain why, if a large proportion of the population is vaccinated, the spread of the pathogen is reduced.	<input type="checkbox"/>
	I can state that vaccines contain dead or inactive forms of a pathogen.	<input type="checkbox"/>	I can describe what an antibody and antigen are.	<input type="checkbox"/>	I can apply ideas about specificity of antibodies.	<input type="checkbox"/>
B6.2 Antibiotics and painkillers	I can describe what an antibiotic is.	<input type="checkbox"/>	I can describe how antibiotics work.	<input type="checkbox"/>	I can suggest a reasoned explanation for a pattern in data.	<input type="checkbox"/>
	I can state that viral infections cannot be treated with antibiotics.	<input type="checkbox"/>	I can describe what is meant by antibiotic resistant bacteria.	<input type="checkbox"/>	I can explain in detail how antibiotic resistant bacteria arise.	<input type="checkbox"/>
	I can decide when a painkiller or antibiotic should be used to treat an illness.	<input type="checkbox"/>	I can explain why it is difficult to develop drugs to treat viral infections.	<input type="checkbox"/>	I can explain why scientists are constantly developing new antibiotics.	<input type="checkbox"/>
B6.3 Discovering drugs	I can name some drugs based on extracts from plants or microorganisms.	<input type="checkbox"/>	I can describe how new antibiotics are tested for effectiveness.	<input type="checkbox"/>	I can suggest why mould naturally produces antibiotics.	<input type="checkbox"/>
	I can order the events that led to the production of penicillin.	<input type="checkbox"/>	I can discuss the advantages and disadvantages of looking for new drugs from living organisms.	<input type="checkbox"/>	I can discuss how effective herbal remedies are.	<input type="checkbox"/>
	I can state a simple conclusion using data.	<input type="checkbox"/>	I can analyse data to draw conclusions on the effectiveness of new antibiotics.	<input type="checkbox"/>	I can analyse data to evaluate the effectiveness of new antibiotics and make a reasoned decision which one to develop further.	<input type="checkbox"/>

AQA Biology

GCSE Student checklist

B6

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B6.4 Developing drugs	I can state that new medical drugs have to be tested to check that they are safe and effective.	<input type="checkbox"/>	I can explain why each procedure in drugs testing and trialling is used.	<input type="checkbox"/>	I can describe in some detail how new medical drugs are tested and trialled for safety, effectiveness, toxicity, efficacy, and dose.	<input type="checkbox"/>
	I can state the procedures used to trial a new drug in the correct order.	<input type="checkbox"/>	I can describe how a double blind trial is carried out.	<input type="checkbox"/>	I can critically analyse the results from a double blind trial.	<input type="checkbox"/>
	I can describe what is meant by a placebo.	<input type="checkbox"/>	I can explain why a placebo is used during drug trialling.	<input type="checkbox"/>	I can explain why the results of drug trials are published in journals.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B7.1 Non-communicable diseases	I can name some non-communicable diseases.	<input type="checkbox"/>	I can classify diseases as communicable and non-communicable.	<input type="checkbox"/>	I can describe some impacts of non-communicable diseases.	<input type="checkbox"/>
	I can list some risk factors that are linked to an increased rate of disease.	<input type="checkbox"/>	I can draw conclusions from data on risk factors.	<input type="checkbox"/>	I can identify risk factors from data.	<input type="checkbox"/>
	I can identify correlations in data.	<input type="checkbox"/>	I can decide whether a link is causal.	<input type="checkbox"/>	I can explain why a correlation does not prove a causal mechanism.	<input type="checkbox"/>
B7.2 Cancer	I can define a tumour as a mass of abnormally growing cells.	<input type="checkbox"/>	I can describe the difference between benign and malignant tumours.	<input type="checkbox"/>	I can explain how benign and malignant tumours can be life-threatening.	<input type="checkbox"/>
	I can state some causes of cancer.	<input type="checkbox"/>	I can describe why carcinogens and ionising radiation increase the risk of tumours.	<input type="checkbox"/>	I can link a lack of control in the cell cycle to tumour formation.	<input type="checkbox"/>
	I can list some of the benefits and risks of chemotherapy.	<input type="checkbox"/>	I can analyse data to assess the risks and benefits of chemotherapy.	<input type="checkbox"/>	I can evaluate the risks of chemotherapy in relation to data, drug testing, and consequences in order to come to an informed decision.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B7.3 Smoking and the risk of disease	I can name the harmful substances found in tobacco smoke.	<input type="checkbox"/>	I can describe the effects of the harmful substances found in tobacco smoke.	<input type="checkbox"/>	I can explain in detail the effects of the harmful substances found in tobacco smoke.	<input type="checkbox"/>
	I can state that smoking increases your risk of developing lung diseases.	<input type="checkbox"/>	I can analyse data to describe evidence for the link between smoking and lung disease.	<input type="checkbox"/>	I can suggest possible causal mechanisms to explain trends shown in data, and explain how the causal link	<input type="checkbox"/>
B7.4 Diet, exercise, and disease	I can describe some health problems caused by a poor diet and lack of exercise.	<input type="checkbox"/>	I can describe causal mechanisms for the link between exercise and health.	<input type="checkbox"/>	I can suggest reasons for the correlation between exercise and health, and decide which are causal.	<input type="checkbox"/>
	I can list some ways in which people can avoid becoming overweight.	<input type="checkbox"/>	I can suggest measures to prevent a further rise in the number of people with type 2 diabetes.	<input type="checkbox"/>	I can explain in detail why eating a poor diet can lead to health problems.	<input type="checkbox"/>
B7.5 Alcohol and other carcinogens	I can state that drinking too much alcohol can affect liver and brain function.	<input type="checkbox"/>	I can describe the short- and long-term effects of drinking alcohol.	<input type="checkbox"/>	I can explain in detail how drinking alcohol affects the nervous system.	<input type="checkbox"/>
	I can state that alcohol can affect unborn babies.	<input type="checkbox"/>	I can describe the effects of alcohol on unborn babies.	<input type="checkbox"/>	I can evaluate the evidence on the effects of alcohol on a developing baby.	<input type="checkbox"/>
	I can define the term carcinogen.	<input type="checkbox"/>	I can describe the link between ionising radiation and cancer.	<input type="checkbox"/>	I can explain the link between radiation and cancer.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B8.1 Photosynthesis	I can describe how plants get the materials they need for growth.	<input type="checkbox"/>	I can describe how the leaf is adapted for photosynthesis.	<input type="checkbox"/>	I can explain how adaptations of the leaf make photosynthesis efficient.	<input type="checkbox"/>
	I can state the word equation for photosynthesis.	<input type="checkbox"/>	I can write the balanced symbol equations for photosynthesis.	<input type="checkbox"/>	I can explain how adaptations of the leaf make photosynthesis efficient.	<input type="checkbox"/>
	I can describe why plants need light to carry out photosynthesis.	<input type="checkbox"/>	I can describe an experiment to prove that plants carry out photosynthesis when exposed to light.	<input type="checkbox"/>	I can explain why chlorophyll is needed for photosynthesis.	<input type="checkbox"/>
B8.2 The rate of photosynthesis	I can list the factors that affect the rate of photosynthesis (temperature, carbon dioxide concentration, light intensity, amount of chlorophyll).	<input type="checkbox"/>	I can describe why low temperature, shortage of carbon dioxide, shortage of light and shortage of chlorophyll limit the rate of photosynthesis.	<input type="checkbox"/>	I can apply knowledge of enzymes to explain why a high temperature affects the rate of photosynthesis.	<input type="checkbox"/>
	I can state simply the relationship between these factors and the rate of photosynthesis.	<input type="checkbox"/>	I can suggest which factor limits the rate of photosynthesis in a given situation.	<input type="checkbox"/>	I can predict how the rate of photosynthesis will be affected with more than one limiting factor.	<input type="checkbox"/>
	I can plot a line graph and write a simple conclusion.	<input type="checkbox"/>	I can interpret and explain graphs of photosynthesis rate involving one limiting factor.	<input type="checkbox"/>	I understand and can use the inverse square law and light intensity in the context of photosynthesis.	<input type="checkbox"/>
B8.3 How plants use glucose	I can list some ways in which plants use glucose.	<input type="checkbox"/>	I can describe all the ways in which plants use glucose, including how they make proteins.	<input type="checkbox"/>	I can explain how carnivorous plants are adapted to their environment.	<input type="checkbox"/>
	I can test a leaf for starch and state some safety rules.	<input type="checkbox"/>	I can evaluate risks involved in the starch test.	<input type="checkbox"/>	I can explain how and why plants convert glucose to starch for storage.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B8.4 Making the most of photosynthesis			I can describe why greenhouse increase plant growth.	<input type="checkbox"/>	I can explain in detail how using greenhouses can help control limiting factors and increase the rate of photosynthesis.	<input type="checkbox"/>
			I can comment on the cost-effectiveness of adding heat, light, or carbon dioxide to greenhouses.	<input type="checkbox"/>	I can use data to comment on the cost-effectiveness of greenhouses.	<input type="checkbox"/>
			I can discuss the benefits of using greenhouses and hydroponics.	<input type="checkbox"/>	I can evaluate the use of greenhouses and hydroponics in terms of economics.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B9.1 Aerobic respiration	I can state the word equation for aerobic respiration.	<input type="checkbox"/>	I can write the balanced symbol equation for respiration.	<input type="checkbox"/>	I can apply understanding of respiration in new contexts.	<input type="checkbox"/>
	I can list ways in which living organisms use energy.	<input type="checkbox"/>	I can describe respiration as an exothermic reaction.	<input type="checkbox"/>	I can explain why respiration is an exothermic reaction.	<input type="checkbox"/>
	I can identify a control.	<input type="checkbox"/>	I can plan an investigation to include a control.	<input type="checkbox"/>	I can explain why a control is necessary in some scientific investigations.	<input type="checkbox"/>
B9.2 The response to exercise	I can describe how heart rate, breathing rate, and breath volume change with exercise.	<input type="checkbox"/>	I can explain why heart rate, breathing rate, and breath volume change with exercise.	<input type="checkbox"/>	I can explain why stores of glycogen change with exercise.	<input type="checkbox"/>
	I can draw a suitable chart/graph to display data with some support.	<input type="checkbox"/>	I can choose the best way to display data and calculate percentage changes.	<input type="checkbox"/>	I can justify the choice of chart/graph used to display data.	<input type="checkbox"/>
B9.3 Anaerobic respiration	I can state the word equation for anaerobic respiration in animals, plants, and microorganisms.	<input type="checkbox"/>	I can write the balanced symbol equation for anaerobic respiration in plants and microorganisms.	<input type="checkbox"/>	I can compare and contrast anaerobic respiration in animals, plants, and microorganisms.	<input type="checkbox"/>
	I can describe the reason why cells respire anaerobically.	<input type="checkbox"/>	I can compare and contrast aerobic and anaerobic respiration.	<input type="checkbox"/>	I can explain in detail why heart and breathing rate continue to be high for a period of time after exercise.	<input type="checkbox"/>
	I can give some uses of fermentation.	<input type="checkbox"/>	I can explain why muscles get tired during exercise.	<input type="checkbox"/>	I can write a prediction based on scientific knowledge.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B9.4 Metabolism and the liver	I can define metabolism as the sum of all reactions on a cell or the body.	<input type="checkbox"/>	I can describe the role of the liver in repaying the oxygen debt.	<input type="checkbox"/>	I can explain the link between protein consumption and concentration of urea in urine.	<input type="checkbox"/>
	I can list some metabolic reactions.	<input type="checkbox"/>	I can discuss whether it is possible to increase metabolism.	<input type="checkbox"/>	I can evaluate information to assess credibility.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B10.1 Principles of homeostasis	I can name some human internal conditions that are controlled.	<input type="checkbox"/>	I can define homeostasis.	<input type="checkbox"/>	I can apply knowledge of enzymes and osmosis to explain in detail why internal conditions need to be maintained.	<input type="checkbox"/>
	I can show the pathway of a control system as receptor, coordination centre, effector.	<input type="checkbox"/>	I can explain why internal conditions need to be maintained.	<input type="checkbox"/>	I can explain how drugs affect homeostasis.	<input type="checkbox"/>
			I can identify stimuli, receptors, coordination centres and effectors in examples of nervous and chemical responses.	<input type="checkbox"/>	I can explain how nervous and chemical responses differ.	<input type="checkbox"/>
B10.2 The structure and function of the human nervous system	I can identify the stimuli that sense organs detect.	<input type="checkbox"/>	I can describe the pathway of impulses from receptor to effector.	<input type="checkbox"/>	I can explain in detail how the nervous system coordinates a response.	<input type="checkbox"/>
	I can state what a neurone and nerve are.	<input type="checkbox"/>	I can describe how information is passed along neurones.	<input type="checkbox"/>	I can evaluate results in detail in order to discuss precision and accuracy.	<input type="checkbox"/>
	I can measure reaction times using repeats to increase accuracy.	<input type="checkbox"/>	I can evaluate a method and describe how accuracy could be improved.	<input type="checkbox"/>		
B10.3 Reflex actions	I can identify reflex reactions.	<input type="checkbox"/>	I can describe how reflex actions are fast and automatic.	<input type="checkbox"/>	I can explain in detail how impulses travel across a synapse.	<input type="checkbox"/>
	I can state why reflex actions are important.	<input type="checkbox"/>	I can describe the events involved in a reflex action.	<input type="checkbox"/>	I can apply knowledge of synapses to explain the effects of drugs.	<input type="checkbox"/>
	I can order the events involved in a reflex action.	<input type="checkbox"/>	I can describe the function of synapses.	<input type="checkbox"/>		

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B11.1 Principles of hormonal control	I can match the pituitary gland, pancreas, thyroid, adrenal gland, ovary and testes to their position on a diagram of the human body.	<input type="checkbox"/>	I can explain why the pituitary gland is known as a 'master gland'.	<input type="checkbox"/>	I can compare and contrast nervous and hormonal action.	<input type="checkbox"/>
	I can state that hormones are chemicals secreted into the bloodstream by glands and have an effect on a target organ.	<input type="checkbox"/>	I can describe the role of hormones released by endocrine glands.	<input type="checkbox"/>	I can apply knowledge to suggest and explain how changes in hormone production could affect the body.	<input type="checkbox"/>
B11.2 The control of blood glucose levels	I can state that blood glucose concentration is controlled by the pancreas.	<input type="checkbox"/>	I can describe what happens when blood glucose levels become too high or too low.	<input type="checkbox"/>	I can explain how glucagon interacts with insulin to control blood glucose levels.	<input type="checkbox"/>
	I can state that there are two types of diabetes.	<input type="checkbox"/>	I can describe the difference in the causes of Type 1 and Type 2 diabetes.	<input type="checkbox"/>	I can explain why it is important to control the level of glucose in the blood.	<input type="checkbox"/>
B11.3 Treating diabetes	I can state that Type 1 diabetes is normally treated with insulin injections.	<input type="checkbox"/>	I can explain why Type 1 diabetes is treated with insulin injections.	<input type="checkbox"/>	I can evaluate different treatments for Type 1 diabetes.	<input type="checkbox"/>
	I can state that Type 2 diabetes can be treated by changes to diet and exercise.	<input type="checkbox"/>	I can explain how Type 2 diabetes can be treated by changes to diet and exercise.	<input type="checkbox"/>	I can explain in detail how lifestyle choices affect the risk of developing Type 2 diabetes.	<input type="checkbox"/>
	I can describe data that shows a link between obesity and Type 2 diabetes.	<input type="checkbox"/>	I can describe how the production of insulin for people with diabetes has developed over time.	<input type="checkbox"/>	I can summarise how scientists are working to find a cure for diabetes.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B11.4 The role of negative feedback	<input type="checkbox"/>	I can describe the function of adrenaline and thyroxine.	<input type="checkbox"/>	I can explain how adrenaline prepares the body for 'fight or flight'.	<input type="checkbox"/>	
	<input type="checkbox"/>	I can interpret and explain diagrams of negative feedback control.	<input type="checkbox"/>	I can design labelled flow diagrams of negative feedback control.	<input type="checkbox"/>	
B11.5 Human reproduction	<input type="checkbox"/>	I can identify oestrogen and testosterone as reproductive hormones in women and men respectively.	<input type="checkbox"/>	I can compare and contrast the changes to boys and girls during puberty.	<input type="checkbox"/>	I can explain why fertility changes with age in men and women.
	<input type="checkbox"/>	I can describe what happens during the menstrual cycle.	<input type="checkbox"/>	I can name the hormones involved in the menstrual cycle.	<input type="checkbox"/>	I can explain the role of each hormone in the menstrual cycle.
B11.6 Hormones and the menstrual cycle	<input type="checkbox"/>	I can name the glands that produce the hormones oestrogen, progesterone, LH and FSH.	<input type="checkbox"/>	I can explain the interactions of hormones in the control of the menstrual cycle.	<input type="checkbox"/>	
	<input type="checkbox"/>	I can describe the function of the hormones that control the menstrual cycle.	<input type="checkbox"/>	I can interpret in detail a graph showing how the levels of hormones change.	<input type="checkbox"/>	
B11.7 Artificial control of fertility	<input type="checkbox"/>	I can state what contraception is and list examples.	<input type="checkbox"/>	I can explain how contraceptives work.	<input type="checkbox"/>	I can apply knowledge of hormones in the menstrual cycle to suggest how hormonal contraceptives work.
	<input type="checkbox"/>	I can categorise contraceptives as hormonal and non-hormonal.	<input type="checkbox"/>	I can list the advantage and disadvantage of different contraceptives.	<input type="checkbox"/>	I can evaluate different methods of contraception in detail.

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B11.8 Infertility treatments	<input type="checkbox"/>	I can describe what is meant by infertility and suggest reasons for it.	<input type="checkbox"/>	I can describe FSH and IVF can be used to help treat infertility.	<input type="checkbox"/>
	<input type="checkbox"/>	I can describe the steps used in IVF.	<input type="checkbox"/>	I can evaluate the advantages and disadvantages of IVF.	<input type="checkbox"/>
	<input type="checkbox"/>	I can outline the issues surrounding IVF.	<input type="checkbox"/>	I can use different viewpoints to make an informed decision on unused IVF embryos.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B12.1 Types of reproduction	I can define asexual and sexual reproduction.	<input type="checkbox"/>	I can describe the differences between asexual and sexual reproduction.	<input type="checkbox"/>	I can compare and contrast sexual and asexual reproduction.	<input type="checkbox"/>
	I can name some organisms that use either asexual or sexual reproduction.	<input type="checkbox"/>	I can describe the advantages and disadvantages of sexual and asexual reproduction.	<input type="checkbox"/>	I can explain in detail why meiosis is important for sexual reproduction.	<input type="checkbox"/>
	I can use a model to show why variation is produced in offspring from sexual reproduction but not in asexual reproduction.	<input type="checkbox"/>	I can design a model to show why variation is produced in offspring from sexual reproduction but not in asexual reproduction.	<input type="checkbox"/>	I can evaluate a model to show that variation is produced in offspring from sexual reproduction but not in asexual reproduction.	<input type="checkbox"/>
B12.2 Cell division in sexual reproduction	I can state that gametes (sex cells) are formed by meiosis.	<input type="checkbox"/>	I can describe the processes of mitosis and meiosis.	<input type="checkbox"/>	I can compare and contrast mitosis and meiosis.	<input type="checkbox"/>
	I can state that meiosis halves the number of chromosomes in gametes and fertilisation restores the full number.	<input type="checkbox"/>	I can explain how meiosis halves the number of chromosomes in gametes and fertilisation restores the full number.	<input type="checkbox"/>	I can explain in detail why gametes are all genetically different to each other.	<input type="checkbox"/>
	I can solve simple probability questions with guidance.	<input type="checkbox"/>	I can solve simple probability questions.	<input type="checkbox"/>	I can solve a complex calculation to determine the number of possible gametes formed during meiosis.	<input type="checkbox"/>
B12.3 DNA and the genome	I can state that DNA contains a code to build proteins.	<input type="checkbox"/>	I can describe the relationship between DNA, genes, and chromosomes.	<input type="checkbox"/>	I can explain why the cost of genome sequencing has reduced since it started.	<input type="checkbox"/>
	I can describe what the Human Genome Project was.	<input type="checkbox"/>	I can describe some of the benefits of studying the human genome.	<input type="checkbox"/>	I can explain why knowledge of the genomes of other species is useful.	<input type="checkbox"/>
	I can give one goal of the Human Genome Project.	<input type="checkbox"/>	I can explain why genome projects are costly and take a long time.	<input type="checkbox"/>	I can discuss the possible issues surrounding genome sequencing.	<input type="checkbox"/>

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B12.4 Inheritance in action	I can recognise examples of inherited traits.	<input type="checkbox"/>	I can use the terms allele, dominant, recessive, homozygous and heterozygous correctly.	<input type="checkbox"/>		
	I can recognise a genotype and a phenotype.	<input type="checkbox"/>	I can describe a phenotype when given the genotype.	<input type="checkbox"/>		
	I can use a simple diagram to state how offspring have inherited traits.	<input type="checkbox"/>	I can use a Punnett square diagram to predict the outcome of a monohybrid cross using the theory of probability.	<input type="checkbox"/>		
B12.5 More about genetics	I can state that in females the sex chromosomes are XX and in males they are XY.	<input type="checkbox"/>	I can carry out a genetic cross to show sex inheritance.	<input type="checkbox"/>	I can explain why we only get the expected ratios in a genetic cross if there are large numbers of offspring.	<input type="checkbox"/>
	I can use a family tree to describe how people are related.	<input type="checkbox"/>	I can use direct proportion and simple ratios to express the outcome of a genetic cross.	<input type="checkbox"/>	I can use a family tree to work out where an individual is likely to be homozygous or heterozygous for particular alleles.	<input type="checkbox"/>
B12.6 Inherited disorders	I can state what is meant by an inherited disorder and recognise examples.	<input type="checkbox"/>	I can name examples of inherited disorders, such as cystic fibrosis and polydactyly.	<input type="checkbox"/>	I can evaluate in to detail the use of using genetic engineering to cure inherited disorders.	<input type="checkbox"/>
	I can use secondary sources of information to describe symptoms of an inherited disorder.	<input type="checkbox"/>	I can use a genetic cross to explain how inherited disorders are passed on.	<input type="checkbox"/>	I can use a genetic cross to predict the probability of a child inheriting an genetic disorder.	<input type="checkbox"/>
B12.7 Screening for genetic disorders	I state a reason why embryos might be screened.	<input type="checkbox"/>	I can outline the methods used to screen embryos.	<input type="checkbox"/>	I can explain how screening shows if the embryo has a genetic disorder.	<input type="checkbox"/>
	I can state one concern about embryo screening.	<input type="checkbox"/>	I can state advantages and disadvantages of embryo screening.	<input type="checkbox"/>	I can make an informed judgement about embryo screening by evaluating in detail the economic, social and ethical issues.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B13.1 Variation	I can list some examples of human variation.	<input type="checkbox"/>	I can list some examples of variation in plants and categorise as being due to genetic, environmental causes or both.	<input type="checkbox"/>	I can explain why some traits are only due to genetic causes.	<input type="checkbox"/>
	I can categorise some human traits as being due to genetic, environmental causes or both.	<input type="checkbox"/>	I can suggest reasons why identical twins will start to show variation as they get older.	<input type="checkbox"/>	I can explain why it is so hard to get valid results from identical-twin studies.	<input type="checkbox"/>
	I can describe why identical twins share the same genes.	<input type="checkbox"/>	I can use data to explain why studying identical twins helps scientists investigate which traits have genetic causes.	<input type="checkbox"/>	I can discuss some of the issues scientists face when conducting twin studies.	<input type="checkbox"/>
B13.2 Evolution by natural selection	I can state that a mutation is a change in the DNA code.	<input type="checkbox"/>	I can explain how a mutation may lead to a new phenotype.	<input type="checkbox"/>	I can explain why it is rare that a mutation leads to a new phenotype.	<input type="checkbox"/>
	I can describe the theory of evolution by natural selection as a process by which living things have evolved from simple life forms.	<input type="checkbox"/>	I can describe the steps that take place during evolution by natural selection.	<input type="checkbox"/>	I can apply the theory of evolution by natural selection to suggest how a specific organism evolved.	<input type="checkbox"/>
	I can state some useful adaptations.	<input type="checkbox"/>	I can analyse data from an activity modelling natural selection.	<input type="checkbox"/>	I can explain how a change in a model can make it useful for explaining something else.	<input type="checkbox"/>
B13.3 Selective breeding	I can describe selective breeding as a process where humans choose which plants or animals to breed together.	<input type="checkbox"/>	I can explain the process of selective breeding.	<input type="checkbox"/>	I can compare and contrast natural and artificial selection.	<input type="checkbox"/>
	I can give one examples where selective breeding has been used.	<input type="checkbox"/>	I can explain why humans have used selective breeding.	<input type="checkbox"/>	I can explain in detail how the variation of alleles in a population is reduced through selective breeding.	<input type="checkbox"/>
	I can choose organisms to breed together to result in desired traits in the offspring.	<input type="checkbox"/>	I can explain what inbreeding is and why it is a problem in dog breeding.	<input type="checkbox"/>	I can explain in detail why the reduction of variation is a problem.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B13.4 Genetic engineering	I can describe GM organisms as containing a gene from another organism and order the stages of genetic engineering.	<input type="checkbox"/>	I can describe the steps used in genetic engineering to produce GM organisms.	<input type="checkbox"/>	I can explain the process of genetic engineering using technical vocabulary, e.g. plasmid, vector, restriction enzymes, marker genes, recombinant DNA.	<input type="checkbox"/>
	I can give examples of GM organisms and describe why they are useful to humans.	<input type="checkbox"/>	I can analyse data to describe why growing GM crops maybe be beneficial to a farmer.	<input type="checkbox"/>	I can explain how genetic engineering could be used to cure people with inherited disorders and discuss the limitations.	<input type="checkbox"/>
B13.5 Ethics of genetic technologies	I can give one concern people may have about growing GM crops.	<input type="checkbox"/>	I can outline the potential benefits and risks of genetic engineering.	<input type="checkbox"/>	I can evaluate the potential benefits and risks of genetic engineering.	<input type="checkbox"/>
	I can describe why some people are against the cloning of animals.	<input type="checkbox"/>	I can describe economic and ethical concerns that people may have about cloning animals.	<input type="checkbox"/>	I can explain in detail the significance of events in the field of genetics.	<input type="checkbox"/>

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B14.7 Making choices about genetic technologies	I can state one concern people may have about growing GM crops.	<input type="checkbox"/>	I can outline the potential benefits and risks of genetic engineering.	<input type="checkbox"/>	I can evaluate the potential benefits and risks of genetic engineering.	<input type="checkbox"/>
	I can describe why some people are against the cloning of animals.	<input type="checkbox"/>	I can describe economic and ethical concerns that people may have about cloning animals.	<input type="checkbox"/>	I can explain in detail the significance of events in the field of genetics.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B14.1 Evidence for evolution	I can describe what a fossil is and give an example.	<input type="checkbox"/>	I can describe how fossils are formed.	<input type="checkbox"/>	I can evaluate the use of fossils as evidence for evolution by natural selection and how life first formed.	<input type="checkbox"/>
	I can recognise that fossils are evidence for evolution by natural selection.	<input type="checkbox"/>	I can describe how fossils are evidence for evolution by natural selection.	<input type="checkbox"/>	I can use standard form to discuss the large time scales that we use when considering the evolution of life.	<input type="checkbox"/>
	I can order geological events.	<input type="checkbox"/>	I can explain why the fossil record is not complete.	<input type="checkbox"/>	I can create a geological timeline to scale.	<input type="checkbox"/>
B14.2 Fossils and extinction	I can state what is meant by extinction.	<input type="checkbox"/>	I can describe how other organisms can cause an animal or plant to become extinct.	<input type="checkbox"/>	I can suggest alternative hypotheses for why an organism became extinct.	<input type="checkbox"/>
	I can describe one way that an animal could become extinct.	<input type="checkbox"/>	I can suggest a hypothesis for why an organism became extinct.	<input type="checkbox"/>	I can evaluate in detail the need to conserve endangered plants.	<input type="checkbox"/>
	I can order fossil diagrams to show the evolution of the horse.	<input type="checkbox"/>	I can explain how fossil diagrams show how the horse has evolved.	<input type="checkbox"/>	I can apply knowledge of speciation to explain why dodos were only found on one island.	<input type="checkbox"/>
B14.3 More about extinction	I can describe what a mass extinction is.	<input type="checkbox"/>	I can suggest the effects of an asteroid, comet or meteorite strike on Earth.	<input type="checkbox"/>	I can link ideas to give a scientific explanation why an asteroid could have caused the dinosaurs to become extinct.	<input type="checkbox"/>
	I can state that environmental change and a catastrophic event are two possible causes of mass extinction.	<input type="checkbox"/>	I can explain how environmental change can cause mass extinctions.	<input type="checkbox"/>	I can suggest why mass extinctions are important for the evolution of life on Earth.	<input type="checkbox"/>
	I can describe one theory that explains why the dinosaurs became extinct.	<input type="checkbox"/>	I can identify strengths and weaknesses in two different theories of mass extinction.	<input type="checkbox"/>	I can evaluate two theories to come to a conclusion about which is more believable and explain why scientists are not sure what caused the extinction of dinosaurs or mammoths.	<input type="checkbox"/>

Name _____ Class _____ Date _____

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B14.4 Antibiotic resistant bacteria	I can state what is meant by an antibiotic resistant bacteria.	<input type="checkbox"/>	I can describe how antibiotic resistant bacteria evolve.	<input type="checkbox"/>	I can explain how a fast reproduction rate is linked to the development of antibiotic resistance strains.	<input type="checkbox"/>
	I can describe why scientists want to slow down the rate of development of new strains of antibiotic resistant bacteria.	<input type="checkbox"/>	I can explain why scientists need to develop new antibiotics.	<input type="checkbox"/>	I can explain how antibiotic resistant bacteria are evidence for evolution.	<input type="checkbox"/>
	I can list some ways scientists can slow down the development of new strains of antibiotic resistant bacteria.	<input type="checkbox"/>	I can create an information sheet outlining important facts about antibiotic resistant bacteria to the public.	<input type="checkbox"/>	I can summarise the reasons why the development of new antibiotics is unlikely to keep up with the emergence of new strains of antibiotic resistant bacteria.	<input type="checkbox"/>
B14.5 Classification	I can state what classification is.	<input type="checkbox"/>	I can describe the classification system developed by Carl Linnaeus, to include the order of the taxonomic groups.	<input type="checkbox"/>	I can use the Linnaean system to name the groups that given organisms belong to.	<input type="checkbox"/>
	I can classify animals into groups based on their shared characteristics.	<input type="checkbox"/>	I can identify genus and species from a scientific name.	<input type="checkbox"/>	I can suggest why hybrids are not assigned scientific names using the binomial system.	<input type="checkbox"/>
	I can write an organism's name correctly using the binomial system.	<input type="checkbox"/>	I can explain why a binomial naming system is useful.	<input type="checkbox"/>		
B14.6 New systems of classification	I can name the three domains.	<input type="checkbox"/>	I can describe how organisms are divided in the three domain system.	<input type="checkbox"/>	I can compare and contrast the Linnaean system with the three domain system.	<input type="checkbox"/>
	I can state that ideas about classification have changed over time.	<input type="checkbox"/>	I can describe why the three domain system was proposed.	<input type="checkbox"/>	I can outline how ideas about classification have developed over time.	<input type="checkbox"/>
	I can draw a conclusion from a simple evolutionary tree.	<input type="checkbox"/>	I can draw several conclusions from a simple evolutionary tree.	<input type="checkbox"/>	I can draw conclusions from a more complex evolutionary tree.	<input type="checkbox"/>

Name Class Date

Name _____ Class _____ Date _____

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B15.1 The importance of communities	I can state what is meant by ecosystem, population and community.	<input type="checkbox"/>	I can define the terms community, population, habitat, ecosystem, abiotic factor, biotic factor.	<input type="checkbox"/>	I can link keywords to explain why a community is stable and important.	<input type="checkbox"/>
	I can list some resources that living things need.	<input type="checkbox"/>	I can describe what a stable community is and give an example.	<input type="checkbox"/>	I can use evidence to write hypotheses about why populations have changed in a community.	<input type="checkbox"/>
	I can use a given example to describe why one species relies on another.	<input type="checkbox"/>	I can suggest how one species relies on another.	<input type="checkbox"/>	I can explain why interdependence is important in maintaining a stable community.	<input type="checkbox"/>
B15.2 Organisms in their environment	I can identify factors as biotic or abiotic.	<input type="checkbox"/>	I can describe how a factor influences the distribution of organisms.	<input type="checkbox"/>	I can describe in detail how to measure the pH and water content of soil.	<input type="checkbox"/>
	I can use an instrument to measure an abiotic factor.	<input type="checkbox"/>	I can record measurements of abiotic factors.	<input type="checkbox"/>	I can analyse data in detail and draw appropriate conclusions.	<input type="checkbox"/>
B15.3 Distribution and abundance	I can state the function of a quadrat and transect.	<input type="checkbox"/>	I can explain how to use a quadrat and transect to estimate population size.	<input type="checkbox"/>	I can discuss what factors determine the size of the quadrat used.	<input type="checkbox"/>
	I can follow a method to estimate a population using a sampling technique.	<input type="checkbox"/>	I can design a method to estimate a population using a sampling technique.	<input type="checkbox"/>	I can design independently an investigation based around a question or hypothesis.	<input type="checkbox"/>
	I can calculate the mean of a set of results.	<input type="checkbox"/>	I can calculate range, mean, median and mode in order to analyse results.	<input type="checkbox"/>	I can evaluate in detail the use of sampling to estimate population size.	<input type="checkbox"/>

Name _____ Class _____ Date _____

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B15.4 Competition in animals	I can recognise that animals compete with each other for resources.	<input type="checkbox"/>	I can use information to suggest factors that animals are competing for in a given habitat.	<input type="checkbox"/>	I can evaluate a model of competition between organisms.	<input type="checkbox"/>
	I can list resources that animals compete with each other for.	<input type="checkbox"/>	I can explain tactics that help an animal compete for a resource.	<input type="checkbox"/>	I can use the terms inter-specific and intra-specific competition and give examples of each.	<input type="checkbox"/>
	I can describe what will happen to an animal if it cannot compete for resources.	<input type="checkbox"/>	I can describe how the distribution of a species has changed because of competition.	<input type="checkbox"/>	I can suggest and explain how animals are adapted to compete for resources.	<input type="checkbox"/>
B15.5 Competition in plants	I can list resources that plants compete with each other for.	<input type="checkbox"/>	I can suggest factors that plants are competing for in a given habitat.	<input type="checkbox"/>	I can plan a method to investigate competition between cress seeds.	<input type="checkbox"/>
	I can state what seed dispersal is and give some ways plants carry it out.	<input type="checkbox"/>	I can explain why plants use seed dispersal.	<input type="checkbox"/>	I can analyse data to explain the effects of overcrowding.	<input type="checkbox"/>
	I can make measurements of seedlings.	<input type="checkbox"/>	I can describe the methods plants use to outcompete others or avoid competition.	<input type="checkbox"/>	I can suggest the problems caused by plants that can easily outcompete others.	<input type="checkbox"/>
B15.6 Adapt and survive	I can state one example of how an organism is adapted.	<input type="checkbox"/>	I can suggest features that an organism may have in order to survive in a given habitat.	<input type="checkbox"/>	I can suggest and explain in detail how an organism in an extreme location might evolve to become better adapted to its habitat.	<input type="checkbox"/>
	I can define an extremophile.	<input type="checkbox"/>	I can explain how adaptations allow an organism to survive in its habitat.	<input type="checkbox"/>	I can apply knowledge of extremophiles to discuss why scientists believe there could be life on other planets (or moons).	<input type="checkbox"/>

Name _____ Class _____ Date _____

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B15.7 Adaptations in animals	I can state one example of an animal adaptation.	<input type="checkbox"/>	I can classify adaptations as structural, behavioural or functional.	<input type="checkbox"/>	I can suggest structural, behavioural or functional adaptations.	<input type="checkbox"/>
	I can describe why it is important that most animals maintain the correct body temperature.	<input type="checkbox"/>	I can calculate surface area to volume ratio.	<input type="checkbox"/>	I can explain and illustrate how surface area to volume ratio is linked to maintaining the correct body temperature.	<input type="checkbox"/>
	I can describe why fur or feathers can be used to maintain a warm body temperature.	<input type="checkbox"/>	I can describe how animals are adapted to live in hot, dry and cold habitats.	<input type="checkbox"/>	I can discuss how and why climate change is affecting the distribution of animals.	<input type="checkbox"/>
B15.8 Adaptations in plants	I can state one example of a plant adaptation.	<input type="checkbox"/>	I can explain how a plant adaptation allows it to survive in its habitat.	<input type="checkbox"/>	I can explain how an unfamiliar plant is adapted and give reasons for its adaptations.	<input type="checkbox"/>
	I can describe why plants need a constant supply of water.	<input type="checkbox"/>	I can explain why plants need to reduce water loss by transpiration.	<input type="checkbox"/>	I can link and explain rate of transpiration to leaf surface.	<input type="checkbox"/>
	I can draw a graph to display data, with guidance.	<input type="checkbox"/>	I can display data using a graph and describe what it shows.	<input type="checkbox"/>	I can suggest and explain why a cactus would not survive in a cold climate.	<input type="checkbox"/>

Name _____ Class _____ Date _____

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B16.1 Feeding relationships	I can state the meaning of producer, consumer, predator, prey and give examples of each.	<input type="checkbox"/>	I can identify producers, primary consumers, secondary consumers, tertiary consumers, predators and prey in a food web.	<input type="checkbox"/>	I can explain in detail why all living things depend on producers.	<input type="checkbox"/>
	I can identify producers, consumers, predators and prey in a food chain.	<input type="checkbox"/>	I can describe what happens to a population in a food web when another changes.	<input type="checkbox"/>	I can evaluate in detail food chains/webs as models to show feeding relationships.	<input type="checkbox"/>
	I can describe what a graph shows about how the numbers of predator and prey change over time.	<input type="checkbox"/>	I can plot data as a line graph and explain the pattern of predator and prey populations.	<input type="checkbox"/>	I can make predictions based on data of a predator prey relationship.	<input type="checkbox"/>
B16.2 Materials cycling	I can state what a decomposer is and give examples.	<input type="checkbox"/>	I can explain why decomposers are important to a stable ecosystem.	<input type="checkbox"/>	I can explain how detritivores increase the rate of decay using ideas about surface area.	<input type="checkbox"/>
	I can name some substances that are recycled in the living world.	<input type="checkbox"/>	I can explain the importance of recycling substances.	<input type="checkbox"/>	I can explain how substances change as they decay.	<input type="checkbox"/>
	I can describe the events in the water cycle.	<input type="checkbox"/>	I can describe the events in the decay cycle.	<input type="checkbox"/>	I can comment on the limitations of a simple model of decay.	<input type="checkbox"/>
B16.3 The carbon cycle	I can state that carbon atoms are moved around the Earth (recycled).	<input type="checkbox"/>	I can describe the events in the carbon cycle.	<input type="checkbox"/>	I can explain in detail why the concentration of carbon dioxide in the atmosphere is rising and why this is an issue.	<input type="checkbox"/>
	I can give one reason why we need to recycle carbon.	<input type="checkbox"/>	I can explain why the carbon cycle is vital to life on Earth.	<input type="checkbox"/>	I can explain the links between photosynthesis, respiration and combustion in the carbon cycle.	<input type="checkbox"/>
	I can use a diagram of the carbon cycle to describe the main processes involved.	<input type="checkbox"/>	I can write word equations for photosynthesis, respiration and combustion.	<input type="checkbox"/>	I can write balanced symbol equations for photosynthesis, respiration and combustion.	<input type="checkbox"/>

AQA Biology

GCSE Student Checklist

B17 Biodiversity and ecosystems

Name _____ Class _____ Date _____

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B17.1 The human population explosion	I can state what biodiversity means.	<input type="checkbox"/>	I can describe why a good level of biodiversity is important to the future of the human species.	<input type="checkbox"/>	I can explain in detail why a high level of biodiversity is important to the stability of ecosystems.	<input type="checkbox"/>
	I can list some resources that humans are using up.	<input type="checkbox"/>	I can describe some effects of human population growth.	<input type="checkbox"/>	I can explain why human population change differs from population change of other animals.	<input type="checkbox"/>
	I can state some ways that air, water and land is polluted.	<input type="checkbox"/>	I can analyse and interpret data and information concerning human population growth.	<input type="checkbox"/>	I can suggest and evaluate solutions to the problems caused by human population growth.	<input type="checkbox"/>
B17.2 Land and water pollution	I can state some substances that pollute the water and land.	<input type="checkbox"/>	I can describe how sewage, fertilisers, pesticides and herbicides pollute the land and water.	<input type="checkbox"/>	I can explain in detail how pollution affects biodiversity.	<input type="checkbox"/>
	I can state some effects of rubbish, pesticides and sewage on land and water.	<input type="checkbox"/>	I can describe the process of eutrophication and bioaccumulation.	<input type="checkbox"/>	I can explain how pesticides in water can kill top predators in food chains.	<input type="checkbox"/>
	I can display data appropriately with guidance.	<input type="checkbox"/>	I can draw conclusions from data.	<input type="checkbox"/>	I can consider a land or water-based pollution issue, stating opinions with reasoning.	<input type="checkbox"/>
B17.3 Air pollution	I can state that acid rain is caused as a result of burning some fuels.	<input type="checkbox"/>	I can describe how acid rain is formed.	<input type="checkbox"/>	I can use word and symbol equations to show how burning some fuels produces acidic gases.	<input type="checkbox"/>
	I can list some effects of acid rain on plants and animals.	<input type="checkbox"/>	I can plan an investigation to find out how acid rain affects the germination of seeds.	<input type="checkbox"/>	I can explain what causes global dimming and smog and describe their effects.	<input type="checkbox"/>
	I can analyse observations and data with guidance.	<input type="checkbox"/>	I can choose a suitable method for analysing data.	<input type="checkbox"/>	I can analyse in detail data showing sulphur emissions over the last 3 years and suggest reasons for the trend.	<input type="checkbox"/>

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Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
B17.4 Deforestation and peat destruction	I can define deforestation.	<input type="checkbox"/>	I can explain the effects of deforestation and peat removal.	<input type="checkbox"/>	I can explain in detail how deforestation and peat removal increases the amount of carbon dioxide in the air.	<input type="checkbox"/>
	I can state at least one reason for deforestation and one effect.	<input type="checkbox"/>	I can categorise reasons for and effects of deforestation as environmental, social, economic and/or political.	<input type="checkbox"/>	I can analyse data to describe a trend in deforestation rate and give an explanation.	<input type="checkbox"/>
	I can give a use for peat.	<input type="checkbox"/>	I can describe why there is a conflict between using peat to increase food production and the need to conserve peat bogs.	<input type="checkbox"/>	I can explain the conflict between using peat to increase food production and the need to conserve peat bogs.	<input type="checkbox"/>
B17.5 Global warming	I can state that global warming is caused by increased levels of carbon dioxide and methane in the atmosphere.	<input type="checkbox"/>	I can use the terms greenhouse effect, global warming and climate change correctly.	<input type="checkbox"/>	I can produce scale diagrams showing some of the contributors to the greenhouse effect.	<input type="checkbox"/>
	I can give one biological consequence of global warming.	<input type="checkbox"/>	I can describe in detail the biological consequences of global warming.	<input type="checkbox"/>	I can explain in detail the causes and effects of rising carbon dioxide and methane levels in the atmosphere.	<input type="checkbox"/>
B17.6 Maintaining biodiversity	I can list some ways in which people can help maintain biodiversity.	<input type="checkbox"/>	I can describe programmes to reduce negative effects on ecosystems and explain how they work.	<input type="checkbox"/>	I can evaluate the conflicting pressures on maintaining biodiversity in some habitats.	<input type="checkbox"/>
	I can state reasons why some habits are at risk.	<input type="checkbox"/>	I can use information to explain the conflicting pressures on maintaining biodiversity.	<input type="checkbox"/>	I can link ideas to suggest why recycling can help protect habitats.	<input type="checkbox"/>