

Biology KS3 End Points



Lesson	KS2	Year 7	Year 8	Year 9
8.1.1 Levels of organisation	I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.	I can state what is meant by a tissue, and organ, and an organ system. <input type="checkbox"/>	I can define and state examples of tissues, organs, and organ systems. <input type="checkbox"/>	I can give a detailed explanation of the hierarchy of organisation in a multi-cellular organism, using a range of examples. <input type="checkbox"/>
		I can state the sequence of the hierarchy of organisation in a multi-cellular organism. <input type="checkbox"/>	I can explain the hierarchy of organisation in a multi-cellular organism. <input type="checkbox"/>	I can explain how the different tissues in an organ and the different organs in an organ system function together. <input type="checkbox"/>
		When given the necessary information, I can list the organs found in a given organ system, and state the function of that system. <input type="checkbox"/>	I can interpret information to decide on the function of the individual organs and of the organ system. <input type="checkbox"/>	I can interpret information to explain the functions of several organ systems. <input type="checkbox"/>
8.1.2 The skeleton		I can name the main parts of the skeleton. <input type="checkbox"/>	I can describe the structure of the skeleton. <input type="checkbox"/>	I can explain the relationship between the bones and joints in the skeleton. <input type="checkbox"/>
		I can list the functions of the muscular skeletal system. <input type="checkbox"/>	I can describe the functions of the muscular skeletal system. <input type="checkbox"/>	I can explain the link between structure and function in the muscular skeletal system. <input type="checkbox"/>
8.1.3 Movement: joints		I can state where joints are found in the body. <input type="checkbox"/>	I can describe the role of joints. <input type="checkbox"/>	I can explain how the parts of a joint allow it to function. <input type="checkbox"/>
		I can state how a muscle exerts force during movement. <input type="checkbox"/>	I can explain how to measure the force exerted by different muscles. <input type="checkbox"/>	I can explain the relationship between the forces required to move different masses. <input type="checkbox"/>
		I can carry out an experiment to make simple observations. <input type="checkbox"/>	I can carry out an experiment to make and record measurements of forces using the correct units. <input type="checkbox"/>	I can carry out an experiment to record measurements of forces, evaluating the accuracy and precision of the method. <input type="checkbox"/>
8.1.4 Movement: muscles		I can state the function of major muscle groups. <input type="checkbox"/>	I can describe the function of major muscle groups. <input type="checkbox"/>	I can explain how the muscle groups interact with other tissues to cause movement. <input type="checkbox"/>

		I can state the definition for antagonistic muscles. <input type="checkbox"/>	I can explain how antagonistic muscles cause movement. <input type="checkbox"/>	I can explain why it is necessary to have both muscles in an antagonistic pair to cause movement. <input type="checkbox"/>
		I can carry out an experiment to study the muscle system in a chicken wing. <input type="checkbox"/>	I can interpret observations in a chicken wing to describe how the muscles work together to cause movement. <input type="checkbox"/>	I can interpret observations in a chicken wing to explain how the muscles work together to cause movement. <input type="checkbox"/>

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8.2.1 Observing cells		I can state what a cell is. <input type="checkbox"/>	I can describe what a cell is. <input type="checkbox"/>	I can explain what all living organisms are made of. <input type="checkbox"/>
		I can describe how to use a microscope to observe a cell. <input type="checkbox"/>	I can explain how to use a microscope to observe a cell. <input type="checkbox"/>	I can explain what each part of the microscope does and how it is used. <input type="checkbox"/>
		I can use a microscope to observe a prepared slide, with assistance. <input type="checkbox"/>	I can use a microscope to observe a prepared slide and state the magnification. <input type="checkbox"/>	I can use a microscope to observe a prepared slide, calculating a range of magnifications. <input type="checkbox"/>
8.2.2 Plant and animal cells		I can identify one similarity and one difference between a plant and an animal cell. <input type="checkbox"/>	I can describe the similarities and differences between plant and animal cells. <input type="checkbox"/>	I can explain the similarities and differences between plant and animal cells. <input type="checkbox"/>
		I can match some components of a cell to their functions. <input type="checkbox"/>	I can describe the functions of the components of a cell. <input type="checkbox"/>	I can explain the functions of the components of a cell by linking them to life processes. <input type="checkbox"/>
		With support, I can prepare and observe a microscope slide safely. <input type="checkbox"/>	I can prepare and observe cells on a microscope slide safely. <input type="checkbox"/>	I can prepare and observe cells on a microscope slide safely, using scale and magnification. <input type="checkbox"/>
8.2.3 Specialised cells		I can name some specialised animal cells. <input type="checkbox"/>	I can describe examples of specialised animal cells. <input type="checkbox"/>	I can describe examples of specialised animal cells, linking structure to function. <input type="checkbox"/>
		I can name some specialised plant cells. <input type="checkbox"/>	I can describe examples of specialised plant cells. <input type="checkbox"/>	I can describe examples of specialised plant cells, linking structure to function. <input type="checkbox"/>
		I can state structural adaptations of plant and animal cells. <input type="checkbox"/>	I can describe structural adaptations of plant and animal cells. <input type="checkbox"/>	I can compare and contrast structural adaptations of plant and animal cells. <input type="checkbox"/>
8.2.4 Movement of substances		I can identify substances that move into or out of cells. <input type="checkbox"/>	I can name some substances that move into and out of cells. <input type="checkbox"/>	I can explain which substances move into and out of cells. <input type="checkbox"/>
		I can state what diffusion is. <input type="checkbox"/>	I can describe the process of diffusion. <input type="checkbox"/>	I can explain the process of diffusion. <input type="checkbox"/>
		I can make sets of observations or measurements for <input type="checkbox"/>	I can collect data for diffusion of coloured gel, choosing appropriate <input type="checkbox"/>	I can choose and justify data collection methods for investigating the diffusion of <input type="checkbox"/>

		diffusion of coloured gel, identifying the ranges and intervals used.	ranges, numbers, and values for measurements and observation.	coloured gel that minimise error, and produce precise and reliable data.
8.2.5 Uni-cellular organisms		I can name an example of a uni-cellular organism. <input type="checkbox"/>	I can describe what a uni-cellular organism is. <input type="checkbox"/>	I can explain what a uni-cellular organism is and give detailed examples. <input type="checkbox"/>
		I can identify some structures in an amoeba. <input type="checkbox"/>	I can describe the structure of an amoeba. <input type="checkbox"/>	I can describe the structure and function of an amoeba. <input type="checkbox"/>
		I can identify some structures in a euglena. <input type="checkbox"/>	I can describe the structure of a euglena. <input type="checkbox"/>	I can describe the structure and function of a euglena. <input type="checkbox"/>
		I can select the appropriate apparatus to observe an amoeba and a euglena cell. <input type="checkbox"/>	I can select the appropriate magnification to observe an amoeba and a euglena cell through a microscope. <input type="checkbox"/>	I can give justifications for the choice of magnification when observing an amoeba and a euglena cell through a microscope. <input type="checkbox"/>

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8.3.1 Gas exchange	I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	I can name the parts of the gas exchange system.	I can describe the structure of the gas exchange system.	I can describe the gas exchange system as an organ system, linking the organs.
	I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	I can state that the parts of the gas exchange system are adapted to their function. <input type="checkbox"/>	I can describe how the parts of the gas exchange system are adapted to their function. <input type="checkbox"/>	I can explain how the adaptations of the parts of the gas exchange system help them perform their function. <input type="checkbox"/>
		I can state that the composition of the air inhaled and exhaled are different using data provided.	I can interpret data given to compare the difference in the composition of inhaled and exhaled air.	I can interpret data given to explain the difference in the composition of inhaled and exhaled air.
8.3.2 Breathing	I can state what happens to the ribcage and diaphragm during inhaling and exhaling. <input type="checkbox"/>	I can describe the processes of inhaling and exhaling air. <input type="checkbox"/>	I can explain how the actions of the ribcage and diaphragm lead to inhaling and exhaling. <input type="checkbox"/>	
	I can state what each part of the bell-jar model represents. <input type="checkbox"/>	I can describe how a bell jar can be used to model what happens during breathing. <input type="checkbox"/>	I can explain the similarities and differences between the bell jar and the breathing system. <input type="checkbox"/>	
	I can state a value of lung volume. <input type="checkbox"/>	I can explain how to measure lung volume. <input type="checkbox"/>	I can explain in detail how to measure lung volumes. <input type="checkbox"/>	
	I can use appropriately calibrated apparatus to obtain a lung volume. <input type="checkbox"/>	I can use appropriately calibrated apparatus to obtain a lung volume. <input type="checkbox"/>	I can use appropriately calibrated apparatus to obtain an accurate lung volume, evaluating the precision of instruments involved. <input type="checkbox"/>	
	8.3.3 Drugs	I can name some recreational and medicinal drugs. <input type="checkbox"/>	I can describe the difference between recreational and medicinal drugs. <input type="checkbox"/>	I can explain why people take different medicinal and recreational drugs. <input type="checkbox"/>
I can state one effect of a drug on health or behaviour. <input type="checkbox"/>		I can describe the effects of drugs on health and behaviour. <input type="checkbox"/>	I can explain how recreational drugs can have a negative effect on people's lifestyles. <input type="checkbox"/>	

		I can make observations during an experiment. <input type="checkbox"/>	I can interpret experimental observations to draw simple conclusions. <input type="checkbox"/>	I can record accurate and detailed observations from an experiment to draw detailed conclusions, and evaluate methods. <input type="checkbox"/>
8.3.4 Alcohol		I can name one effect of alcohol on health or behaviour. <input type="checkbox"/>	I can describe the effect of alcohol on health and behaviour. <input type="checkbox"/>	I can explain in detail how alcohol affects health and behaviour, detailing its effect on life processes. <input type="checkbox"/>
		I can state whether alcohol affects conception and pregnancy. <input type="checkbox"/>	I can describe the effect alcohol has on conception and pregnancy. <input type="checkbox"/>	I can explain the importance of providing information about drinking to the general public, not just pregnant women. <input type="checkbox"/>
		I can record results in a given table and plot a graph of results obtained. <input type="checkbox"/>	I can design a results table and plot subsequent experimental data on an appropriate graph. <input type="checkbox"/>	I can record data in a well-organised table (with headings and units) and plot an appropriate graph to present results. <input type="checkbox"/>
	8.3.5 Smoking		I can name an effect of tobacco smoke on health. <input type="checkbox"/>	I can describe the effects of tobacco smoke on health. <input type="checkbox"/>
		I can state whether or not tobacco smoke affects the development of a fetus. <input type="checkbox"/>	I can describe the effects of tobacco smoke on pregnancy. <input type="checkbox"/>	I can explain which chemicals in tobacco smoke affect the development of a foetus. <input type="checkbox"/>
		I can interpret secondary data and present this data on a bar chart. <input type="checkbox"/>	I can present secondary data using an appropriate method, interpreting this data to draw conclusions. <input type="checkbox"/>	I can interpret and present secondary data in an appropriate manner. I can then draw conclusions, and extrapolate data from trends shown. <input type="checkbox"/>

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8.4.1 Nutrients	<p>I can identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</p> <p>I can describe the simple functions of the basic parts of the digestive system in humans</p>	I can name some nutrients in a given diet.	I can describe the components of a healthy diet.	I can explain what makes a food a healthy option.
		I can name the nutrients required by the human body. <input type="checkbox"/>	I can explain the role of each nutrient in the body. <input type="checkbox"/>	I can explain how each nutrient contributes to a healthy, balanced diet. <input type="checkbox"/>
		I can extract nutritional information from food packaging.	I can interpret nutritional information on food packaging to identify a healthy food.	I can interpret nutritional information to make health comparisons between foods.
8.4.2 Food tests	<p>I can identify the different types of teeth in humans and their simple functions</p> <p>I can describe the ways in which nutrients and water are transported within animals, including humans</p>	I can state that food can be tested for starch, lipids, sugar, and protein. <input type="checkbox"/>	I can describe how to test foods for starch, lipids, sugar, and protein. <input type="checkbox"/>	I can explain why testing food for starch, lipids, sugar, and protein is important. <input type="checkbox"/>
		I can state that food tests show colour changes. <input type="checkbox"/>	I can describe the positive result for each food test. <input type="checkbox"/>	I can explain the meaning of positive or negative results in terms of the food tests. <input type="checkbox"/>
		I can use appropriate techniques to carry out a food test safely. <input type="checkbox"/>	I can use appropriate techniques to carry out a range of food tests safely. <input type="checkbox"/>	I can use appropriate techniques to carry out a full range of food tests safely. I can interpret the findings and relate them to everyday situations. <input type="checkbox"/>
		I can state one potential problem for someone with an unhealthy diet. <input type="checkbox"/>	I can describe some health issues caused by an unhealthy diet. <input type="checkbox"/>	I can explain how an unhealthy diet causes health issues. <input type="checkbox"/>
8.4.3 Unhealthy diet		I can state that different people require different amounts of energy. <input type="checkbox"/>	I can calculate the energy requirements of different people. <input type="checkbox"/>	I can explain that different people require different amounts of energy. I can use energy calculations and data to support explanations. <input type="checkbox"/>
		I can collect experimental data and record observations. <input type="checkbox"/>	I can collect experimental data and draw conclusions from <input type="checkbox"/>	I can interpret experimental data and suggest ways to <input type="checkbox"/>

			results obtained.	improve the experiment.
8.4.4 Digestive system	I can name the main parts of the digestive system. <input type="checkbox"/>	I can describe the structure and function of the main parts of the digestive system. <input type="checkbox"/>	I can explain how each part of the digestive system works in sequence, including how the small intestine is adapted for its function. <input type="checkbox"/>	
	I can state what is meant by digestion. <input type="checkbox"/>	I can describe the process of digestion. <input type="checkbox"/>	I can explain why food needs to be digested. <input type="checkbox"/>	
	I can identify the main structures in the digestive system on a model. <input type="checkbox"/>	I can give a structured account of digestion. <input type="checkbox"/>	I can give a detailed explanation of digestion in sequence. <input type="checkbox"/>	
8.4.5 Bacteria and enzymes in digestion	I can name some enzymes used in digestion.	I can describe the role of enzymes in digestion.	I can explain how enzymes affect the rate of digestion.	
	I can state where bacteria are found in the digestive system. <input type="checkbox"/>	I can describe the role of bacteria in digestion. <input type="checkbox"/>	I can explain how some bacteria improve health. <input type="checkbox"/>	
	I can record measurements from an experiment.	I can record experimental data using a suitable results table.	I can record experimental data using a suitable results table, and evaluate the quality of the data.	

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9.1.1 Food chains and webs	I can recognise that living things can be grouped in a variety of ways	I can state the definition of a food chain.	I can describe what food chains show.	I can explain the link between food chains and energy.
	I can explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	I can state the definition of a food web. <input type="checkbox"/>	I can describe what food webs show. <input type="checkbox"/>	I can explain why a food web gives a more accurate representation of feeding relationships that a food chain. <input type="checkbox"/>
			I can combine food chains to form a food web.	
9.1.2 Disruptions to food chains	I can recognise that environments can change and that this can sometimes pose dangers to living things.	I can state that one population of organisms can affect another. <input type="checkbox"/>	I can describe the interdependence of organisms. <input type="checkbox"/>	I can explain the interdependence of organisms. <input type="checkbox"/>
	I can construct and interpret a variety of food chains, identifying producers, predators and prey	I can state that toxic material can get into food chains. <input type="checkbox"/>	I can explain effects of toxic materials on a species' population. <input type="checkbox"/>	I can explain how toxic materials can accumulate in human food sources. <input type="checkbox"/>
		I can present population data as a graph, and describe simple patterns shown. <input type="checkbox"/>	I can present population data as a graph to describe trends and draw conclusions. <input type="checkbox"/>	I can present population data as a graph, explaining trends and drawing detailed conclusions from data provided. <input type="checkbox"/>
			I can explain issues with human food supplies in terms of insect pollinators. <input type="checkbox"/>	
9.1.3 Ecosystems		I can state that different organisms can co-exist. <input type="checkbox"/>	I can describe how different organisms co-exist within an ecosystem. <input type="checkbox"/>	I can explain why different organisms are needed in an ecosystem. <input type="checkbox"/>
		I can state the definition of the term niche. <input type="checkbox"/>	I can identify niches within an ecosystem. <input type="checkbox"/>	I can explain why different organisms within the same ecosystem have different niches. <input type="checkbox"/>

		I can record data from sampling an ecosystem. <input type="checkbox"/>	I can use quadrats to take measurements in an ecosystem, and describe trends observed. <input type="checkbox"/>	I can use quadrats and transects to take unbiased measurements in an ecosystem, and describe trends observed in data. <input type="checkbox"/>
9.1.4 Competition		I can state some resources that plants and animals compete for. <input type="checkbox"/>	I can describe some resources that plants and animals compete for. <input type="checkbox"/>	I can explain the effect of competition on the individual. <input type="checkbox"/>
		I can interpret secondary data to describe simple predator-prey relationships. <input type="checkbox"/>	I can interpret secondary data to describe trends and draw conclusions about predator-prey relationships. <input type="checkbox"/>	I can make a deduction based on data about what caused a change in the population of a species. <input type="checkbox"/>
				I can suggest what might happen when an unfamiliar species is introduced into a food web. <input type="checkbox"/>

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9.2.1 Flowers and pollination	I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers	I can name the parts of a flower.	I can identify the main structures in a flower and link their structure to their function.	I can explain how the structures of the flower are adapted to their function.
	I can explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant	I can state what is meant by pollination. <input type="checkbox"/>	I can describe the process of pollination. <input type="checkbox"/>	I can suggest how plants breeders use knowledge of pollination to carry out selective breeding. <input type="checkbox"/>
		I can name two methods of pollination.	I can describe the differences between wind pollinated and insect pollinated plants.	I can explain the processes of wind and insect pollination, comparing the similarities and differences between the two.
		I can investigate the way in which water is transported within plants	I can use appropriate techniques to dissect a flower into its main parts. <input type="checkbox"/>	I can use appropriate techniques to dissect a flower and record detailed observations. <input type="checkbox"/>
9.2.2 Fertilisation and germination	I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	I can state what is meant by fertilisation in plants. <input type="checkbox"/>	I can describe the process of fertilisation in plants. <input type="checkbox"/>	I can explain the process of fertilisation in plants, explaining the role of each of the parts involved in the process. <input type="checkbox"/>
		I can state what seeds and fruit are. <input type="checkbox"/>	I can describe how seeds and fruits are formed. <input type="checkbox"/>	I can explain how the germination of seeds occurs. <input type="checkbox"/>
		I can make and record observations of germination. <input type="checkbox"/>	I can make and record observations in a table with clear headings and units, using data to calculate percentage germination. <input type="checkbox"/>	I can make and record observations in a table, using data to calculate percentage germination, and evaluating experimental procedure. <input type="checkbox"/>
		9.2.3 Seed dispersal	I can state what is meant by seed dispersal. <input type="checkbox"/>	I can describe methods seed dispersal, and use the features of seeds and fruit to explain how they are <input type="checkbox"/>

			adapted to their method.	
		I can name the methods of seed dispersal. <input type="checkbox"/>	I can explain why seed dispersal is important to survival of the parent plant and its offspring. <input type="checkbox"/>	I can develop an argument about why a particular plant structure increases the likelihood of successful production of offspring. <input type="checkbox"/>
		I can plan a simple experiment, stating the variables, when given a hypothesis. <input type="checkbox"/>	I can plan a simple experiment to test one hypothesis about seed dispersal, identifying a range of variables. <input type="checkbox"/>	I can plan and design an experiment to test a hypothesis about seed dispersal, clearly explaining all the variables involved. <input type="checkbox"/>

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9.3.1 Aerobic respiration		I can state the requirements for aerobic respiration.	I can state the word equation for aerobic respiration.	I can explain how the reactants for respiration get into the cells.
		I can give the name of the process by which energy is released in cells. <input type="checkbox"/>	I can describe the process of respiration. <input type="checkbox"/>	I can explain the process of aerobic respiration. <input type="checkbox"/>
		I can plan an experiment to measure breathing rates.	I can plan an investigation to measure the effect of exercise on breathing rates.	I can plan an investigation to explain the effect of exercise on respiration rates.
9.3.2 Anaerobic respiration		I can state the products of anaerobic respiration. <input type="checkbox"/>	I can state the word equation for anaerobic respiration. <input type="checkbox"/>	I can explain the uses of the products from anaerobic respiration. <input type="checkbox"/>
		I can state one difference between aerobic and anaerobic respiration. <input type="checkbox"/>	I can describe the differences between aerobic and anaerobic respiration. <input type="checkbox"/>	I can explain the differences between the two types of respiration. <input type="checkbox"/>
		I can identify one source of error in data collected. <input type="checkbox"/>	I can evaluate data collected, suggesting possible sources of error. <input type="checkbox"/>	I can evaluate data collected, showing awareness of potential sources of random and systematic errors. <input type="checkbox"/>
9.3.3 Biotechnology		I can state what is meant by fermentation. <input type="checkbox"/>	I can write the word equation for fermentation. <input type="checkbox"/>	I can explain how the process of fermentation works in relation to the word equation. <input type="checkbox"/>
		I can name the organism used to make bread, beer, and wine. <input type="checkbox"/>	I can describe how bread, beer, and wine are made. <input type="checkbox"/>	I can explain why temperature is important in the making of bread, beer, and wine. <input type="checkbox"/>
		I can make observations about the rising of bread dough in an investigation. <input type="checkbox"/>	I can investigate the effect of temperature on fermentation, recording measurements and drawing a conclusion. <input type="checkbox"/>	I can investigate the effect of temperature on fermentation, using results to draw a conclusion, and suggest one way to minimise error. <input type="checkbox"/>

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9.4.1 Photosynthesis		I can state where photosynthesis occurs in a plant.	I can describe the process of photosynthesis.	I can explain the importance of photosynthesis in the food chain.
		I can state the products of photosynthesis. <input type="checkbox"/>	I can state the word equation for photosynthesis. <input type="checkbox"/>	I can explain how the plant obtains the reactants for photosynthesis. <input type="checkbox"/>
		I can state how to test for the presence of oxygen.	I can carry out an experiment to prove that oxygen is produced during photosynthesis.	I can carry out and record observations for an experiment to prove that oxygen is produced during photosynthesis.
9.4.2 Leaves		I can name the main structures of a leaf. <input type="checkbox"/>	I can describe the structure and function of the main components of a leaf. <input type="checkbox"/>	I can explain how the structures of the leaf make it well adapted for photosynthesis. <input type="checkbox"/>
		I can state the function of the chloroplasts in a leaf. <input type="checkbox"/>	I can explain the distribution of the chloroplasts in a leaf. <input type="checkbox"/>	I can explain the role of chloroplasts in photosynthesis. <input type="checkbox"/>
		I can use observations from the underside of a leaf to label a diagram. <input type="checkbox"/>	I can make observations of stomata from the underside of the leaf, and record observations as a labelled diagram. <input type="checkbox"/>	I can make observations of stomata from the underside of the leaf, and record as a labelled diagram with annotations. <input type="checkbox"/>
9.4.3 Investigating photosynthesis		I can carry out an experiment to test for the presence of starch in a leaf. <input type="checkbox"/>	I can carry out and record observations for an experiment to test for the presence of starch in a leaf. <input type="checkbox"/>	I can carry out and record observations for an experiment to test for the presence of starch in a leaf, explaining results obtained. <input type="checkbox"/>
		I can list the factors that affect the rate of photosynthesis. <input type="checkbox"/>	I can state the relationship between temperature, light intensity, <input type="checkbox"/>	I can describe why low temperature, shortage of carbon dioxide, and <input type="checkbox"/>

			and availability of carbon dioxide with the rate of photosynthesis.	shortage of light limit the rate of photosynthesis.
		I can state two experiments which can be used to prove photosynthesis has taken place. <input type="checkbox"/>		I can state and explain which method of investigating photosynthesis could be used to measure the rate of photosynthesis. <input type="checkbox"/>
9.4.4 Plants minerals		I can name the minerals required by plants. <input type="checkbox"/>	I can describe how a plant uses minerals for healthy growth. <input type="checkbox"/>	I can explain deficiency symptoms in plants. <input type="checkbox"/>
		I can state that nitrates are essential for plant growth. <input type="checkbox"/>	I can explain the role of nitrates in plant growth. <input type="checkbox"/>	I can explain how proteins are made for plant growth. <input type="checkbox"/>
		I can record measurements of plant growth. <input type="checkbox"/>	I can record measurements in a table, and calculate arithmetic means of results. <input type="checkbox"/>	I can record measurements in a table, and calculate arithmetic means of results, giving answers to the correct number of significant figures. <input type="checkbox"/>

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10.1.1 Variation	<p>I can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p>	I can state what is meant by the term variation.	I can describe how variation in species occurs.	I can explain how variation gives rise to different species.
		I can state that variation is caused by the environment or inheritance. <input type="checkbox"/>	I can explain whether characteristics are inherited, environmental, or both. <input type="checkbox"/>	I can critique a claim that a particular characteristic is inherited or environmental. <input type="checkbox"/>
		I can record observations of variations between different species of gull.	I can record and categorise observations of variations between different species of gull.	I can record and categorise observations of variations between different species of gull to suggest species boundaries.
10.1.2 Continuous and discontinuous		I can state that there are two types of variation. <input type="checkbox"/>	I can describe the difference between continuous and discontinuous variation. <input type="checkbox"/>	I can explain the causes of continuous and discontinuous variation. <input type="checkbox"/>
		I can state the two types of graphs that can be drawn when representing the two types of variation. <input type="checkbox"/>	I can use knowledge of continuous and discontinuous variation to explain whether characteristics are inherited, environmental, or both. <input type="checkbox"/>	I can record results in a table, and identify and plot an appropriate graph to show variation within a species. <input type="checkbox"/>
		I can record results in a table and plot a graph on axes provided. <input type="checkbox"/>	I can plot bar charts or line graphs to show discontinuous or continuous variation data. <input type="checkbox"/>	
			I can record results in a table and plot a histogram. <input type="checkbox"/>	
10.1.3 Adapting to change		I can name an environmental change. <input type="checkbox"/>	I can explain how organisms are adapted to their environments. <input type="checkbox"/>	I can explain how organisms are adapted to seasonal changes. <input type="checkbox"/>
		I can give a possible reason for adaptation or extinction. <input type="checkbox"/>	I can explain how variation helps a particular species in a <input type="checkbox"/>	I can explain how competition or long-term environmental change <input type="checkbox"/>

			<p>changing environment.</p>	<p>can lead to evolutionary adaptation or extinction. I can explain the role variation plays in a species success.</p>
			<p>I can describe how organisms are adapted to their environment. <input type="checkbox"/></p>	<p>I can predict implications of a change in the environment on a population. <input type="checkbox"/></p>

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10.2.1 Adolescence	I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	I can state the definitions for adolescence and puberty.	I can state the difference between adolescence and puberty.	I can explain the difference between adolescence and puberty.
	I can describe the life process of reproduction in some plants and animals.	I can state changes to the bodies of boys and girls during puberty. <input type="checkbox"/>	I can describe the main changes that take place during puberty. <input type="checkbox"/>	I can explain the main changes that take place during puberty. <input type="checkbox"/>
	I can describe the changes as humans develop to old age.	I can interpret observations given, as changes that occur in boys or in girls.	I can interpret observations given, to categorise the changes during adolescence.	I can interpret observations given, to categorise and explain physical and emotional changes during adolescence.
10.2.2 Reproductive systems		I can name the main structures of the male and female reproductive systems, including gametes. <input type="checkbox"/>	I can describe the main structures in the male and female reproductive systems. <input type="checkbox"/>	I can explain how different parts of the male and female reproductive systems work together to achieve certain functions. <input type="checkbox"/>
		I can state a function of the main structures of the male and female reproductive systems. <input type="checkbox"/>	I can describe the function of the main structures in the male and female reproductive systems. <input type="checkbox"/>	I can explain the adaptations of some of the main structures that help them function. <input type="checkbox"/>
		I can extract information from text to state structures and functions of the key parts of the reproductive systems in a table. <input type="checkbox"/>	I can extract information from text to describe structures and functions of the key parts of the reproductive systems in a table. <input type="checkbox"/>	I can extract information from text to explain structures and functions of the key parts of the reproductive systems in a table. <input type="checkbox"/>
10.2.3 Fertilisation and implantation		I can state what is meant by a person being infertile. <input type="checkbox"/>	I can describe some causes of infertility. <input type="checkbox"/>	I can discuss some causes of infertility and how these may be treated. <input type="checkbox"/>
		I can state what is meant by fertilisation. <input type="checkbox"/>	I can describe the process of fertilisation and where it occurs in the body. <input type="checkbox"/>	I can explain the sequence of fertilisation and implantation. <input type="checkbox"/>

		I can state that if an egg is fertilised it settles into the uterus lining. <input type="checkbox"/>	I can use a diagram to show the main steps that take place from the production of sex cells to the formation of an embryo. <input type="checkbox"/>	
10.2.4 Development of a foetus		I can state the definition of gestation. <input type="checkbox"/>	I can describe what happens during gestation. <input type="checkbox"/>	I can describe accurately the sequence of events during gestation. <input type="checkbox"/>
		I can state how long a pregnancy lasts. <input type="checkbox"/>	I can describe what happens during birth. <input type="checkbox"/>	I can explain in detail how contractions bring about birth. <input type="checkbox"/>
			I can explain whether substances are passed from the mother to the fetus or not. <input type="checkbox"/>	I can predict the effect of cigarettes, alcohol, or drugs on the developing fetus. <input type="checkbox"/>
10.2.5 The menstrual cycle		I can state the length of the menstrual cycle. <input type="checkbox"/>	I can state what the menstrual cycle is. <input type="checkbox"/>	I can explain why pregnancy is more or less likely at certain stages of the menstrual cycle. <input type="checkbox"/>
		I can state the main stages in the menstrual cycle. <input type="checkbox"/>	I can identify key events on a diagram of the menstrual cycle. <input type="checkbox"/>	I can make deductions about how contraception methods work. <input type="checkbox"/>
		I can present key pieces of information in a sequence. <input type="checkbox"/>	I can present information in the form of a graphical timeline. <input type="checkbox"/>	I can present information in the form of a scaled timeline or pie chart. <input type="checkbox"/>

Lesson	KS2	Year 7	Year 8	Year 9
10.3.1 Natural selection	<p>I can describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</p> <p>I can give reasons for classifying plants and animals based on specific characteristics</p>	I can state how survival rates differ for successful adaptation.	I can describe the process of natural selection.	I can explain how natural selection leads to evolution.
		I can state that organisms have changed over time, giving examples. <input type="checkbox"/>	I can describe how organisms evolve over time. <input type="checkbox"/>	I can explain how scientists know that organisms have changed over time. <input type="checkbox"/>
		I can create a simple evolutionary sequence.	I can create an evolutionary family tree, justifying the route chosen in the tree.	I can create an evolutionary family tree, and present reasoned arguments to justify the structure of the tree.
10.3.2 Charles Darwin	<p>I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p>	I can state what is meant by peer review. <input type="checkbox"/>	I can describe the process of peer review. <input type="checkbox"/>	I can explain the importance of peer review to scientists. <input type="checkbox"/>
		I can name the process by which organisms evolve. <input type="checkbox"/>	I can describe the evidence that Darwin used to develop his theory of natural selection. <input type="checkbox"/>	I can explain how Darwin used the evidence from finches to develop his theory of natural selection and evolution. <input type="checkbox"/>
10.3.3 Extinction	.	I can state what is meant by the term extinct. <input type="checkbox"/>	I can describe some factors that may lead to extinction. <input type="checkbox"/>	I can explain some factors that may have led to extinction. <input type="checkbox"/>
		I can state what is meant by biodiversity. <input type="checkbox"/>	I can use examples to describe the difference between an area of high biodiversity and an area of low biodiversity. <input type="checkbox"/>	I can explain how a lack of biodiversity can affect an ecosystem. <input type="checkbox"/>
		I can extract information from scientific text about a possible theory for dinosaur extinction. <input type="checkbox"/>	I can interpret evidence provided in scientific texts to explain the most likely theory for dinosaur extinction. <input type="checkbox"/>	I can interpret evidence provided in a range of scientific texts to explain the most likely theory for dinosaur extinction. <input type="checkbox"/>

10.3.4 Preserving biodiversity	I can state what is meant by an endangered species. <input type="checkbox"/>	I can describe what is meant by captive breeding. <input type="checkbox"/>	I can explain some of the advantages and disadvantages of captive breeding. <input type="checkbox"/>
	I can name one way of protecting endangered species. <input type="checkbox"/>	I can describe some techniques used to prevent extinction. <input type="checkbox"/>	I can explain how the techniques used to prevent extinction work. <input type="checkbox"/>
	I can identify simple patterns in data. <input type="checkbox"/>	I can use data from a graph to describe the effect of Project Tiger on the local tiger population. <input type="checkbox"/>	I can link ideas given in the text to explain data presented in a graph. <input type="checkbox"/>

Lesson	KS2	Year 7	Year 8	Year 9
10.4.1 Inheritance		I can state what is meant by DNA.	I can describe the relationship between DNA, genes, and chromosomes.	I can explain how a change in DNA may affect an organism.
		I can state what is meant by a chromosome. <input type="checkbox"/>	I can describe how chromosomes from both parents combine to form offspring. <input type="checkbox"/>	I can explain how a change in DNA may affect the future offspring of an organism. <input type="checkbox"/>
		I can state what is meant by a gene.	I can state what is meant by a mutation.	I can explain why gametes have 23 chromosomes, but normal body cells contain 46 chromosomes.
10.4.2 DNA		I can build a model of the DNA molecule. <input type="checkbox"/>	I can describe the structure of DNA. <input type="checkbox"/>	I can explain why it is important for scientists to work together. <input type="checkbox"/>
		I can name four scientists who worked on the structure of DNA. <input type="checkbox"/>	I can describe how scientists worked together to discover the structure of DNA. <input type="checkbox"/>	
10.4.3 Genetics		I can state what is meant by an allele. <input type="checkbox"/>	I can describe the difference between dominant and recessive alleles. <input type="checkbox"/>	I can explain how dominant or recessive alleles can be expressed as external features. <input type="checkbox"/>

		<p>I can state that genetics allows us to track alleles from one generation to the next. <input type="checkbox"/></p>	<p>I can use a Punnett square to show what happens during a genetic cross. <input type="checkbox"/></p>	<p>I can explain how to use a Punnett square to predict the outcome of a genetic cross. <input type="checkbox"/></p>
		<p>I can complete a Punnett square to state how many offspring will have a particular characteristic. <input type="checkbox"/></p>	<p>I can trace characteristics through a family tree using Punnett squares, giving answers as percentages and ratios. <input type="checkbox"/></p>	<p>I can trace characteristics through a family tree using Punnett squares, calculating the probability of different outcomes. <input type="checkbox"/></p>
<p>10.4.4 Genetic modification</p>		<p>I can state what is meant by genetic modification. <input type="checkbox"/></p>	<p>I can state how an organism can be genetically modified. <input type="checkbox"/></p>	<p>I can describe how an organism can be genetically modified to display a desired characteristic. <input type="checkbox"/></p>
		<p>I can name a product produced by a genetically modified organism. <input type="checkbox"/></p>	<p>I can describe some advantages of producing products through genetic modification. <input type="checkbox"/></p>	<p>I can analyse advantages and disadvantages of producing products through genetic modification. <input type="checkbox"/></p>