Biology KS3 Curriculum Map

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

	I can carry out an experiment to study the muscle system in a chicken wing. ☐	I can interpret observations in a chicken wing to describe how the muscles work together to cause movement. ☐	I can interpret observations in a chicken wing to explain how the muscles work together to cause movement. ☐

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8.2.1 Observing cells	I can state what a cell is. ☐	I can describe what a cell is. ☐	I can explain what all living organisms are made of. ☐
	I can describe how to use a microscope to observe a cell. ☐	I can explain how to use a microscope to observe a cell. ☐	I can explain what each part of the microscope does and how it is used. ☐
	I can use a microscope to observe a prepared slide, with assistance. ☐	I can use a microscope to observe a prepared slide and state the magnification. ☐	I can use a microscope to observe a prepared slide, calculating a range of magnifications. ☐
8.2.2 Plant an animal cells	I can identify one similarity and one difference between a plant and an animal cell. ☐	I can describe the similarities and differences between plant and animal cells. ☐	I can explain the similarities and differences between plant and animal cells. ☐
	I can match some components of a cell to their functions. ☐	I can describe the functions of the components of a cell. ☐	I can explain the functions of the components of a cell by linking them to life processes. ☐
	With support, I can prepare and observe a microscope slide safely. ☐	I can prepare and observe cells on a microscope slide safely. ☐	I can prepare and observe cells on a microscope slide safely, using scale and magnification. ☐
8.2.3 Specialised cells	I can name some specialised animal cells. ☐	I can describe examples of specialised animal cells. ☐	I can describe examples of specialised animal cells, linking structure to function. ☐
	I can name some specialised plant cells. ☐	I can describe examples of specialised plant cells. ☐	I can describe examples of specialised plant cells, linking structure to function. ☐
	I can state structural adaptations of plant and animal cells. ☐	I can describe structural adaptations of plant and animal cells. ☐	I can compare and contrast structural adaptations of plant and animal cells. ☐
8.2.4 Movement of substances	I can identify substances that move into or out of cells. ☐	I can name some substances that move into and out of cells. ☐	I can explain which substances move into and out of cells. ☐
	I can state what diffusion is. ☐	I can describe the process of diffusion. ☐	I can explain the process of diffusion. ☐

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	I can make sets of observations or measurements for diffusion of coloured gel, identifying the ranges and intervals used. ☐	I can collect data for diffusion of coloured gel, choosing appropriate ranges, numbers, and values for measurements and observation. ☐	I can choose and justify data collection methods for investigating the diffusion of 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. ☐	I can describe what a uni-cellular organism is. ☐	I can explain what a uni-cellular organism is and give detailed examples. ☐
	I can identify some structures in an amoeba. ☐	I can describe the structure of an amoeba. ☐	I can describe the structure and function of an amoeba. ☐
	I can identify some structures in a euglena. ☐	I can describe the structure of a euglena. ☐	I can describe the structure and function of a euglena. ☐
	I can select the appropriate apparatus to observe an amoeba and a euglena cell. ☐	I can select the appropriate magnification to observe an amoeba and a euglena cell through a microscope. ☐	I can give justifications for the choice of magnification when observing an amoeba and a euglena cell through a microscope. ☐

Lesson	Year 7 Know	Year 8 Apply	Year 9 Extend
8.3.1 Gas exchange	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 state that the parts of the gas exchange system are adapted to their function. ☐	I can describe how the parts of the gas exchange system are adapted to their function. ☐	I can explain how the adaptations of the parts of the gas exchange system help them perform their function. ☐
	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. ☐	I can describe the processes of inhaling and exhaling air. ☐	I can explain how the actions of the ribcage and diaphragm lead to inhaling and exhaling. ☐
	I can state what each part of the bell-jar model represents. ☐	I can describe how a bell jar can be used to model what happens during breathing. ☐	I can explain the similarities and differences between the bell jar and the breathing system. ☐

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	I can state a value of lung volume. ☐	I can explain how to measure lung volume. ☐	I can explain in detail how to measure lung volumes. ☐
	I can use appropriately calibrated apparatus to obtain a lung volume. ☐	I can use appropriately calibrated apparatus to obtain a lung volume. ☐	I can use appropriately calibrated apparatus to obtain an accurate lung volume, evaluating the precision of instruments involved. ☐
8.3.3 Drugs	I can name some recreational and medicinal drugs. ☐	I can describe the difference between recreational and medicinal drugs. ☐	I can explain why people take different medicinal and recreational drugs. ☐
	I can state one effect of a drug on health or behaviour. ☐	I can describe the effects of drugs on health and behaviour. ☐	I can explain how recreational drugs can have a negative effect on people's lifestyles. ☐
	I can make observations during an experiment. ☐	I can interpret experimental observations to draw simple conclusions. ☐	I can record accurate and detailed observations from an experiment to draw detailed conclusions, and evaluate methods. ☐
8.3.4 Alcohol	I can name one effect of alcohol on health or behaviour. ☐	I can describe the effect of alcohol on health and behaviour. ☐	I can explain in detail how alcohol affects health and behaviour, detailing its effect on life processes. ☐
	I can state whether alcohol affects conception and pregnancy. ☐	I can describe the effect alcohol has on conception and pregnancy. ☐	I can explain the importance of providing information about drinking to the general public, not just pregnant women. ☐
	I can record results in a given table and plot a graph of results obtained. ☐	I can design a results table and plot subsequent experimental data on an appropriate graph. ☐	I can record data in a well-organised table (with headings and units) and plot an appropriate graph to present results. ☐
8.3.5 Smoking	I can name an effect of tobacco smoke on health. ☐	I can describe the effects of tobacco smoke on health. ☐	I can explain how smoking causes disease. ☐
	I can state whether or not tobacco smoke affects the development of a fetus. ☐	I can describe the effects of tobacco smoke on pregnancy. ☐	I can explain which chemicals in tobacco smoke affect the development of a foetus. ☐

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	I can interpret secondary data and present this data on a bar chart. ☐	I can present secondary data using an appropriate method, interpreting this data to draw conclusions. ☐	I can interpret and present secondary data in an appropriate manner. I can then draw conclusions, and extrapolate data from trends shown. ☐

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8.4.1 Nutrients	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. ☐	I can explain the role of each nutrient in the body. ☐	I can explain how each nutrient contributes to a healthy, balanced diet. ☐
	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	I can state that food can be tested for starch, lipids, sugar, and protein. ☐	I can describe how to test foods for starch, lipids, sugar, and protein. ☐	I can explain why testing food for starch, lipids, sugar, and protein is important. ☐
	I can state that food tests show colour changes. ☐	I can describe the positive result for each food test. ☐	I can explain the meaning of positive or negative results in terms of the food tests. ☐
	I can use appropriate techniques to carry out a food test safely. ☐	I can use appropriate techniques to carry out a range of food tests safely. ☐	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. ☐
8.4.3 Unhealthy diet	I can state one potential problem for someone with an unhealthy diet. ☐	I can describe some health issues caused by an unhealthy diet. ☐	I can explain how an unhealthy diet causes health issues. ☐
	I can state that different people require different amounts of energy. ☐	I can calculate the energy requirements of different people. ☐	I can explain that different people require different amounts of energy. I can use energy calculations and data to support explanations. ☐
	I can collect experimental data and record observations. ☐	I can collect experimental data and draw conclusions from results obtained. ☐	I can interpret esperimental data and suggest ways to improve the experiment. ☐

Lesson	Year 7 Know	Year 8 Apply	Year 9 Extend
8.4.4 Digestive system	I can name the main parts of the digestive system. ☐	I can describe the structure and function of the main parts of the digestive system. ☐	I can explain how each part of the digestive system works in sequence, including how the small intestine is adapted for its function. ☐
	I can state what is meant by digestion. ☐	I can describe the process of digestion. ☐	I can explain why food needs to be digested. ☐
	I can identify the main structures in the digestive system on a model. ☐	I can give a structured account of digestion. ☐	I can give a detailed explanation of digestion in sequence. ☐
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. ☐	I can describe the role of bacteria in digestion. ☐	I can explain how some bacteria improve health. ☐
	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 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 state the definition of a food web. ☐	I can describe what food webs show. ☐	I can explain why a food web gives a more accurate representation of feeding relationships that a food chain. ☐
		I can combine food chains to form a food web. ☐	
9.1.2 Disruptions to food chains	I can state that one population of organisms can affect another. ☐	I can describe the interdependence of organisms. ☐	I can explain the interdependence of organisms. ☐
	I can state that toxic material can get into food chains. ☐	I can explain effects of toxic materials on a species' population. ☐	I can explain how toxic materials can accumulate in human food sources. ☐

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	I can present population data as a graph, and decribe simple patterns shown. ☐	I can present population data as a graph to describe trends and draw conclusions. ☐	I can present population data as a graph, explaining trends and drawing detailed conclusions from data provided. ☐
		I can explain issues with human food supplies in terms of insect pollinators. ☐	
9.1.3 Ecosystems	I can state that different organisms can co-exist. ☐	I can describe how different organisms co-exist within an ecosystem. ☐	I can explain why different organisms are needed in an ecosystem. ☐
	I can state the definition of the term niche. ☐	I can identify niches within an ecosystem. ☐	I can explain why different organisms within the same ecosystem have different niches. ☐
	I can record data from sampling an ecosystem. ☐	I can use quadrats to take measurements in an ecosystem, and describe trends observed. ☐	I can use quadrats and transects to take unbiased measurements in an ecosystem, and describe trends observed in data. ☐
9.1.4 Competition	I can state some resources that plants and animals compete for. ☐	I can describe some resources that plants and animals compete for. ☐	I can explain the effect of competition on the individual. ☐
	I can interpret secondary data to describe simple predator-prey relationships. ☐	I can interpret secondary data to describe trends and draw conclusions about predator-prey relationships. ☐	I can make a deduction based on data about what caused a change in the population of a species. ☐
			I can suggest what might happen when an unfamiliar species is introduced into a food web. ☐

Lesson	Year 7	Year 8	Year 9
9.2.1 Flowers and pollination	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. ☐

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	I can state what is meant by pollination. ☐	I can describe the process of pollination. ☐	I can suggest how plants breeders use knowledge of pollination to carry out selective breeding. ☐
	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 use appropriate techniques to dissect a flower into its main parts. ☐	I can use appropriate techniques to dissect a flower and record detailed observations. ☐
9.2.2 Fertilisation and germination	I can state what is meant by fertilisation in plants. ☐	I can describe the process of fertilisation in plants. ☐	I can explain the process of fertilisation in plants, explaining the role of each of the parts involved in the process. ☐
	I can state what seeds and fruit are. ☐	I can describe how seeds and fruits are formed. ☐	I can explain how the germination of seeds occurs. ☐
	I can make and record observations of germination. ☐	I can make and record observations in a table with clear headings and units, using data to calculate percentage germination. ☐	I can make and record observations in a table, using data to calculate percentage germination, and evaluating experimental procedure. ☐
9.2.3 Seed dispersal	I can state what is meant by seed dispersal. ☐	I can describe methods seed dispersal, and use the features of seeds and fruit to explain how they are adapted to their method. ☐	I can explain how the adaptations of seeds aid their dispersal. ☐
	I can name the methods of seed dispersal. ☐	I can explain why seed dispersal is important to survival of the parent plant and its offspring. ☐	I can develop an argument about why a particular plant structure increases the likelihood of successful production of offspring. ☐
	I can plan a simple experiment, stating the variables, when given a hypothesis. ☐	I can plan a simple experiment to test one hypothesis about seed dispersal, identifying a range of variables. ☐	I can plan and design an experiment to test a hypothesis about seed dispersal, clearly explaining all the variables involved. ☐

Lesson	Year 7 Know	Year 8 Apply	Year 9 Extend
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. ☐	I can describe the process of respiration. ☐	I can explain the process of aerobic respiration. ☐
	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. ☐	I can state the word equation for anaerobic respiration. ☐	I can explain the uses of the products from anaerobic respiration. ☐
	I can state one difference between aerobic and anaerobic respiration. ☐	I can describe the differences between aerobic and anaerobic respiration. ☐	I can explain the differences between the two types of respiration. ☐
	I can identify one source of error in data collected. ☐	I can evaluate data collected, suggesting possible sources of error. ☐	I can evaluate data collected, showing awareness of potential sources of random and systematic errors. ☐
9.3.3 Biotechnology	I can state what is meant by fermentation. ☐	I can write the word equation for fermentation. ☐	I can explain how the process of fermentation works in relation to the word equation. ☐
	I can name the organism used to make bread, beer, and wine. ☐	I can describe how bread, beer, and wine are made. ☐	I can explain why temperature is important in the making of bread, beer, and wine. ☐
	I can make observations about the rising of bread dough in an investigation. ☐	I can carry out an investigation to investigate the effect of temperature on fermentation, recording measurements and drawing a conclusion. ☐	I can carry out an investigation to investigate the effect of temperature on fermentation, using results to draw a conclusion, and suggest one way to minimise error. ☐

Lesson	Year 7 Know	Year 8 Apply	Year 9 Extend
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. ☐

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	I can state the products of photosynthesis. ☐	I can state the word equation for photosynthesis. ☐	I can explain how the plant obtains the reactants for photosynthesis. ☐
	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. ☐	I can describe the structure and function of the main components of a leaf. ☐	I can explain how the structures of the leaf make it well adapted for photosynthesis. ☐
	I can state the function of the chloroplasts in a leaf. ☐	I can explain the distribution of the chloroplasts in a leaf. ☐	I can explain the role of chloroplasts in photosynthesis. ☐
	I can use observations from the underside of a leaf to label a diagram. ☐	I can make observations of stomata from the underside of the leaf, and record observations as a labelled diagram. ☐	I can make observations of stomata from the underside of the leaf, and record as a labelled diagram with annotations. ☐
9.4.3 Investigating photosynthesis	I can carry out an experiment to test for the presence of starch in a leaf. ☐	I can carry out and record observations for an experiment to test for the presence of starch in a leaf. ☐	I can carry out and record observations for an experiment to test for the presence of starch in a leaf, explaining results obtained. ☐
	I can list the factors that affect the rate of photosynthesis. ☐	I can state the relationship between temperature, light intensity, and availability of carbon dioxide with the rate of photosynthesis. ☐	I can describe why low temperature, shortage of carbon dioxide, and shortage of light limit the rate of photosynthesis. ☐
	I can state two experiments which can be used to prove photosynthesis has taken place. ☐		I can state and explain which method of investigating photosynthesis could be used to measure the rate of photosynthesis. ☐
9.4.4 Plants minerals	I can name the minerals required by plants. ☐	I can describe how a plant uses minerals for healthy growth. ☐	I can explain deficiency symptoms in plants. ☐
	I can state that nitrates are essential for plant growth. ☐	I can explain the role of nitrates in plant growth. ☐	I can explain how proteins are made for plant growth. ☐

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	I can record measurements of plant growth. ☐	I can record measurements in a table, and calculate arithmetic means of results. ☐	I can record measurements in a table, and calculate arithmetic means of results, giving answers to the correct number of significant figures. ☐

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10.1.1 Variation	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. ☐	I can explain whether characteristics are inherited, environmental, or both. ☐	I can critique a claim that a particular characteristic in inherited or environmental. ☐
	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. ☐	I can describe the difference between continuous and discontinuous variation. ☐	I can explain the causes of continuous and discontinuous variation. ☐
	I can state the two types of graphs that can be drawn when representing the two types of variation. ☐	I can use knowledge of continuous and discontinuous variation to explain whether characteristics are inherited, environmental, or both. ☐	I can record results in a table, and identify and plot an appropriate graph to show variation within a species. ☐
	I can record results in a table and plot a graph on axes provided. ☐	I can plot bar charts or line graphs to show discontinuous or continuous variation data. ☐	
		I can record results in a table and plot a histogram. ☐	
10.1.3 Adapting to change	I can name an environmental change. ☐	I can explain how organisms are adapted to their environments. ☐	I can explain how organisms are adapted to seasonal changes. ☐

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	I can give a possible reason for adaptation or extinction. ☐	I can explain how variation helps a particular species in a changing environment. ☐	I can explain how competition or long-term environmental change can lead to evolutionary adaptation or extinction. I can explain the role variation plays in a species success. ☐
		I can describe how organisms are adapted to their environment. ☐	I can predict implications of a change in the environment on a population. ☐

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10.2.1 Adolescence	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 state changes to the bodies of boys and girls during puberty. ☐	I can describe the main changes that take place during puberty. ☐	I can explain the main changes that take place during puberty. ☐
	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. ☐	I can describe the main structures in the male and female reproductive systems. ☐	I can explain how different parts of the male and female reproductive systems work together to achieve certain functions. ☐
	I can state a function of the main structures of the male and female reproductive systems. ☐	I can describe the function of the main structures in the male and female reproductive systems. ☐	I can explain the adaptations of some of the main structures that help them function. ☐
	I can extract information from text to state structures and functions of the key parts of the reproductive systems in a table. ☐	I can extract information from text to describe structures and functions of the key parts of the reproductive systems in a table. ☐	I can extract information from text to explain structures and functions of the key parts of the reproductive systems in a table. ☐
10.2.3 Fertilisation and implantation	I can state what is meant by a person being infertile. ☐	I can describe some causes of infertility. ☐	I can discuss some causes of infertility and how these may be treated. ☐

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	I can state what is meant by fertilisation. ☐	I can describe the process of fertilisation and where it occurs in the body. ☐	I can explain the sequence of fertilisation and implantation. ☐
	I can state that if an egg is fertilised it settles into the uterus lining. ☐	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. ☐	
10.2.4 Development of a fetus	I can state the definition of gestation. ☐	I can describe what happens during gestation. ☐	I can describe accurately the sequence of events during gestation. ☐
	I can state how long a pregnancy lasts. ☐	I can describe what happens during birth. ☐	I can explain in detail how contractions bring about birth. ☐
		I can explain whether substances are passed from the mother to the fetus or not. ☐	I can predict the effect of cigarettes, alcohol, or drugs on the developing fetus. ☐
10.2.5 The menstrual cycle	I can state the length of the menstrual cycle. ☐	I can state what the menstrual cycle is. ☐	I can explain why pregnancy is more or less likely at certain stages of the menstrual cycle. ☐
	I can state the main stages in the menstrual cycle. ☐	I can identify key events on a diagram of the menstrual cycle. ☐	I can make deductions about how contraception methods work. ☐
	I can present key pieces of information in a sequence. ☐	I can present information in the form of a graphical timeline. ☐	I can present information in the form of a scaled timeline or pie chart. ☐

Lesson	Year 7 Know	Year 8 Apply	Year 9 Extend
10.3.1 Natural selection	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. ☐	I can describe how organisms evolve over time. ☐	I can explain how scientists know that organisms have changed over time. ☐
	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. ☐

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10.3.2 Charles Darwin	I can state what is meant by peer review. ☐	I can describe the process of peer review. ☐	I can explain the importance of peer review to scientists. ☐
	I can name the process by which organisms evolve. ☐	I can describe the evidence that Darwin used to develop his theory of natural selection. ☐	I can explain how Darwin used the evidence from finches to develop his theory of natural selection and evolution. ☐
10.3.3 Extinction	I can state what is meant by the term extinct. ☐	I can describe some factors that may lead to extinction. ☐	I can explain some factors that may have led to extinction. ☐
	I can state what is meant by biodiversity. ☐	I can use examples to describe the difference between an area of high biodiversity and an area of low biodiversity. ☐	I can explain how a lack of biodiversity can affect an ecosystem. ☐
	I can extract information from scientific text about a possible theory for dinosaur extinction. ☐	I can interpret evidence provided in scientific texts to explain the most likely theory for dinosaur extinction. ☐	I can interpret evidence provided in a range of scientific texts to explain the most likely theory for dinosaur extinction. ☐
10.3.4 Preserving biodiversity	I can state what is meant by an endangered species. ☐	I can describe what is meant by captive breeding. ☐	I can explain some of the advantages and disadvantages of captive breeding. ☐
	I can name one way of protecting endangered species. ☐	I can describe some techniques used to prevent extinction. ☐	I can explain how the techniques used to prevent extinction work. ☐
	I can identify simple patterns in data. ☐	I can use data from a graph to describe the effect of Project Tiger on the local tiger population. ☐	I can link ideas given in the text to explain data presented in a graph. ☐

Lesson	Year 7 Know	Year 8 Apply	Year 9 Extend
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. ☐	I can describe how chromosomes from both parents combine to form offspring. ☐	I can explain how a change in DNA may affect the future offspring of an organism. ☐

Lesson	Year 7 Know	Year 8 Apply	Year 9 Extend
	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. ☐	I can describe the structure of DNA. ☐	I can explain why it is important for scientists to work together. ☐
	I can name four scientists who worked on the structure of DNA. ☐	I can describe how scientists worked together to discover the structure of DNA. ☐	
10.4.3 Genetics	I can state what is meant by an allele. ☐	I can describe the difference between dominant and recessive alleles. ☐	I can explain how dominant or recessive alleles can be expressed as external features. ☐
	I can state that genetics allows us to track alleles from one generation to the next. ☐	I can use a Punnett square to show what happens during a genetic cross. ☐	I can explain how to use a Punnett square to predict the outcome of a genetic cross. ☐
	I can complete a Punnett square to state how many offspring will have a particular characteristic. ☐	I can trace characteristics through a family tree usng Punnett squares, giving answers as percentages and ratios. ☐	I can trace characteristics through a family tree using Punnett squares, calculating the probability of different outcomes. ☐
10.4.4 Genetic modification	I can state what is meant by genetic modification. ☐	I can state how an organism can be genetically modified. ☐	I can describe how an organism can be genetically modified to display a desired characteristic. ☐
	I can name a product produced by a genetically modified organism. ☐	I can describe some advantages of producing products through genetic modification. ☐	I can analyse advantages and disadvantages of producing products through genetic modification. ☐