Science Progression Upper KS2

Year / Term	Themes/ Domains	Dimensions	Working towards	Expected	Mastery	Deepening and Applying
Year 5						
5a Autumn 1	**Biology** **Key Knowledge** Genetic information is passed from one generation of organisms to another	**Living things and their habitats** **Animals, including humans (Biology)** **AH5.1** Describe the changes as humans develop from birth to old age **ALT5.2** Describe the life process of reproduction in humans	I can describe the process of aging from birth to old age and explain the changes that occur I can describe the reproductive processes of humans and how this links to the transition to adulthood	I can sequence the process of aging from birth to old age and explain the changes that occur I can explain the reproductive processes of humans and how this links to the transition to adulthood	I can evaluate the changes that occur from birth to old age and explain their significance in terms of how we live I can reflect on the human reproductive process and compare and contrast this with other mammals	I can: Generalise about how humans grow and develop and this determines key features of our lives including our dependency on our parents, family life, care for the elderly
	Key Skills *Finding things out using secondary sources of information*	***Answer scientific questions using different types of scientific enquiry,*** *including:* • *noticing patterns, grouping and classifying things,* • *finding things out using secondary sources of information* • recording information of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations	I can: Answer scientific questions and describe my reasoning Carry out research to identify the similarities and difference in living things *using secondary sources of information* Record data diagrams, labels, graphs Report and present findings including describing cause and effect	I can: Answer scientific questions and explain my reasoning Carry out research to things explain the similarities and difference in living things *using secondary sources of information* Record data using a range of diagrams, labels, graphs and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research Carry out scientific research independently *noticing patterns, grouping and classifying things, using a range of secondary sources of information* Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions Report and present findings including:	Plan and carry out own research setting out your hypothesis and the rationale for your approach Present your information in new and different ways and evaluate the most appropriate approach

					Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	
		Create a visual human life cycle with all the key milestones Select a specific writing genre to tell the story of the human reproductive process	I can use diagrams and labels to describe the life cycle of a human and the physical changes that occur at each stage I can describe the human reproductive system, selecting an appropriate genre (i.e. adventure, graphic story, poem)	I can use diagrams and annotation to explain the life cycle of a human and the physical changes that occur at each stage I can write an innovative story to explain the human reproductive system, selecting an appropriate genre (i.e. adventure, cartoon, poem) including all of the key stages	I can create an illustrated guide to the human life cycle using the conventions of an information text I can prepare a presentation explaining the reproduction process of humans for a Year 5 class	I can evaluate different texts that explain the human reproductive process and identify which ones are most helpful – fully justifying my choice
5b Autumn 2	**Biology** **Key Knowledge** Genetic information is passed from one generation of organisms to another	**Living things and their habitats** **ALT5.1** Explain differences in the life cycles of a mammal, an amphibian, an insect and a bird **ALT5.2** Describe the life process of reproduction in some plants and animals	I can: Describe the life cycle of different creatures including mammals, amphibians, insects and birds and explain the difference Describe the life process of reproduction in some plants and animals	I can: Sequence the life cycle of different creatures including mammals, amphibians, insects and birds and explain the difference Sequence the life process of reproduction in plants and animals	I can: Generalise about the differences between the life cycle of different creatures including mammals, amphibians, insects and birds and explain some of the reasons for those differences Generalise about the differences between the life process of reproduction in plants and animals	Compare and contrast the life cycle of different animals in the same group for example an aquatic mammal and a land-based mammal Research and reflect on the life cycle of anomalies axolotl / marsupials And or air plants / giant redwood trees
	Key Skills Noticing patterns, grouping and classifying things	***Answer scientific questions using different types of scientific enquiry,*** *including:*	I can: Answer scientific questions	I can: Answer scientific questions and explain my reasoning	I can: Formulate scientifically valid questions, explain my reasoning and use these to	Plan and carry out own investigation setting out your hypothesis and the

	Finding things out using secondary sources of information *Finding things out using secondary sources of information*	• *noticing patterns, grouping and classifying things,* • *finding things out using secondary sources of information* • recording information of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations	Carry out research to identify patterns and classify living things *finding things out using secondary sources of information* Record data using diagrams, labels and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting	Carry out research to identify patterns and classify living things *finding things out using secondary sources of information* Record data using a range of diagrams, labels, graphs and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	inform my investigations and research Carry out scientific research independently *noticing patterns, grouping and classifying things, finding things out using a range of secondary sources of information* Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	rationale for your investigative approach Provide guidance for others on how to use particular scientific equipment correctly Present your information in new and different ways and evaluate the most appropriate approach
		Make a presentation on the interdependency of all living things and how changes to habitat and the loss of species impact on other living things **Explain the impact of genetics on the next generation and how this can be both positive and negative**	I can: Describe the interdependency of living things and how changes to habitat or the loss of species impact on other living things Describe the main functions of the human body Use my understanding of the human body to describe how to keep healthy	I can: Explain the interdependency of living things and how changes to habitat or the loss of species impact on other living things Explain the main functions of the human body Apply my understanding of the human body to explain how to keep healthy Explain how we inherit characteristics from our parents and give examples	I can: Generalise about the interdependency of living things and how changes to habitat or the loss of species impact on other living things giving examples Explain the main functions of the human body and evaluate how these functions work together to keep us healthy I can create a guide to healthy living based on my understanding of the functions of the human body	Produce a poster / flyer about an endangered species highlighting the impact not just on that creature but on other living things Evaluate the impact of an unhealthy diet on the functions of the body

			Describe how we inherit characteristics from our parents and give examples		Apply my understanding of the human body to explain how to keep healthy Reflect on how we inherit characteristics from our parents and give examples where this can be negative and positive	Research and explain how natural selection works in the animal kingdom
5c spring	**Physics** **Key knowledge** The solar system is a very small part of one million galaxies in the universe	**Earth and Space** **E&S5.1** Describe the movement of the Earth relative to the Sun in the solar system **E&S5.2** Describe the movement of the Moon relative to the Earth **E&S5.3** Describe the Sun, Earth and Moon as approximately spherical bodies **E&S5.4** Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky	I can: Describe the movement of the earth relative to the sun and the solar system Describe the movement of the moon relative to the earth Compare the sun, earth and the moon and describe their characteristics including, shape, size and physical makeup Describe how the rotation of the earth determines night and day	I can: Explain the movement of the earth relative to the sun and the solar system Explain the movement of the moon relative to the earth Compare and contrast the sun, earth and the moon and describe their characteristics including, shape, size and physical makeup Explain how the rotation of the earth determines night and day	I can: Generalise about the earths position in the solar system and the movement of the planets, including earth, relative to the sun Explain how the movement of the moon relative to the earth effects the tides Design a poster of the sun, earth and the moon to illustrate their characteristics including, shape, size and physical makeup using scale Generalise about how the rotation of the earth determines night and day and why the length of day changes across the year	Reflect on why there is no evidence of life on any other planet in the solar system based on their position in relation to the sun
	Key Skills Reporting and presenting findings from enquiries, including conclusions, causal	***Answer scientific questions using different types of scientific enquiry,*** *including:* • *observing changes over a period of time,* • *noticing patterns, grouping and classifying things,*	I can: Answer scientific questions Carry out research to identify patterns and classify the objects in the solar system *finding*	I can: Answer scientific questions and explain my reasoning Independently carry out research to identify patterns and classify the objects in the solar system *finding things out*	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research	Plan and carry out own research setting out your hypothesis and the rationale for your sources

	relationships and explanations of results in written forms such as displays and other presentations	• *finding things out using secondary sources of information* • recording information of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations	*things out using secondary sources of information* Record data using diagrams, labels and graphs Report and present findings including: Sequencing, comparing and contrasting, explain cause and effect	*using secondary sources of information* Record data using a range of diagrams, labels and graphs Report and present findings including: Sequencing, comparing and contrasting, explain cause and effect and justify my views	Carry out scientific research independently noticing patterns, grouping and classifying things, finding things out using a range of secondary sources of information Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	Present your information in new and different ways and evaluate the most appropriate approach
		Explain how our position in the solar system and the movement of the earth around the sun makes earth the only planet in our solar system with life and determines the climate in different regions	I can: Compare two regions of the earth and describe how the climate is created by its position and the impact of the sun	I can: Compare and contrast two regions of the earth to explain how the climate is created by its position and the impact of the sun	I can: Generalise about how the climate in different regions is affected by their location on the earth and the impact of the sun	I can: Evaluate which countries would be most affected by climate change and explain my reasoning
5d Summer 1	**Physics** **Key knowledge** Changing the movement of an object requires a net force to be acting on it.	**Forces** **FO5.1** Explain that unsupported objects fall towards the earth because of the force of gravity acting between the Earth and falling object **FO5.2** Identify the effects of air resistance, water resistance and friction, that act between moving surfaces **FO5.3** Recognise that some mechanisms, including levers,	I can: Describe the effect of gravity on a falling object Describe the forces that act on a moving object and how these impact on that movement Describe how pulleys and levers increase the effect of a force to	I can: Explain the effect of gravity on a falling object Explain the forces that act on a moving object and how these impact on that movement Explain how pulleys and levers increase the effect of a force to enable us to lift or move heavy objects	I can: Generalise about the effects of gravity on falling objects and on objects moving upwards Evaluate the impact of air and water resistance and friction on a vehicle and consider how this determines its shape I can generalise about how pulleys and levers allow us to lift heavy objects and prove	I can research examples of where we use pulleys and levers in everyday life

		pulleys and gears, allow a smaller force to have a greater effect	enable us to lift or move heavy objects		that we still have to put the same amount of effort in	
	Planning different types of scientific enquiries to answer questions, including: controlling variables where necessary taking measurements using a range of scientific equipment with increasing accuracy and precision	I can: Answer scientific questions and explain my reasoning Carry out scientific investigations effectively using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately Planning different types of scientific enquiries to answer questions, including: • controlling variables where necessary • taking measurements • using a range of scientific equipment with increasing accuracy and precision • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations	I can: Answer scientific questions Carry out scientific investigations using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately Record data using a range of diagrams, labels, graphs and classification keys Report and present findings including comparing and contrasting,	I can: Answer scientific questions and explain my reasoning Independently carry out scientific investigations effectively using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately Record data accurately using a range of diagrams, labels, graphs and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research Plan, hypothesise about the likely outcome and carry out scientific investigations effectively using the key skills of observation, testing, considering variables, taking measurements, and use scientific equipment with increasing accuracy and precision Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	Plan and carry out own investigation setting out your hypothesis and the rationale for your investigative approach Provide guidance for others on how to use particular scientific equipment correctly Present your information in new and different ways and evaluate the most appropriate approach
		Designing vehicles that are aerodynamic **Simple mechanisms in everyday use – link to DT to design a structure to lift a specified weight**	I can: Design a car that minimises air and water resistance and friction	I can: Design a car that minimises air and water resistance and friction and explain why	I can: Generalise about why air resistance and friction are important for safe driving	I can: Evaluate a range of different car shapes to assess which would be best for driving at

		Reflect on what it would be like in zero gravity – space travel	Calculate the number of pulleys to lift a specific weight and draw a diagram to illustrate this Research what we mean by zero gravity	Calculate the number of pulleys to lift a specific weight, draw a diagram to illustrate this and explain why Explain what we mean by zero gravity	I can create a formula for calculating the number of pulleys and the length of rope needed to raise a weight I can research the challenges of being in a zero-gravity environment such as the International Space Station	speed and justify my reasons I create some objects to take into space to combat the effects of zero gravity
5e summer 2	**Chemistry** **Key knowledge** All material in the universe is made of very small particles	**Properties of and changes to materials** **EM5.1** Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal) and response to magnets **EM5.2** Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution **EM5.3** Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporation **EM5.4** Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic **EM5.5** Demonstrate that dissolving, mixing and changes of state are reversible changes	I can: Compare different materials based on their properties Group materials based on their properties Sort materials into soluble and non-soluble Describe how to recover a substance from a solution Use my knowledge of different substances to decide how they might be separated Use my knowledge of different materials to describe their uses in everyday objects Plan and carry out a fair test to show a reversable change and describe what has happened to the substance Identify the difference between reversible and irreversible changes and	I can: Compare and contrast different materials based on their properties Group and classify materials based on their properties Classify materials into soluble and non-soluble Explain how to recover a substance from a solution Use my knowledge of different substances to decide how they might be separated and explain my reasoning Use my knowledge of different materials to explain their uses in everyday objects Plan and carry out a fair test to show a reversable change and explain what has happened to the substance	I can: Create classification criteria for different everyday materials and then test out my hypothesis Predict which materials are soluble and non-soluble and justify my ideas Explain how to recover a substance from a solution and give a range examples where this is useful Use my knowledge of different substances to predict which ones can be separated and justify my reasons Use my knowledge of different materials to evaluate their uses in everyday objects drawing on a range of different examples Plan and carry out a fair test to show a reversable change and generalise about the key features of a reversible change	Consider alternatives to the usual materials for everyday objects Investigate the sustainability of every day materials Using an everyday object evaluate whether an alternative material might be better, more sustainable, cheaper and justify your views

		EM5.6 Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning, oxidisation, and the action of acid on bicarbonate of soda	give examples from our investigations	Distinguish between reversible and irreversible changes and give examples from our investigations	Reflect on how reversible and irreversible changes are used in our everyday lives	
	Key skills Noticing patterns, grouping and classifying things Carrying out comparative tests	Answer scientific questions using different types of scientific enquiry, including: •observing changes over a period of time, •noticing patterns, grouping and classifying things, •carrying out simple comparative tests Planning different types of scientific enquiries to answer questions, including: •controlling variables where necessary •taking measurements •using a range of scientific equipment with increasing accuracy and precision •recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations	I can: Answer scientific questions Carry out scientific investigations effectively using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately Record data using a range of diagrams and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting, s	I can: Answer scientific questions and explain my reasoning Independently carry out scientific investigations effectively using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately Record data using a range of diagrams, labels, graphs and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research Plan, hypothesise about the likely outcome and carry out scientific investigations effectively using the key skills of observation, testing, considering variables, taking measurements, and use scientific equipment with increasing accuracy and precision Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	Plan and carry out own investigation setting out your hypothesis and the rationale for your investigative approach Provide guidance for others on how to use particular scientific equipment correctly Present your information in new and different ways and evaluate the most appropriate approach

		Reflect on the choice of materials in everyday objects and consider what alternatives might be more environmentally friendly **Evaluate reversable and irreversible changes of state in cooking**	I can: Compare and contrast an everyday object made from different materials and assess which material is best and explain my reasoning (i.e. a ruler, a pencil case, a desk or chair) Review a recipe and identify reversible and irreversible changes in the process	I can: Compare and contrast an everyday object made from different materials and assess which material is best and explain my reasoning (i.e. a ruler, a pencil case, a desk or chair) Review a recipe and identify reversible and irreversible changes in the process	I can: Evaluate an everyday object and consider whether an alternative material might be better, more sustainable, cheaper and justify my views Analyse a number of recipes and generalise about which processes are reversible and which are which are not	Reflect on and generalise about why some objects are made from particular materials even when they may not be the best material in terms of use
Y6						
6a Autumn 1	**Physics** **Key Knowledge** The total amount of energy in the universe is always the same but the energy can be transformed when things change or are made to happen	Light LT6.1 Recognise that light appears to travel in straight lines LT6.2 Use the idea light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye LT6.3 Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes LT6.4 Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes	I can: Describe how light appears to travel in a straight-line and why it refracts using diagrams Describe how the eye works and why we need light to see objects Describe how shadows are formed and how moving the light source changes the size of the shadow	I can: Explain how light appears to travel in a straight-line and why it refracts using diagrams based on my investigations Explain how the eye works and why we need light to see objects Explain how shadows are formed and how moving the light source changes the size of the shadow	I can: Generalise about what happens when light meets glass or water and explain why Explain how our eyes work together to give a 3D image Predict the size of a shadow based on the position of the light source	I can explain how a rainbow is formed I can view an object in water and explain what I see
	Key Skills Reporting and presenting	***Answer scientific questions using different types of scientific enquiry,*** *including:*	Answer scientific questions	Answer scientific questions and explain my reasoning	I can: Formulate scientifically valid questions, explain my	Plan and carry out own investigation setting out your

	findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations	• *observing changes over a period of time,* • *noticing patterns,* • *carrying out simple comparative tests* • *finding things out using secondary sources of information* Planning different types of scientific enquiries to answer questions, including: • controlling variables where necessary • taking measurements • using a range of scientific equipment with increasing accuracy and precision • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations	Carry out scientific investigations effectively using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately Record data using a range of diagrams and labels Report and present findings including: Sequencing, classifying, comparing and contrasting	Independently carry out scientific investigations effectively using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately Record data using a range of diagrams, labels and graphs Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	reasoning and use these to inform my investigations and research Plan, hypothesise about the likely outcome and carry out scientific investigations effectively using the key skills of observation, testing, considering variables, taking measurements, and use scientific equipment with increasing accuracy and precision Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	hypothesis and the rationale for your investigative approach Provide guidance for others on how to use particular scientific equipment correctly Present your information in new and different ways and evaluate the most appropriate approach
		Bending light through refraction and reflection periscopes and kaleidoscopes **Use knowledge of shadows to create a shadow puppet and adjust light source to give different effects**	I can: Describe how a periscope and or a kaleidoscope works I can describe how my design works based on what I know about shadows	I can: Explain how a periscope and or a kaleidoscope works I can explain the reasons for my choice of design based on what I know about shadows	I can: Generalise about what is happening to the light in a periscope and or a kaleidoscope I can generalise about how to create different effects for a shadow play	**Design a nightlight for a young child** **Create a pinhole camera and explain how it works**

6b Autumn 2	Physics **Key Knowledge** The total amount of energy in the universe is always the same but the energy can be transformed when things change or are made to happen	**Electricity** **ELEC6.1 Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit** **ELEC6.2 Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches** **ELEC6.3 Use recognised symbols when representing a simple circuit in a diagram**	I can: Describe how the voltage of the current passing round a circuit effects the volume of a buzzer or brightness of a light Describe how a circuit is made up of key components including an on/off switch and how the sequence and the number of the appliances in a circuit determines the volume/brightness Draw a simple circuit diagram using recognised symbols and describe how it would work	I can: Explain why the voltage of the current passing round a circuit effects the volume of a buzzer or brightness of a light Explain how a circuit is made up of key components including an on/off switch and how the sequence and the number of the appliances in a circuit determines the volume/brightness Draw a simple circuit diagram using recognised symbols and explain how it would work	I can: Explain how the voltage of the current passing round a circuit effects the volume of a buzzer or brightness of a light and predict what would happen if we increased or reduced the voltage Explain the key principles of an electrical circuit and the function of the main components Predict how the sequence and the number of the appliances in a circuit determines the volume/brightness and what happened when we change these Draw a complex circuit diagram using recognised symbols and explain how it would work	I can: Compare the simple circuits we have made with the wiring in a house and explain in what ways they are similar and different
	Key Skills Planning different types of scientific enquiries to answer questions, including: controlling variables where necessary taking measurements using a range of scientific	***Answer scientific questions using different types of scientific enquiry,*** *including:* • *carrying out simple comparative tests* Planning different types of scientific enquiries to answer questions, including: • controlling variables where necessary • taking measurements	I can: Answer scientific questions Carry out scientific investigations effectively using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately	I can: Answer scientific questions and explain my reasoning Independently carry out scientific investigations effectively using the key skills of observation, testing, considering variables, taking measurements, and using scientific equipment appropriately	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research Plan, hypothesise about the likely outcome and carry out scientific investigations effectively using the key skills of observation, testing,	Plan and carry out own investigation setting out your hypothesis and the rationale for your investigative approach Provide guidance for others on how to use particular scientific

	equipment with increasing accuracy and precision recording data and results of increasing complexity	• using a range of scientific equipment with increasing accuracy and precision • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations	Record data using a range of diagrams and labels Report and present findings including: Sequencing, classifying, comparing and contrasting,	Record data using a range of diagrams, labels, graphs and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	considering variables, taking measurements, and use scientific equipment with increasing accuracy and precision Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	equipment correctly Present your information in new and different ways and evaluate the most appropriate approach
		Creating a lighting circuit for a model house **Identifying all the different types of electrical appliances in their home** **Saving electricity**	I can: Draw a lighting circuit for a model house and describe the key features that need to be in place for it to work List all the different appliances in a home and distinguish between those that are essential and those we could live without I can describe how we can save energy by using less electricity	I can: Draw a lighting circuit for a model house and explain the key features that need to be in place for it to work Analyse all the different appliances in a home and distinguish between those that are essential and those we could live without I can analyse how we can save energy by using less electricity	I can: Draw and lighting circuit for a home, generalise about the features that need to be in place and explain what happens when a fuse blows. I can reflect on what we mean by essential and non-essential appliances and explain my reasoning I can explain why we need to save energy and create a poster illustrating how to do this at home	I can design and make a game that uses lights and buzzers
6c Spring	**Biology** **Key Knowledge** The diversity of organisms, living and extinct, is the	**Living things and their habitats** **ALT6.1** Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences,	I can: Describe how and why we classify things from broad groups to increasingly specific groups based on their	I can: Explain how and why we classify things from broad groups to increasingly specific groups based on their observable characteristics	I can: Generalise how and why we classify things from broad groups to increasingly specific groups based on their observable characteristics and	I can identify two animals in the same group that have differences and speculate why these might have

	result of evolution	including plants, animals and microorganisms **ALT6.2** Give reasons for classifying plants and animals based on specific characteristics	observable characteristics Sort creatures into the main groups of vertebrates and describe their characteristics Describe the features of vertebrates and invertebrates and sort the common invertebrates in the UK into the main groups	Sort creatures into the main groups of vertebrates and summarise their characteristics Explain the difference between vertebrates and invertebrates and classify the common invertebrates in the UK into the main groups	explain why this is sometimes difficult Compare and contrast the main groups of vertebrates and explain how their characteristics affect the way they live I can generalise about the difference between vertebrates and invertebrates and create an create a classification chart for the main groups of invertebrates and use this to identify which groups common invertebrates in the UK belong to	occurred i.e. tortoise and snake
	Key Skills Noticing patterns, grouping and classifying things Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations	***Answer scientific questions using different types of scientific enquiry,*** *including:* • *noticing patterns, grouping and classifying things,* • *finding things out using secondary sources of information* • recording information of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations	I can: Answer scientific questions g Carry out research to identify patterns and classify living things *finding things out using secondary sources of information* Record data using a range of diagrams and labels Report and present findings including: Sequencing, classifying, comparing and contrasting	I can: Answer scientific questions and explain my reasoning Independently carry out research to identify patterns and classify living things *finding things out using secondary sources of information* Record data using a range of diagrams, labels, graphs and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting,	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research Carry out scientific research independently *noticing patterns, grouping and classifying things, finding things out using a range of secondary sources of information* Make informed choices on how to record data using a range of diagrams, labels, graphs and classification keys and justify my decisions	Plan and carry out own investigation setting out your hypothesis and the rationale for your investigative approach Provide guidance for others on how to use particular scientific equipment correctly Present your information in new and different ways and evaluate the most appropriate approach

				explain cause and effect and justify my views	Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	
		Research the interdependency of living things and how changes to habitat impact on living things (examples include loss of wetland, loss or grazing land, fires in the rain forest)	I can: Describe the key conditions needed for different groups of vertebrates and some of the threats to their habitat	I can: Explain the key conditions needed for different groups of vertebrates and some of the threats to their habitat	I can: Summarise the environmental needs of each group of vertebrates and evaluate how changes to these environments put them at risk	Produce a poster / flyer about an endangered species highlighting the impact of changes to their habitat
6d Summer 1	**Biology** **Key Knowledge** Organisms require a supply of energy and materials for which they are often dependent on or in competition with other organisms	**Animals, including humans** **AH6.1** Identify and name the main parts of the human circulatory system and explain the functions of the heart, blood vessels and blood **AH6.3** Describe the ways in which nutrients and water are transported within animals, including humans **AH6.2** Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	I can: Describe the main parts of the human circulatory system and the functions of the heart, blood vessels and blood Describe how our digestive system works so we can absorb nutrients and water Describehow diet and exercise help keep us healthy	I can: Explain the main parts of the human circulatory system and the functions of the heart, blood vessels and blood Explain how our digestive system works so we can absorb nutrients and water Explain how diet and exercise help keep us healthy	I can: Create an annotated diagram of the human circulatory system explaining the function of each organ and how they work together to keep us alive Create an overview of how our body absorbs water and nutrients and explain the importance of the different nutrients to staying healthy I can summarise how a balanced diet and regular exercise are important to humans based on my knowledge of the circulatory and digestive systems	Evaluate how the digestive system and the circulatory system work together to keep us healthy Explain what happens in the circulatory system if the heart is not working properly
	Key Skills Finding things out using secondary sources of information Reporting and presenting findings from	***Answer scientific questions using different types of scientific enquiry,*** *including:* • *finding things out using secondary sources of information* Planning different types of scientific enquiries to answer questions, including:	I can: Answer scientific questions Carry out research to identify how the human body works *using*	I can: Answer scientific questions and explain my reasoning Independently carry out research to identify how the human body works *using*	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research	Plan and carry out own research setting out your hypothesis and the rationale for your approach

	enquiries, including conclusions, causal relationships and explanations	• recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations	*secondary sources of information* Record data using a range of diagrams, labels Report and present findings including: Sequencing, classifying, comparing and contrasting,	*secondary sources of information* Record data using a range of diagrams, labels, graphs and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	Carry out scientific research into the human body, independently finding things out using a range of secondary sources of information Make informed choices on how to record data using a range of diagrams, labels, graphs and keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	Present your information in new and different ways and evaluate the most appropriate approach
		Explain the main functions of the human and body and how to keep healthy	I can: Use my knowledge of the circulatory and digestive systems to create a healthy living poster for pupils at Priory School	I can: Apply my knowledge of the circulatory and digestive systems to create a healthy living poster for pupils at Priory School	I can: Apply my knowledge of the circulatory and digestive systems to write a guide for parents on how to support their child's health	I can: Write a persuasive letter to the Headteacher explaining some ways in which the school could support improvements in pupils' health using evidence from my research
6e Summer 2	**Biology** **Key Knowledge** The diversity of organisms, living and extinct, is the result of evolution	**Evolution and Inheritance** **EV6.1** Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents **EV6.2** Recognise that living things have changed over time and that fossils provide information about	I can: Describe how living things produce offspring Describe how the offspring are similar but not identical to their parents Describe how some characteristics are	I can: Explain how living things produce offspring Explain how the offspring are similar but not identical to their parents Explain how some characteristics are inherited and some are due to our environment	I can: Generalise about how we inherit some characteristics from our parent but we are not identical to them I can analyse features which we inherit and those that are caused by our environment	Research how Charles Darwin discovered natural selection

		living things that inhabited the Earth millions of years ago **EV6.3** Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	inherited and some are due to our environment Describe how animals adapt to their environment and change over time	Explain how animals adapt to their environment and change over time	Reflect on how natural selection leads to changes in animal species over time using examples from my research	
	Finding things out using secondary sources of information Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations	***Answer scientific questions using different types of scientific enquiry,*** *including:* • *researching changes over time,* • *noticing patterns, grouping and classifying things,* • *finding things out using secondary sources of information* • recording information of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results in written forms such as displays and other presentations	I can: Answer scientific questions Carry out research to identify how the living things reproduce using secondary sources of information Record data using a range of diagrams, labels Report and present findings including: Sequencing, classifying, comparing and contrasting,	I can: Answer scientific questions and explain my reasoning Independently carry out research to identify how the living things reproduce using secondary sources of information Record data using a range of diagrams, labels graphs and classification keys Report and present findings including: Sequencing, classifying, comparing and contrasting, explain cause and effect and justify my views	I can: Formulate scientifically valid questions, explain my reasoning and use these to inform my investigations and research Carry out scientific research into how the living things reproduce, independently finding things out using a range of secondary sources of information Make informed choices on how to record data using a range of diagrams, labels, graphs and keys and justify my decisions Report and present findings including: Generalising, predicting, hypothesising, theorising, evaluating, reflecting, justifying	Plan and carry out own research setting out your hypothesis and the rationale for your approach Present your information in new and different ways and evaluate the most appropriate approach
		Generalise about how and why species change and adapt over time in response to their environment	I can: Describe why animals need to adapt as their environment changes and what happens when	I can: Explain why animals need to adapt as their environment changes and what happens when they cannot adapt quickly enough	I can: Generalise about why animals need to adapt when their environment changes and relate this to species that are	Create an advertisement to encourage people to protect species that are affected by climate change

		Hypothesise about how and why species became extinct and relate this to endangered species today	they cannot adapt quickly enough		under threat today because of environmental changes	or population and are unable to adapt using persuasive language