



Science Long-term Overview	AUTUMN		SPRING		SUMMER
Nursery	Head, Shoulders, Knees and Toes Children will learn: <ol style="list-style-type: none"> 1. some simple animal names. 2. simple body parts. 3. the purpose of some simple body parts. 		Changing Materials Children will learn: <ol style="list-style-type: none"> 1. some different types of materials. 2. to describe what materials look like and use appropriate vocabulary to describe it. 		Caring for a Plant Children will learn: <ol style="list-style-type: none"> 1. what a plant is 2. how to look after a plant. 3. to plant a seed and observe it's growth.
Reception	Naming Body Parts (Introduce 5 Senses) Animals – Naming Pets Children will learn: <ol style="list-style-type: none"> 1. basic facts about some common animals. 2. the names of some body parts. 3. multiple purposes for simple body parts. 		Freezing & Melting Life cycle of a Plant Animals That Live in Polar Regions Children will learn: <ol style="list-style-type: none"> 1. some plant names. 2. why we care for plants. 3. the basic features of a plant. 4. that some food can come from plants. 		Materials – Floating & Sinking Animals – Sea Creatures Children will learn: <ol style="list-style-type: none"> 1. that materials serve different purposes. 2. different types of materials.
Year 1	Identifying Animals Children will learn: <ol style="list-style-type: none"> 1. to identify, name and describe a variety of common animals kept as pets. 2. to identify a variety of mammals and compare and describe some 	My Body Children will learn: <ol style="list-style-type: none"> 1. to identify and name several body parts and identify their location on their own bodies. They will then label and/or draw diagrams. 2. to consider which parts of their body are used during a variety of 	Seasonal Changes Children will learn: <ol style="list-style-type: none"> 1. to describe the weather they can directly observe and other types of weather they know of. 2. to describe what the weather is normally like during different seasons, and what people might wear in 	Identifying Plants Children will learn: <ol style="list-style-type: none"> 1. about what a plant is and either go plant hunting or plant seeds. 2. a variety of common garden plants, identify some of their features, and consider why they are appealing to people, e.g. easy to grow, or attracts insects. 	Everyday Materials Children will learn: <ol style="list-style-type: none"> 1. what materials are, identify some common materials, and describe some of their uses. 2. some of the materials a variety of objects are made from to show what they have understood, children may write lists, match objects to labels, or sort objects and materials. 3. to use words such as 'soft', 'smooth', 'hard', or 'bendy' to describe and/or sort a variety of materials and objects. 4. why the properties of materials make them suitable for certain uses. They will then select appropriate materials for use in a range of objects.

	<p>of their features.</p> <ol style="list-style-type: none"> 3. to compare the characteristics of a variety of birds and reptiles, then answer questions or describe animals in their own words. 4. to consider similarities and differences between some fish and amphibians. They will also learn about some fish/amphibian life cycles and describe what they have learned in their own words. 5. to describe what a variety of different animals eat, then sort animals using Venn diagrams or tables. 6. to consider the needs of a variety of 	<p>different activities.</p> <ol style="list-style-type: none"> 3. to describe how body parts are used, or how they move. 4. to consider why sight is an important sense, and conduct tasks where they will have to use their own sense of sight. 5. To consider that their whole bodies can sense touch, but that we mostly use our hands to feel things. They will then feel and describe a variety of objects. 6. to think about the different tastes of foods and use a range of vocabulary to describe taste. 7. to sort and describe given images of foods, or conduct a taste investigation. 	<p>different weather conditions.</p> <ol style="list-style-type: none"> 3. to study images, looking for clues as to which season it is including weather conditions and plant growth. 4. to consider ways in which the changing conditions of the seasons affect the lives of animals, focussing on the behaviour of robins during each season. 5. how the length of day and night, and the times at which they occur, change throughout the year. 6. to complete given pictograms using given sets of data to show changes in weather, or frequency of different types of clothes worn, 	<ol style="list-style-type: none"> 3. some wild plants, and begin to consider how their seeds — which they grew from — came to be there. 4. to identify and name trees, then learn some differences between deciduous and evergreen trees. They may either sort trees into groups or go on a tree hunt. 5. the main parts of a variety of plants and describe their functions. Either examine plants and identify features or draw and label plant diagrams 6. ways in which plants change over time. They many study and describe plants grown themselves, or identify ways in which plants around school have changed over time. 	<ol style="list-style-type: none"> 5. methods for testing materials to determine whether or not they are waterproof. They may either test materials or produce a model of a water proof product. 6. to show what they have understood by making model or matching objects to labels and descriptions .
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	<p>animals, and explain how best to care for them.</p> <p>7. to collect, present and interpret data about pets mini beasts</p>	<p>8. to explore ways in which we use our sense of sound. They may then either produce information text to show what they have learned during this, and previous lessons, or conduct a sound investigation.</p>	<p>during each season.</p>		
Year 2	<p>Growth and Survival</p> <p>Children will learn:</p> <ol style="list-style-type: none"> 1. why animals have babies, then match parent animals to their offspring. 2. about how animals who give birth to live offspring, and those who lay eggs, reproduce by matching and sorting animals according to various criteria. 3. about ways in which the body grows over 	<p>Living in Habitats</p> <p>Children will learn:</p> <ol style="list-style-type: none"> 1. some life processes which indicate that animals and plants are alive. By identifying and sort objects and organisms into group: living and non-living things. 2. to sort objects and organisms into group: living and non-living things. 3. about what a habitat is, and what animals and plants need 	<p>Growing Plants</p> <p>Children will learn:</p> <ol style="list-style-type: none"> 1. how best to plant and grow different seed types. 2. about bulbs: their large food source, and the times of year at which they grow. 3. about fruits: the seeds they contain and some ways in which they are dispersed. 4. about germination and the various conditions seeds need to germinate. 	<p>Super Scientists</p> <p>Children will learn:</p> <ol style="list-style-type: none"> 1. about some of the work of Isaac Newton. 2. ways in which the speed of falling objects can be affected. 3. about Isaac Newton's work and discoveries regarding light. 4. about the ways in which light passes through transparent objects. 5. about Maggie Aderin-Pocock and her work. 6. about the wind and its effects. 	<p>Exploring Everyday Materials</p> <p>Children will learn:</p> <ol style="list-style-type: none"> 1. about some common materials and similar materials that could be grouped in the same ways. 2. about some natural and man-made materials. 3. That materials can be manipulated by squashing, bending, twisting and stretching. 4. to predict how other materials might behave. 5. about a variety of objects made using metal or plastic and consider why each material has been used. 6. about how trees are turned into materials we use. 7. why different objects are made using metal or plastic, then describe the uses of objects and the materials they are made from. 8. about some man-made materials, their uses and their inventors.

	<p>time, then either describe some changes in their own words, or conduct a height investigation.</p> <p>4. about the basic needs of animals, such as eating, drinking and breathing by considering how these needs vary between species, then explain the needs of various animals in their own words.</p> <p>5. how these needs vary between species.</p> <p>6. about ways in which habitats provide some things that animals need, and how animals are best suited to specific environments.</p> <p>7. about foods: which are</p>	<p>to survive in them.</p> <p>4. features of seaside habitats and discuss which plants and animals might live in it, and where. They may then either identify and name a variety of organisms, or sort organisms into those found in seaside habitats, and those found in other habitats.</p> <p>5. characteristics of animals which give clues about the habitats they live in. By describe what they provide for the organisms that live in them, or how organisms are adapted to suit their habitat.</p> <p>6. about micro-habitats and the organisms that live in them.</p> <p>7. how organisms in a habitat are</p>	<p>5. how plants change over time.</p>	<p>7. about some of the work of Alexander Graham Bell.</p> <p>8. ways in which sound travels through different materials.</p> <p>9. about some significant historical discoveries about the body.</p> <p>10. about the work of significant scientists who studied how diseases affect the body.</p> <p>11. about some of the work of Thomas Edison to do with electricity and then make, test, change or improve their own electrical circuits.</p>	
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	<p>more/less healthy.</p> <p>8. the importance of exercise, and how different exercises, sports and activities affect different parts of the body. By either undertake a sorting activity, or plan a course of exercises.</p>	<p>dependent upon one another, and that these dependencies can be shown as food chains. Try to make a food chain from a given set of organisms.</p>			
Year 3	<p>How Plants Grow Children will learn:</p> <ol style="list-style-type: none"> 1. the main features of flowering plants. 2. about how roots grow, and what their functions are. 3. to plan an experiment where they will grow beans, measuring root growth. 4. how water, absorbed by the roots, is distributed around the plant via the stem. 	<p>Health and Movement Children will learn:</p> <ol style="list-style-type: none"> 1. about the need for a varied diet in order to get the right nutrition. 2. to sort food into groups, giving reasons or visit a supermarket to learn more about different food groups 3. about food pyramids and examples of healthy meals (and planning their own). 4. to consider ways in which people with dietary 	<p>Forces and Magnetism Children will learn:</p> <ol style="list-style-type: none"> 1. to identify forces as a push or a pull that will create or stop a movement. 2. to identify forces in different situations noting that many need contact in order for the force to be applied. 3. to identify forces using an arrow or to discuss how forces can create movement in different situations. 4. how the texture of a surface 	<p>Light and Shadow Children will learn:</p> <ol style="list-style-type: none"> 1. that darkness is the absence of light and that without light we cannot see. 2. to identify, describe and sort a variety of light sources. 3. about the benefits and dangers of being in the sun for too long. 4. how to protect skin and eyes from damaging UV light and conduct an experiment around the SPF or amount of sun cream. 5. about some differences between night and day, including 	<p>Rocks, Fossils and Soils Children will learn:</p> <ol style="list-style-type: none"> 1. where rocks come from. 2. the differences between naturally occurring rocks and man-made objects which are similar to rocks. 3. to identify, describe and/or sort rocks and man-made objects. 4. ways in which rocks can be sorted according to different criteria. Sort given rock samples, or study and sort pictures of rocks according to various criteria. 5. what erosion is. 6. how different rocks erode more quickly than others and why. 7. what 'permeable' means and to conduct practical erosion/permeability investigations. 8. about a rock's uses and to research the characteristics of rocks and their uses. 9. about soil: how it is formed and its uses, studying different types of soil. They will study and describe a variety of soil samples.

	<p>5. to conduct experiments where the capillary action in plant stems can be observed.</p> <p>6. how plants make their own food using air and sunlight.</p> <p>7. to describe parts of this process in their own words, or plan and conduct an experiment to show the importance of light for plant growth</p> <p>8. to identify the parts of a flower and how pollination occurs.</p> <p>9. to identify and label the parts of a flower by drawing diagrams or dissecting flowers</p> <p>10. how the ovaries of flowering plants grow to form seeds and</p>	<p>restrictions can have a balanced diet.</p> <p>5. about what some animals eat.</p> <p>6. to use technical vocabulary to describe different types of animals and present their findings.</p> <p>7. about what questions could be asked to learn more about what pets eat. Either plan and conduct an investigation, or study a given set of results. In either case, children will present data using pictograms or bar graphs</p> <p>8. about bones in humans and other animals.</p> <p>9. to label skeleton diagrams, or identify similarities between the skeletons of a</p>	<p>affects how things move across them.</p> <p>5. how to use and read a force meter and conduct an experiment to measure the force it takes to move different objects.</p> <p>6. about how magnets can exert a force on certain objects without touching them.</p> <p>7. to explore the different forces a magnetic field can exert depending on which poles are facing each other. Show their understanding of this by using the correct scientific vocabulary</p> <p>8. what other materials could be attracted to magnets.</p> <p>9. to test a variety of materials, and to notice what the magnetic</p>	<p>starting to understand how the Sun rises and sets.</p> <p>6. how objects could be tested to determine whether or not they will make a shadow.</p> <p>7. to test their ideas and explore the way shadows are created or go on a shadow hunt around the school.</p> <p>8. how shadows are created.</p> <p>9. to conduct practical shadow investigations where they will predict, test and draw/ write to show their findings</p> <p>10. what will happen to a shadow cast by a stick in sunlight throughout the day.</p> <p>11. to conduct a shadow investigation and present their findings using bar graphs. tThat some surfaces reflect</p>	<p>10. about how fossils are formed and describe this process in their own words or conduct a practical, 'fossil-making' activity</p> <p>11. about fossilised remains and what can be learned about the animal from this. They will conduct research to find out about given images of fossils, or do a practical, 'fossil excavation' activity.</p>
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	<p>how they may be dispersed in a variety of ways.</p> <p>11. to study in-depth some ways in which seeds are dispersed, or identify seeds found outside</p> <p>12. about the structure of seeds and how plants grow from them.</p>	<p>variety of animals</p> <p>10. about the functions of the skeleton in vertebrates.</p> <p>11. how some invertebrates move and are protected in different ways.</p> <p>12. to research and describe various invertebrates</p> <p>13. about how the body moves, focussing on the ways muscles work.</p> <p>14. to study a variety of sources to find out more about muscles, noting their findings</p>	<p>materials have in common</p> <p>10. how magnets are used in everyday places as well as some more specific ways.</p> <p>11. about the strength of magnets and how this might affect the use of that magnet.</p> <p>12. to conduct an investigation into the strength of magnets or, alternatively, they can make their own compasses using magnets.</p>	<p>more light than others.</p> <p>12. to identify and describe a range of reflective surfaces, or conduct a reflection investigation using mirrors.</p> <p>13. to explore how we use different reflective surfaces in our lives.</p> <p>14. about how they can help us keep safe as well as be used for decorations.</p>		
Year 4	<p>Living In Environments</p> <p>Children will learn:</p> <ol style="list-style-type: none"> about habitats and why their conditions are important for the animals living in them. to organise animals into groups according to 	<p>Eating & Digestion</p> <p>Children will learn:</p> <ol style="list-style-type: none"> the similarities and differences between the diets of different organisms. the vocabulary herbivore, carnivore, and omnivore. about food chains, then 	<p>Circuits and Conductors</p> <p>Children will learn:</p> <ol style="list-style-type: none"> what electricity is and how we use it in our day-to-day lives. about batteries and plugs. how we can all stay safe when using electrical devices. 	<p>Changing Sound</p> <p>Children will learn:</p> <ol style="list-style-type: none"> about how sounds are created. the way sounds are produced by a variety of instruments or resonant objects. about how sounds travel through different materials. 	<p>States of Matter</p> <p>Children will learn:</p> <ol style="list-style-type: none"> what solids and liquids are. to sort materials into groups 	<p>What do Scientists do?</p> <p>Children will learn:</p> <ol style="list-style-type: none"> what a scientist is and does. about the three different branches of science and what each branch involves. about the process of the scientific method for conducting investigations and experiments. about the job of a forensic scientist by looking into the

	<p>some of their characteristics.</p> <ol style="list-style-type: none"> 3. to sort animals according some of their own criteria. 4. to use classification keys to identify and sort animals into groups. 5. to examine some animals and group them based on observations. 6. to study a range of sources to find out about a particular group of animals. 7. to identify a range of animals from different environments using classification keys. 8. to use Venn Diagrams and Carroll diagrams to sort plants according to some of their characteristics. 9. ways in which animals living in environments 	<p>organise a variety of organisms using food chains.</p> <ol style="list-style-type: none"> 4. about different types of human teeth and their functions. 5. to sort, draw, label or describe teeth. 6. about what happens to teeth during the lifetime of humans and ways in which we can ensure our teeth stay healthy. 7. about the digestive system: its organs and their functions. 8. use a variety of sources to learn more and answer questions. 9. to draw and label diagrams to show what they have learned, or conduct a digestion experiment. 	<ol style="list-style-type: none"> 4. to spot potential hazards and discuss how they can be made safe. 5. to construct simple circuits with single or multiple components observing what they see as they do so. 6. about what a complete circuit is. 7. the names of different components of circuits. 8. to experiment with, and sort materials based on if they are electrical conductors or insulators, making predictions about the materials. 9. about short circuits. 10. how electricity can flow through or not flow through, different materials 	<ol style="list-style-type: none"> 4. to give reasons why they think some materials will transmit sound better/worse than others, then investigate. 5. ways in which sounds change as you move further away from its source. 6. about why it is sometimes necessary to prevent sounds from travelling (soundproofing) and effectiveness of a range of materials. 7. what pitch and volume are. 8. to investigate ways in which they may be altered by a variety of instruments or resonant objects 9. how the pitch of notes produced by stringed instruments is altered. 10. to investigate further by experimenting with instruments or by 	<p>based on their state.</p> <ol style="list-style-type: none"> 3. to discuss the different items that may not seem to fit and look closely at how they're made up including pourable solids such as rice or sand. 4. that gases have mass. 5. the different ways that gases are used in everyday 	<p>different things they analyse and research.</p> <ol style="list-style-type: none"> 5. about the careers of microbiologists and pharmacologists who develop new medicines. 6. the scientific skill of observation based around birds as a zoologist's would do. 7. about the role of botanists and how they have helped people from farmers to astronauts with their study and research. 8. about the scientific method by planning an investigation based around the studies of sports scientists and physiologists.
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	<p>are affected by human behaviour and ways in which we can help protect and sustain habitats.</p>		<p>(electrical conductors or insulators). 11. to create an electrical circuit which will be used to power a simple device.</p>	<p>making instruments. 11. how sounds can be made by air vibrating.</p>	<p>y life and how their different properties make them useful for different purposes. 6. about the particles in solids, liquids and gases and how they behave in these states. 7. what happens when solids and liquids freeze</p>	
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					<p>and melt.</p> <p>8. the melting points of different materials.</p> <p>9. about the process of a liquid turning into a gas (evaporation).</p> <p>10. the differences between evaporating and boiling as well as highlighting the boiling point of water.</p> <p>11. to use the</p>	
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					<p>internet to find the melting points of materials such as gallium, olive oil and gold.</p> <p>12. about condensation and what causes water to condense.</p> <p>13. to recreate a situation where they can see water condensing, including its use in a solar</p>	
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					<p>still to remove the salt from sea water.</p> <p>14. the four simplified steps of the water cycle and how these processes play a part.</p>	
Year 5	<p>Life Cycles Children will learn:</p> <ol style="list-style-type: none"> 1. about how flowering plants reproduce sexually. They will label diagrams of flowering plants. 2. about some ways in which nonflowering plants reproduce asexually. 	<p>Changes and Reproduction Children will learn:</p> <ol style="list-style-type: none"> 1. about the main stages in the life cycle of humans. 2. about the factors which may affect the rate of growth in humans. 3. about sexual reproduction, fertilisation and pregnancy for humans. 	<p>Earth and Space Children will learn:</p> <ol style="list-style-type: none"> 1. about the celestial bodies of the Sun, Moon and Earth and how they are related to one another. 2. that each of them are a roughly spherical shape. 3. the meaning of the word 'orbit'. 4. that the rotation of 	<p>Forces In Action Children will learn:</p> <ol style="list-style-type: none"> 1. what weight is. 2. how the impact caused by falling objects can vary depending on their size, shape, mass, and the height they fall from. 3. what friction is and some ways in which it can be measured. Identify instances of high and low friction. 4. about ways in which air resistance 	<p>Properties and Changes of Materials Children will learn:</p> <ol style="list-style-type: none"> 1. what happens to substances when they are mixed with water. Conduct fair tests to find out which substances are soluble/insoluble. 2. ways in which the original materials in some mixtures and solutions may be recovered by the process of evaporation or by sieving or filtering. 3. about soluble and insoluble substances to explain how mixtures could be separated. 4. about solutions which are the product of irreversible reactions between the substances that were dissolved. 5. about reversible and irreversible changes caused by heating or cooling materials. 	

	<p>Grow plants from cuttings.</p> <p>3. about sexual reproduction in animals, including some ways in which some reptiles and fish reproduce. Sort and classify animals.</p> <p>4. about the life cycles of animals living in a variety of environments. Compare life cycles of two animals living in different environments.</p> <p>5. about gestation periods and growth.</p> <p>6. about the work of naturalists and animal behaviourists. Research and write in depth about a well-known naturalist.</p>	<p>4. about changes during infancy and childhood.</p> <p>5. about the needs of children and how these change over time as they develop.</p> <p>6. about the roles of some hormones in the body and how they affect changes in boys and girls at the start of puberty.</p> <p>7. about later changes during puberty and adolescence, including sperm production and menstruation.</p> <p>8. ways in which children can stay fit and healthy during puberty.</p> <p>9. about some changes in the body that occur during</p>	<p>Earth on its axis is what creates day and night.</p> <p>5. about time zones and how, and why, locations have different time zones.</p> <p>6. about how the seasons are created because of the tilt of Earth's axis.</p> <p>7. how Earth is split into its Northern and Southern Hemispheres and how the seasons are different for the two halves of the planet.</p> <p>8. about the lunar month and the eight phases of the Moon that can be seen as the Moon orbits Earth.</p> <p>9. to identify the shapes of each phase and the names of these shapes, including if the</p>	<p>affects moving objects. Children will conduct investigations to determine how air resistance affects falling objects.</p> <p>5. about water resistance and how it affects objects moving through water. Conduct water resistance investigations.</p> <p>6. how simple machines can make it easier to move objects.</p> <p>7. about pulleys or levers and how these work.</p> <p>8. about how gears work together in transmissions.</p>	<p>6. Predict and sort materials according to what may happen when they are heated or cooled.</p> <p>7. what happens when materials are burned, including what new materials are produced.</p> <p>8. Identify and discuss several different properties of a range of materials (conductive, magnetic, soluble, flexible, transparent etc.).</p> <p>9. Sort and group given sets of materials.</p> <p>10. why materials with these properties are used for certain purposes.</p>
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		adulthood and old age.	<p>phase is waxing or waning.</p> <p>10. about and discuss how the ideas about the solar system developed and changed over the years until we arrived at the model we have today.</p> <p>11. to compare the similarities and differences between a geocentric and heliocentric model of the solar system.</p> <p>12. about the objects in our solar, including natural satellites, comets, asteroids (and the asteroid belt), planets and dwarf planets.</p>			
Year 6	<p>Classifying Organisms</p> <p>Children will learn:</p> <p>1. about some of the broad groups used to classify animals.</p>	<p>Healthy Bodies</p> <p>Children will learn:</p> <p>1. about historical health problems caused by poor diet.</p>	<p>Changing Circuits</p> <p>Children will learn:</p> <p>1. what static electricity is and how it can affect other things by investigating</p>	<p>Seeing Light</p> <p>Children will learn:</p> <p>1. about how shadows are formed and the objects which create them by</p>	<p>Evolution and Inheritance</p> <p>Children will learn:</p> <p>1. about traits</p>	<p>Great British Scientists</p> <p>Children will learn:</p> <p>1. about Sir Isaac Newton and the three laws of motion which he wrote to describe how forces interact with various objects by discussing</p>

	<ol style="list-style-type: none"> 2. to identify, sort or describe organisms within those groups according to some of their characteristics. 3. ways in which animals which belong to the same broad group can be distinguished and further classified. 4. some ways in which plants are classified by botanists. 5. to take photos, collect samples, or research, then classify plants. 6. about the development of Linnaeus' classification system. 7. use the Linnaeus system to help them identify, classify, and answer questions about a number of 	<ol style="list-style-type: none"> 2. how the work of scientists such as James Lind helped develop a better understanding of how diet affects health. 3. how medical tests and trials might be conducted, or improved. 4. about food groups: what they provide our bodies with, and what quantities of each we need in a balanced diet by studying food labelling. 5. about the functions of the heart, lungs and circulatory system. 6. to perform a heart dissection to study its internal structure. 7. about what happens to the heart when we exercise by conducting practical 	<p>static electricity in different ways.</p> <ol style="list-style-type: none"> 2. about parallel circuits. 3. to build and explore circuits and their components, discussing why some circuits will work and others will not. 4. about circuit symbols and which circuit components they correspond to. 5. to build circuits from diagrams and draw their own. 6. how the number of components and batteries affects the voltage in a circuit and so affects how brightly a bulb will shine. 7. to use their knowledge of circuit symbols to draw and discuss different circuits and suggest which may potentially 	<p>focus specifically on the shapes of the shadows.</p> <ol style="list-style-type: none"> 2. why shadows are the shape of the object which creates them. 3. how we can change and manipulate shadows' shape, length, intensity and in particular, size by conducting an experiment, identifying the key variables, observing the results and drawing conclusions from their results. 4. about the anatomy of our eyes and how the different parts allow us to see. 5. that all objects reflect and absorb different amounts of light. 6. that it is these reflections that allow us to see objects by completing diagrams of how we can see different objects and writing 	<p>that are passed from one generation to the next.</p> <ol style="list-style-type: none"> 2. ways in which some inherited characteristics may vary. 3. ways in which families or groups of people have some similar or shared characteristics. 4. about how random mutations may or may not be 	<p>different examples of each law using models, diagrams and/or demonstrations to aid them in presenting and explaining each law.</p> <ol style="list-style-type: none"> 2. about Newton's study on light and colour. 3. how prisms and water can split light into colours and think about where they have seen this happen. 4. to investigate the mixing of coloured light using coloured filters and how this affects the colours we see. 5. about the studies of Stephen Hawking and his work on black holes. 6. about the gravitational pull of the black holes and use this concept to learn about weight, gravity and mass. 7. to use force meters to explore the relationship between weight and mass on Earth or alternatively build and calibrate their own force meter to use. 8. about the works of Anning, Wallace and Darwin on evolution and natural inheritance by thinking carefully about how the different scientists contributed to scientific discovery in this area. 9. about the process of natural selection and how this has led
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	<p>different organisms.</p> <p>8. about some ways in which microorganisms are classified, and what they need to survive.</p> <p>9. to conduct an experiment to determine what food a microorganism prefers.</p> <p>10. to identify and classify organisms in a local environment or one in another country.</p>	<p>investigations where heart rate is measured.</p> <p>8. about how muscles work and how they work in groups to move the skeleton</p> <p>9. how blood flow increases to different muscle groups during different types of exercise.</p> <p>10. about what drugs are and how some are helpful and some are harmful.</p> <p>11. ways in which drugs have side effects.</p> <p>12. to present their ideas about the functions of the human body in a variety of ways.</p>	<p>overload the components, breaking them.</p> <p>8. how different wires can affect the brightness of a bulb by planning and conducting an investigation.</p> <p>9. to improve an existing investigation.</p> <p>10. to discuss anomalous results in experiments and how to spot them.</p>	<p>explanations of the process.</p> <p>7. about the law of reflection and to use their knowledge and understanding of identifying and measuring angles to predict reflected light rays.</p> <p>8. about the angle of incidence and reflection and use these to complete a light maze.</p> <p>9. about how refraction can bend and change the direction of light rays.</p> <p>10. to differentiate between whether or not an object will reflect or refract light.</p> <p>11. how white light can be split into the seven colours of the rainbow.</p> <p>12. about Isaac Newton's experiments with prisms and discuss how we see colours.</p>	<p>passed from one generation to the next, and how this process results in variation and consider whether certain variations are advantageous, giving reasons why.</p> <p>5. about how, if traits are advantageous to a species, they may be passed</p>	<p>to changes and variations in different species because of advantageous traits.</p> <p>10. about antibiotics and the scientist who discovered them: Alexander Fleming.</p> <p>11. what antibiotics do and discuss why this was such an important discovery.</p> <p>12. to plan an experiment to test his theory that mould can kill bacteria.</p> <p>13. how gears and wheel sizes affect speed and distance travelled.</p> <p>14. about the design of a penny-farthing and the inventor of the Rover safety bicycle: John Kemp Starley.</p> <p>15. what changes the size of gears can make and how they work together in a chain drive to make a bike move.</p> <p>16. to calculate the gear ratios for different gear chains.</p>
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					<p>on and that evolution can occur by undertaking activities where they will identify advantageous traits of species, learn more about evolutionary scientists, or sequence description of evolutionary processes.</p> <p>6. about the contributions of ancient</p>	
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					<p>Greek scientists to our understanding of evolution.</p> <p>7. in greater depth the work of Carl Linnaeus and, particularly, that of Charles Darwin.</p> <p>8. about mutations and how external factors can affect the evolution of a species.</p> <p>9. about human adaptations</p>	
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					<p>which allow us to thrive.</p> <p>10. about some impacts of human behavior on other species.</p> <p>11. to discuss some beliefs and misconceptions about evolution.</p>	
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