Science Curriculum – Year 5 and 6 – Cycle B

Non- Negotiables – Working Scientifically

W1: Plan enquiries, including recognising and controlling variables where necessary. W2: Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work. W3: Take measurements, using a range of scientific equipment, with increasing accuracy and precision. W4: Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. W5: Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. W6: Present findings in written form, displays and other presentations. W7: Use test results to make predictions to set up further comparative and fair tests. W8: Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.

Investigation, enquiry, what to change, what we used, what we did, what we found out Investigation, enquiry, prediction, variable, dependent variable, independent variable, constant, patterns, equipment, apparatus, method, results, conclusion Investigation, enquiry, prediction, variable, dependent variable, independent variable, constant, patterns, equipment, apparatus, method, results, conclusion

	Autumn		Spring		Summer	
Topic	**What made Anne Boleyn lose her head?**	**How did WWII change people's lives?**	**Where does all the water go?**	**What makes bridges so strong?**	**What would you need on a mission to mars?**	**Time Traveller Life cycles and Sex education**
	Investigate Living Things B9: Describe how living things are classified into broad groups according to common observable characteristics. **Understand Evolution and Inheritance** B10: Give reasons for classifying plants and animals based on specific characteristics. B13: Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	**Understanding Plants - Revisiting previous learning** B1: Relate knowledge of plants to studies of evolution and inheritance. B2: Relate knowledge of plants to studies of all living things. B13: Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	**Water Cycle** Revising states of matter from Year 3/4 C3: Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. B13: Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	**Properties of materials and changes in materials** C1: 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. C2: Understand how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. C3: Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. C4: Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. C5: Demonstrate that dissolving, mixing and changes of state are reversible changes. C6: 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.	**Understand the Earth's Movement in Space** P17: Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. P18: Describe the movement of the Moon relative to the Earth. P19: Describe the Sun, Earth and Moon as approximately spherical bodies. P20: Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	**Understand Animals and Humans** B3: Describe the changes as humans develop to old age. **Understand Evolution and Inheritance** B10: Give reasons for classifying plants and animals based on specific characteristics. B11: Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. B12: Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. B13: Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Resources	Clipboards, Magnifying glasses, digital Cameras, Books, internet, posters,	Access to internet, concept cartoons, Access to the internet, flowers (one per child and not a composite like a daisy or with coloured sepals like a tulip), magnifying glasses, collection of seeds and seed pods, plant identification books, magnifying glass, access to the internet, cooling fan/hairdryer, measuring sticks/tapes , cress seeds, empty drinks bottle lids, a heater, a fridge, sugar paper to create covers for the pots to be in the dark, kitchen roll, cotton wool, thermometers, Objects made from plants (see session resource for suggestions), access to the internet	Two containers, one containing liquid, the other 'empty'. A solid. Magnifying glasses. Use of hall. Water in transparent container, e.g. film canister, fruit & ice cube trays, thermometers, IT sensor connected to laptop, water, beaker, ice cube trays, food colouring (two primary colours), Dishes or trays of water, ruler, timer/clock, fan, radiator, windowsill, squares of different fabrics, perfume or aftershave, glass kept in freezer, pot plant, small plastic bag, elastic band. Information books about plants and animals living in arid conditions.	Beakers, thermometers, stopwatch, water (warm), jelly cubes, knives, spoons, water, filter paper, different sizes of sieve, teaspoons, pepper, rice, glitter, marbles, sand, salt, sugar, paperclips, Diet Coke, Mentos, Film canister, water, effervescent tablets, Candle, glasses, safety matches, stopwatch, heat safety mats, Batteries, bulbs and wires; magnets; torches; weights; water and a variety of materials to be tested according to their properties	• Split pins, skewers, polystyrene balls, oratories, inflatable planets for solar system, posters, access to internet	Life cycle diagrams, access to internet,
Vocabulary	Linneaus, grouping, classification, botanist, bird, reptile, amphibian, mammal, fish,	*growth - light, air, water and temperature, carbon dioxide, photosynthesis, food (sugar). Excretion, waste products, sensitivity, gravity, roots, movement, respiration,* pollination, seed formation, seed dispersal and germination.	States of matter, solid, liquid, gas, evaporation, condensation, water cycle, water H2o,	Hardness, solubility, mixing, dissolving, melting, transparency, conductivity, magnetic, filter, filtration, evaporation, condensation, reacting / reactants transparency, dissolve, solution, solute, substance, solid, liquid, gas, mixture, separate , filter, sieve, reversible, change of state, non-reversible, burning and rusting.	Earth, sea, sun, moon, axis, planets, solar system, star, constellation, phases of the moon, waxing, waning, gibbous moon, full moon	Foetus, embryo, womb, gestation, baby, toddler, teenager, puberty, adolescent, adult, elderly, development, growth

Lesson 1	**Year 5/6:** To recap ways of grouping organisms according to their characteristics. **Activities:** Children will learn about some of the broad groups used to classify animals, then identify, sort or describe organisms within those groups according to some of their characteristics. **Outcomes:** **Year 5/6:** Children know that organisms can be grouped according to their characteristics • Children describe the characteristics of different classifications of animals • Children match animals to their group according to their characteristics	**Year 5:** To revise the parts of plants and their function **Year 6:** To revise the parts of plants, their function and the conditions affecting plant growth **Activities: Recap previous learning – what do pupils recall/know about plants?** *Create a concept maps to show understanding – use notes and diagrams. What parts do plants have? What is the function of each part? What conditions do plants and seeds need to grow? What parts do flowers have? What is the function of each part? How do plants reproduce?* **Outcomes:** **Year 5:** **Year 6:**1. Name the parts of a plant and describe their function. 2. Discuss the factors that affect plant growth.	**Year 5:** To recognise the differences between solids, liquids & gases **Year 6:** To recognise the differences between solids, liquids & gases, in terms of ease of flow and maintenance of shape & volume. **Activities:** Revisit learning – states of matter. Comparing the properties of the three states of matter – solid, liquid & gas. Water is used as an example of a material that can exist in all three states. Use drama to model this. **Outcomes:** **Year 5:** To understand that it is important to test ideas using evidence from observation & measurement. To explain the differences between solids, liquids and gases. To understand that water can exist as a solid, a liquid and a gas. **Year 6:** To understand that it is important to test ideas using evidence from observation & measurement. To explain the differences between solids, liquids and gases, in terms of ease of flow and maintenance of shape & volume. To understand that water can exist as a solid, a liquid and a gas.	**Year 5/6:** To know that some materials will dissolve in liquid to form a solution **Activities:** Children will explore what happens to substances when they are mixed with water. In their independent activities, they will conduct a fair test to find out which substances are soluble, and which are insoluble. In the FSD? activity, children will explore what factors other than temperature can help jelly cubes to dissolve more quickly **Outcomes:** **Year 5:** Children understand the terms 'dissolve', 'soluble', 'insoluble' and 'solution' • Children make and explain their predictions about soluble and insoluble materials • Children conduct a fair test involving soluble and insoluble materials **Year 6:** Children understand the terms 'dissolve', 'soluble', 'insoluble' and 'solution' • Children make and explain their predictions about soluble and insoluble materials • Children conduct a fair test, involving soluble and insoluble materials, explaining clearly how it was a fair test	**Year 5/6:** To describe the movements of the Sun, Earth and Moon. **Activities:** Children will learn about the celestial bodies of the Sun, Moon and Earth and how they are related to one another. They will learn that each of them are a roughly spherical shape and investigate and define the word 'orbit'. They will use these scientific words in a brief description of the Sun, Earth and Moon's movements around each other. **Outcomes:** **Year 5/6:** • Children describe the Sun, Earth and Moon's shape as roughly spherical • Children are able to clearly define the word orbit • Children describe the Sun, Earth and Moon's movements in relation to one another	**Year 5/ 6:** To recognise the stages of growth and development in humans. **Activities:** Children will learn about, then order, the main stages in the life cycle of humans. They will then consider and describe factors which may affect the rate of growth in humans. **Outcomes:** **Year 5/6:** Children name the main stages in the life cycle of humans • Children correctly order the main stages • Children broadly define the age ranges for each of the main stages • Children explain some of the physical changes that occur at different stages in the life cycle of humans
Lesson 2	**Year 5/6:** To explore ways of distinguishing between organisms that have similar characteristics. **Activities:** Children will consider ways in which animals which belong to the same broad group can be distinguished and further classified. **Outcomes:** **Year 5/6:** • Children classify organisms according to broad characteristics • Children find ways to distinguish between organisms that are similar • Children use appropriate scientific vocabulary to describe organisms and their features	**Year 5/6:** To understand that plants share the characteristics of living things, including reproduction **Activities:** Recap the processes of living things – MRS GREN. Which relate to plants? Provide children with a flower and a magnifying glass and encourage them to take a really close look at it. What do they notice? Can they name or describe any of the parts? Dissect, draw and label parts. Sequence stages of pollination/reproduction in plants. **Outcomes:** **Year 5:** Children can sequence the stages of a plants reproduction cycle. Children understand that plants share the seven characteristics of living things. Children understand that life processes common to humans and plants include nutrition, movement, growth and reproduction. **Year 6:** Children can sequence the stages of a plants reproduction cycle. Children understand that plants share the seven characteristics of living things. Children understand that life processes common to humans and plants include nutrition, movement, growth and reproduction. Children understand and use vocabulary of pollination, seed formation, seed dispersal and germination.	**Year 5/6:** To use a thermometer to measure temperature. **Activities:** Freezing and boiling. Practise using thermometers to measure temperature accurately. They find the freezing & boiling points of water & discuss what happens if you add salt to the liquid. Use coloured ice cubes to investigate properties of solids & liquids. **Outcomes:** **Year 5/6:** To understand that all liquids have a boiling and freezing point. To describe changes that occur when water is heated or cooled. To understand that temperature is a measure of how hot or cold things are. To find out about reversible changes, including boiling and melting.	**Year 5:** To use knowledge of solids, liquids and gases **Year 6:** To use knowledge of solids, liquids and gases to decide how mixtures and solutions might be separated **Activities:** Children will explore ways in which the original materials in some mixtures and solutions may be recovered, by the process of evaporation, or by sieving or filtering. In their independent activities they will use their knowledge and understanding of soluble and insoluble substances to explain how mixtures could be separated. **Outcomes:** **Year 5:** • Children know what the terms soluble and insoluble mean • Children know that evaporation can be used to separate soluble materials from water • Children know that filtering can be used to separate insoluble materials from water **Year 6:** Children know what the terms soluble and insoluble mean • Children know that evaporation can be used to separate soluble materials from water • Children know that filtering can be used to separate insoluble materials from water	**Year 5/6:** To explore how the rotation of Earth creates day and night. **Activities:** Children will learn that the rotation of Earth on its axis is what creates day and night. They will conduct an investigation using sundials and make observations on what they record throughout the experiment. Alternatively, they will explore time zones using the internet and how, and why, locations have different time zones. **Outcomes:** **Year 5/6:** • Children explain how the rotation of Earth on its axis creates day and night • Children explain the apparent movement of the sun across the sky • Children identify how long it takes Earth to make a full rotation	**Year 5:** To know the stages in the gestation period of humans **Year 6:** To know the stages in the gestation period of humans and compare them to other animals. **Activities:** Children will learn about sexual reproduction, fertilisation and pregnancy for humans. They may then compare the gestation periods of humans with other animals. **Outcomes:** **Year 5:** • Children describe the main stages of gestation in humans • Children explain how embryos and foetuses grow and develop in the womb • **Year 6:** Children describe the main stages of gestation in humans • Children explain how embryos and foetuses grow and develop in the womb • Children define and use key vocabulary to describe gestation in humans
Lesson 3	**Year 5/6:** To be able to classify plants according to their characteristics. **Activities:** Children will learn some ways in which plants are classified by botanists, then take photos, collect samples, or research, then classify plants. **Outcomes:** **Year 5/6:** • Children know that plants can be sorted into groups according to their characteristics • Children explain the difference between vascular and non-vascular plants • Children explain	**Year 5:** To understand that plants disperse seeds in different ways **Year 6:** To understand that plants disperse seeds in different ways and that some may grow to become adult plants **Activities:** Recap pollination process and insect's importance in this. Danger to Bees – leads to lack of honey and fruit crops. Discuss air pollination. Collect seeds or view samples and use reference materials to identify the seeds/fruits/seedpods. Children suggest ways in which they are dispersed and give reasons for their opinions.	**Year 5/6:** To understand evaporation and condensation using water as the example. **Activities:** Look at evaporation and condensation of water as reversible changes. Discuss everyday examples & uses of evaporation & condensation. Plan & carry out an investigation into the factors that speed up evaporation. **Outcomes:** **Year 5:** Children understand that all liquids can evaporate if they are heated to a high enough temperature. Children can explain condensation and evaporation, using everyday examples.	**Year 5:** To explain that some changes form new materials **Year 6:** To explain that some changes form new materials, and that these changes are not usually reversible **Activities:** Children will identify solutions which are the product of irreversible reactions between the substances that were dissolved. They will then carry out practical investigations involving irreversible reactions. **Outcomes:** **Year 5:** Children know that when some materials are mixed together they cannot be	**Year 5/6:** To understand how Earth's tilt creates seasons. **Activities:** Children will learn about how the seasons are created because of the tilt of Earth's axis. They will learn how Earth is split into its Northern and Southern Hemispheres and how the seasons are different for the two halves of the planet. They will identify the seasons for the Northern Hemisphere based on the location of Earth in its orbit. Alternatively, the children will investigate day length and how it changes seasonally using data and graphs. **Outcomes:**	**Year 5:** To recognise the stages of development during childhood **Year 6:** To recognise the stages of development during childhood and understand the needs of children at those stages. **Activities:** Children will learn about changes during infancy and childhood, then consider the needs of children, and how these change over time as they develop. **Outcomes:** **Year 5:** Children describe the needs of a newborn baby • Children compare the needs

	the difference between flowering and non-flowering plants	**Outcomes:** **Year 5:** Children understand that plants disperse seeds Children understand that plants disperse seeds in different ways. **Year 6:** Children understand that plants disperse seeds, some of which grow to become adult plants. Children understand that plants disperse seeds in different ways.	**Year 6:** Children investigate reversible changes, including condensing and evaporating. Children can describe changes that occur when water is heated or cooled. Children can investigate the factors that speed up evaporation.	separated again • Children know that when an irreversible change takes place a new substance is produced **Year 6:**• Children know that when some materials are mixed together they cannot be separated again • Children know that when an irreversible change takes place a new substance is produced • Children know how to tell if the new substance produced is a gas	**Year 5:** • Can children describe the different changes that happen between seasons? • Can children use Earth's tilted axis to explain how seasons are created? • Can children describe the differences in seasons between two locations in opposite hemispheres? **Year 6:**	of a human baby to those of other mammals • Children can describe the stages of development that occur during childhood **Year 6:** Children describe the needs of a newborn baby • Children compare the needs of a human baby to those of other mammals • Children can describe the stages of development that occur during childhood • Children can describe how the needs of humans change at different points in their life cycle
Lesson 4	**Year 5/6:** To find out about Carl Linnaeus and his classification system. **Activities:** Children will learn about the development of Linnaeus' classification system, then use it to help them identify, classify, and answer questions about a number of different organisms. **Outcomes:** **Year 5/6:** Children know who Carl Linnaeus is and how he contributed to science • Children know that animals can be assigned to specific groups based on their characteristics • Children give reasons for why classification systems are important	**Year 5/6:** Discover how and why some plant seeds can be dispersed in the air **Activities:** Review seeds from last week – how can we identify how they disperse themselves? Which seeds are dispersed by air? What do they have in common? Which of the collected seeds would travel furthest from their parent plant? How could we find out? Children plan and develop an investigation - Discuss possible investigations that could be carried out in the classroom to answer the question. How can they ensure that the test is fair? Which factors need to stay the same? *Seeds dropped from the same height, same strength of wind (use of cooling fan), etc.* **Outcomes:** **Year 5/6:**. To carry out a fair test in order to answer a question. To understand that plants need to disperse their seeds to avoid new plants becoming competition. To check observations and measurements by repeating them where appropriate.	**Year 5/6:** To be able to explain how evaporation and condensation are involved in the water cycle. **Activities:** Children explain how evaporation & condensation are involved in the water cycle & describe all the water cycle processes. Identify the different forms of water that are seen in various weather conditions & the different clouds that are seen in our skies. **Outcomes:** **Year 5:** To explain the part played by evaporation and condensation in the water cycle. To find out about reversible changes including condensing and evaporating. To study a range of environmental contexts that are familiar to them. **Year 6:** To explain the part played by evaporation and condensation in the water cycle. To find out about reversible changes including condensing and evaporating. To study a range of environmental contexts that are familiar and of interest to them. To use appropriate scientific language and terms to communicate ideas and explain phenomena and processes.	**Year 5/6:** To identify when a change caused by heating or cooling is reversible or irreversible **Activities:** Children will learn about reversible and irreversible changes caused by heating or cooling materials. They will then either predict and sort materials according to what may happen when they are heated or cooled, or explore irreversible reactions by cooking. **Outcomes:** **Year 5:** **Year 6:** Do children know that heating and cooling materials can cause them to change? • Can children recognise reversible and irreversible changes caused by heating and cooling? • Can children explain how to reverse a change caused by heating or cooling?	**Year 5/6:** To learn about the phases of the Moon. **Activities:** Children will be guided through the lunar month and the eight phases of the Moon that can be seen as the Moon orbits Earth. They will learn to identify the shapes of each phase and the names of these shapes, including if the phase is waxing or waning. They will create their own spinning diagram of each of these phases. **Outcomes:** **Year 5:** Children name the different phases of the moon • Children able to order the phases of the moon • Children describe how the phases of the moon are created	**Year 5/6:** To understand the initial changes inside and outside of the body during puberty **Activities:** Children will learn about the roles of some hormones in the body, and how they affect changes in boys and girls at the start of puberty. They will also identify and describe or label changes that occur inside and outside the body **Outcomes:** **Year 5/6:** Children explain the initial changes that occur inside and outside the body at the start of puberty • Children correctly identify the parts of the body that change during puberty • Children explain in simple terms the role played by hormones in the growth of humans and other animals
Lesson 5	**Year 5:** To explore what microorganisms **Year 6:** To explore what microorganisms are and how they can be grouped. **Activities:** Children will learn about some ways in which microorganisms are classified, and what they need to survive. Following this, they may either write in depth about micro-organisms, or conduct an experiment to determine what food a microorganism prefers. **Outcomes:** **Year 5:** Children know what micro-organisms are • Children understand that some micro-organisms can be harmful and others can be helpful **Year 6:** Children know that micro-organisms can be classified into groups • Children understand that some micro-organisms can be harmful and others can be helpful	**Year 5/6:** To devise a fair test to identify the best conditions for seed germination **Activities:** Revise methods of seed dispersal. What are the best conditions for seed germination? In groups allow pupils to create their own experiment to answer. Which conditions do they need to create? *Heat, cold, damp, dry, light, dark – How can they be recreated? Set up investigations – monitor over time.* **Outcomes:** **Year 5:** To work with others to create and set up a fair test. To create simple tables to record my results. To think about what might happen, what kind of evidence to collect and what equipment and materials to use. **Year 6:** To work with others to create and set up a fair test. To create tables to record my results. To think about what might happen or try things out when deciding what to do, what kind of	**Year 5/6:** To explain how evaporation and condensation are involved in the water cycle **Activities.:** Remind Children how important water is to all living organisms. Look at how little of the water present on earth is fresh & therefore drinkable. Children investigate how animals & plants adapt to arid conditions & create posters to encourage us to save water. **Outcomes:** **Year 5:** To explain the part played by evaporation and condensation in the water cycle. To understand that water appears in many forms in different weathers. To find out about reversible changes including condensing and evaporating. **Year 6:** To explain the part played by evaporation and condensation in the water cycle. To understand that water appears in many forms in different weathers.	**Year 5:** To investigate the materials needed for something to burn and **Year 6:** To investigate the materials needed for something to burn and the new materials formed by burning happening. **Activities:** Children will consider what happens when materials are burned, including what new materials are produced. They will carry out investigations involving burning a candle and explain what is **Outcomes:** **Year 5:** Children know that new materials are formed when materials are burned • Children describe what happens when a candle burns • Can children identify and assess hazards associated with burning materials	**Year 5/6:** To discover how theories about our solar system have changed. **Activities:** Children will learn 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. The children will compare the similarities and differences between a geocentric and heliocentric model of the solar system. **Outcomes:** **Year 5/6:** Children able to define what a solar system is • Children explain what the differences between geo and heliocentric models of the solar system are • Children compare the ideas of the solar system we know now, with those held by Ptolemy and Copernicus	**Year 5:** To know the changes that occur during puberty **Year 6:** To know the changes that occur during puberty and how they differ for boys and girls. **Activities:** Children will learn about later changes during puberty and adolescence, including sperm production and menstruation. They will then consider and describe ways in which children can stay fit and healthy during puberty. **Outcomes:** **Year 5:** Children remember some of the initial changes during puberty • Children explain some of the ways in which boys' and girls' bodies start to differ during puberty **Year 6:** Children remember some of the initial changes during puberty • Children explain some of the ways in which boys' and girls' bodies start to differ during puberty • Children suggest some ways in which

		evidence to collect and what equipment and materials to use.	To find out about reversible changes including condensing and evaporating. To explain the Water Cycle using scientific terminology.			teenagers can look after themselves and stay fit and healthy during puberty
Lesson 6	**Year 5/6:** To be able to identify and classify organisms in the local area. **Activities:** Children will either look at a local environment, or study one in another country. They will identify and classify organisms in that environment. **Outcomes:** **Year 5/6:** Children identify a variety of different organisms found in their local environment • Children classify a variety of organisms appropriately • Children use a variety of sources of information to identify organisms they are unfamiliar with	**Year 5/6:** To understand that plants are a vital part of human life **Activities:** Imagine a world without plants? Why are plants important? *food (directly or indirectly link to food chains), clothing, paper, shelter, fuel (gas, oil, coal all plant-based) and medicines. Oh and the little matter of oxygen production! Talk through a day and how plants are an essential part – bed sheets, breakfast, pencils etc.* Possible set up letter from Kew Gardens - asking pupils to put together information boards for their latest exhibition "Living with Plants." Allocate Children a plant name from the list and challenge them to find out the following information about it: *the scientific name of the plant, the location where it is usually grown, one or more non-food products made from the plant, and where these products are commonly used (home, farm, business, space, school, other — specify). Present findings.* **Outcomes:** **Year 5/6:** To understand the role that plants play in everyday lives. To use the internet to research to find out more about the uses of plants.	**Year 5:** To understand how important water is to all living organisms **Year 6:** To understand how important water is to all living organisms and research how water is used in everyday life. **Activities:** (Recaps on Y3/4 learning on desert habitat) Global view. Children discover how many people across the world face real difficulties in obtaining fresh water & investigate how they can be helped. Discuss how the water we drink is purified & then Children compare different filtration methods. **Outcomes:** **Year 5:** To understand that the life processes common to humans and other animals include nutrition (water). To understand the effect of water on plant growth. To find out how some animals and plants are suited to living in dry habitats. To understand why water is so important for life. **Year 6:** To understand that the life processes common to humans and other animals include nutrition (water). To understand the effect of water on plant growth. To find out how some animals and plants are suited to living in dry habitats. To understand why water is so important for life. To explain ways in which to conserve water in everyday life. To describe how animals and plants adapt to living in arid environments.	**Year 5/6:** To compare and group together everyday materials on the basis of their properties **Activities:** Children will identify and discuss several different properties of a range of materials (conductive, magnetic, soluble, flexible, transparent etc.), then either sort and group given sets of materials, or use their scientific enquiry skills to explore the properties of some materials. **Outcomes:** **Year 5/6:** Children describe everyday materials according to their properties • Children compare and group everyday materials according to their properties • Children explain why some everyday materials are useful due to their properties	**Year 5/6:** To investigate the planets in the solar system. **Activities:** Children will conduct their own research into the planets within our solar system. They will discuss the objects in our solar system as a class, including natural satellites, comets, asteroids (and the asteroid belt), planets and dwarf planets. They will work to create their own fact book or model of the solar system. **Outcomes:** **Year 5/6:** Children name the eight planets in our solar system • Children able to name the eight planets in order from nearest to farthest from the Sun • Children use researching skills to find relevant information on a topic	**Year 5/6:** To understand how the body changes during adulthood and old age. **Activities:** Children will learn about some changes in the body that occur during adulthood and old age. They may then either describe ways in which they may change as they get older, or discuss some problems associated with stereotypical views regarding the elderly **Outcomes:** **Year 5/6:** Children explain some ways in which the body changes during old age • Children describe some ways in which older people can stay fit and healthy
Lesson 7				**Year 5/6:** To give reasons for the particular uses of everyday materials in relation to their properties **Activities:** Children will first recap on the vocabulary used to describe the properties of different materials, before taking a closer look at some of them, and why materials with these properties are used for certain purposes. In their independent activities, children will use their knowledge and reasoning skills to explain how the properties of a material make it useful for a specific purpose **Outcomes:** **Year 5/6:** Children list and explain some of the different properties that materials can have • Children understand that the properties materials have can affect how they are used/what they are used for • Children explain why a certain material has been chosen for a specific purpose, based on its properties		

Assessment Criteria

	Working Scientifically	Investigate Living Things and Understand Evolution and Inheritance	Understanding Plants - Revisiting previous learning	Water Cycle	Properties of materials and changes in materials	Understand the Earth's Movement in Space	Understand Animals and Humans and Understand Evolution and Inheritance
Year 5 and Year 6	plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs; • use test results to make predictions to set up further comparative and fair tests; • report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations • identify scientific evidence that has been used to support or refute ideas or arguments	B9: Describe how living things are classified into broad groups according to common observable characteristics. B10: Give reasons for classifying plants and animals based on specific characteristics. B13: Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	B1: Relate knowledge of plants to studies of evolution and inheritance. B2: Relate knowledge of plants to studies of all living things. B13: Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	Revising states of matter from Year 3/4 C3: Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. B13: Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	C1: 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. C2: Understand how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. C3: Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. C4: Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. C5: Demonstrate that dissolving, mixing and changes of state are reversible changes. C6: 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.	P17: Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. P18: Describe the movement of the Moon relative to the Earth. P19: Describe the Sun, Earth and Moon as approximately spherical bodies. P20: Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	B3: Describe the changes as humans develop to old age. B10: Give reasons for classifying plants and animals based on specific characteristics. B11: Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. B12: Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. B13: Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.