




Science Unit of Work
Year 5

Unit	Prior learning (Retrieval)	Future learning	Common Misconceptions
Animals including Humans 	<ul style="list-style-type: none"> Know the names of the different parts of the digestive system in humans. (mouth, tongue, teeth, oesophagus, stomach, and small and large intestine) Know the functions of the different parts of the digestive system in humans. (mouth, tongue, teeth, oesophagus, stomach, and small and large intestine) Know the names of the different teeth in humans. (Incisors, molars and canines) Know the functions of the different teeth in humans. (Incisors, molars and canines) Know how to use a food chain and identify the producers, predators and prey) 	<ul style="list-style-type: none"> Know the name of the main parts of the human circulatory system (heart, lungs, blood vessels). Know the function of the heart. Know the function of blood vessels and blood. Know the impact of lifestyle on the way their bodies function. (diet, exercise, drugs) Know how nutrients and water are transported within animals, including humans. 	<ul style="list-style-type: none"> Human beings have babies to simply have a family. The brain is fully developed at birth.
National Curriculum Subject Content:	<ul style="list-style-type: none"> Describe the changes as humans develop to old age. 		
Knowledge:			Key Vocabulary
Intended Knowledge Substantive	<ol style="list-style-type: none"> Know the key stages of foetal development in humans. Know the stages in growth and development of humans (baby, toddler, childhood, adolescence, adulthood, and old age) Know the changes in each stage of development in humans. 		Foetus, adolescence, gestation period, development, reproduce, life expectancy,
Working Scientifically:	Enquiry	Working Scientifically Objectives	Working Scientifically Vocabulary
Disciplinary Knowledge:	Research the gestation periods of other animals and comparing them with humans	<ul style="list-style-type: none"> Report and present findings in oral and written forms such as displays and other presentations. Use straightforward scientific evidence to answer questions or to support their findings. Identify scientific evidence that has been used to support or refute ideas or arguments. Identify differences, similarities or changes related to simple scientific ideas and processes. 	Evidence, research, refute, differences, similarities
Assessment Outcomes	<div style="text-align: center;">Substantive</div> <ul style="list-style-type: none"> I know the changes as humans develop to old age 		<div style="text-align: center;">Disciplinary</div> <ul style="list-style-type: none"> I can research the gestation periods of other animals and comparing them with humans.
Significant people/places	<ul style="list-style-type: none"> Erik Erikson (Stages of human development) 		


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<p>Forces</p> 	<ul style="list-style-type: none"> Gather, record, classify and present data in a variety of ways to help in answering questions Set up simple practical enquiries, comparative and fair tests Record my findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables 	<ul style="list-style-type: none"> Know the difference between balanced and unbalanced forces and how they influence the movement of an object. 	<ul style="list-style-type: none"> Forces get things going but don't stop them. An object stops because 'it runs out of force' Objects fall because there isn't a force acting on them. All metals are magnetic
National Curriculum Subject Content:	<ul style="list-style-type: none"> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect 		
Knowledge:			Key Vocabulary
Intended Knowledge Substantive	<ol style="list-style-type: none"> Know the objects fall to the floor because of gravity Know the effects of air resistance on an object (eg parachute, sycamore seeds and plane) Know the effects of water resistance (eg boats and swimmers) Know the effects of friction fraction. (eg cars and bikes) Know and can talk about the use of mechanisms including levers, pulleys and gears. 		Air resistance, force, friction, gears, gravity, levers, magnetic force, mechanisms, pulleys, water resistance.
Working Scientifically:	Enquiry	Working Scientifically Objectives	Working Scientifically Vocabulary
Disciplinary Knowledge:	<ul style="list-style-type: none"> Plan a comparative test to explore the relationship between size of a parachute and time taken for it to land on the ground. 	<ul style="list-style-type: none"> Plan different types of scientific enquiry to answer questions including recognising and controlling variable where necessary Use test results to make predictions to set up further comparative and fair tests Report and present findings, including conclusions, casual relationships and explanations of results 	Variable, predict, conclusion, findings, relationships
Assessment Outcomes	<p style="text-align: center;">Substantive</p> <ul style="list-style-type: none"> I know what gravity is and its impact on our lives. I know the effect of air resistance I know the effect of water resistance I know the effect of friction I can explain how levers, pulleys and gears allow a smaller force to have a greater effect. 		<p style="text-align: center;">Disciplinary</p> <ul style="list-style-type: none"> I can plan a comparative test I can control variables I can use results to make further predictions I can present findings and explain results.
Significant people/places	Galileo Galilei and Isaac Newton (Helped develop the theory of gravitation)		

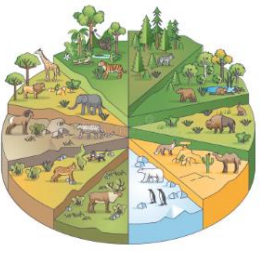
**Science Unit of Work
Year 5**

Unit	Prior learning (Retrieval)	Future learning	Common Misconceptions
<p>Changes in materials</p> 	<ul style="list-style-type: none"> Know the difference between an object and the material it is made from. Know and name a variety of everyday materials including wood, plastic, glass, metal, water and rock. Know simple physical properties of everyday materials (listed above) Know how materials can be changed by squashing, bending, twisting and stretching. Know how the property of a material Know why a material might or might not be used for a specific job. 	<ul style="list-style-type: none"> Know how the properties of the different components of a mixture lead to different methods of separating them. Know the difference between a chemical and physical change Link knowledge of chemical and physical changes to reactions with acids and alkalis Know how the properties of solids, liquids and gases are determined by the particle model. 	<ul style="list-style-type: none"> Thermal insulators keep cold in or out Thermal insulators warm things up Solids have dissolved and disappeared in liquids so we can't get them back
National Curriculum Subject Content:	<ul style="list-style-type: none"> compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic demonstrate that dissolving, mixing and changes of state are reversible changes 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 and the action of acid on bicarbonate of soda. 		
Knowledge:			Key Vocabulary
Intended Knowledge Substantive	<ol style="list-style-type: none"> Know how some materials can be separated (sieving, filtering, evaporating and use of a magnet). Know and explain how a material dissolves to form a solution Know and show how to recover a substance from a solution. Know and demonstrate that some changes are reversible and some are not Know how some changes result in the formation of a new material and that this is usually irreversible 		change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible, insulator
Working Scientifically:	Enquiry	Working Scientifically Objectives	Working Scientifically Vocabulary
Disciplinary Knowledge:	Comparison: Compare and group materials based on their properties (hardness, solubility, transparency, conductivity-thermal and electrical- and response to magnets)	<ul style="list-style-type: none"> Plan a comparative test identifying variables Use results to make further predictions to set up further comparative/fair tests Record data in tables 	<ul style="list-style-type: none"> Comparative
Assessment Outcomes	<p style="text-align: center;">Substantive</p> <ul style="list-style-type: none"> I know how some materials can be separated (sieving, filtering, evaporating and use of a magnet). I know and explain how a material dissolves to form a solution I know and show how to recover a substance from a solution. I know and demonstrate that some changes are reversible and some are not I know how some changes result in the formation of a new material and that this is usually irreversible 		<p style="text-align: center;">Disciplinary</p> <ul style="list-style-type: none"> I can plan a comparative enquiry I can use results to make further predictions I can record data in tables I can talk about my results.
Significant people/places			

Science Unit of Work
Year 5 Spring 1

Unit	Prior learning (Retrieval)	Future learning	Common Misconceptions
Earth and Space 	<ul style="list-style-type: none"> Knowledge of light and dark and the moons relationship with the Sun/Earth Know that the amount of the moon we see changes. Know the names of some planets 	<ul style="list-style-type: none"> Know how gravitational forces causes the orbits of the planets and their moons. Know how the tilt of the Earth causes the seasons. 	<ul style="list-style-type: none"> The Earth is flat The sun is a planet The sun rotates around the earth The Moon appears only at night Night is caused by the Moon getting in the way of the Sun or the Sun moving further away from the Earth.
National Curriculum Subject Content:	<ul style="list-style-type: none"> describe the movement of the Earth, and other planets, relative to the Sun in the solar system describe the movement of the Moon relative to the Earth describe the Sun, Earth and Moon as approximately spherical bodies use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky 		
Knowledge:			Key Vocabulary
Intended Knowledge Substantive	1) Know how the Earth and other planets move relative to the sun in the solar system. 2) Know how the moon moves in relation to the Earth. 3) Know that the sun, Earth and moon are approximately spherical bodies. 4) Know about the Earth's rotation and use it to explain day and night.		dwarf planet, geocentric model, heliocentric model, orbit, revolve, rotate, solar system
Working Scientifically:	Enquiry	Working Scientifically Objectives	Working Scientifically Vocabulary
Disciplinary Knowledge:	<ul style="list-style-type: none"> Research- using secondary sources: What is it like on other planets? / What is it like on the moon? Problem-solving – How can we use the Sun to tell the time? 	<ul style="list-style-type: none"> Ask own questions about scientific phenomena and select the most appropriate ways to answer these questions. Report and present findings in oral and written forms such as displays and other presentations. 	<ul style="list-style-type: none"> Support, refute, phenomena,
Assessment Outcomes	<p style="text-align: center;">Substantive</p> I know how the Earth and other planets move relative to the sun in the solar system I know how the moon moves in relation to the earth I know that the sun, Earth and moon are approximately spherical bodies. I know about the Earth's rotation and use it to explain day and night. I know about different theories about space- geocentric model/heliocentric model.		<p style="text-align: center;">Disciplinary</p> I can use secondary sources to find out what other planets are like. I can problem solve to answer scientific questions.
Significant people/places	Nicolaus Copernicus		

Science Unit of Work
Year 5

Unit	Prior learning (Retrieval)	Future learning	Common Misconceptions
<p>Living things and their habitats</p> 	<ul style="list-style-type: none"> Know the differences between things that are living, dead, and things that have never been alive Know the name of a variety of plants and their habitats (cacti, seaweed, palm oil tree, bamboo, maple, oak) Know the name of a variety of animals and their habitats Know that most living things live in habitats to which they are suited. Know how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Know how animals obtain their food from plants and other animals. Know groups of animals and the basic characteristics of these groups. (fish, amphibians, reptiles, birds, and mammals and invertebrates) Know how to use classification keys to help group, identify and name living things. Know some ways that humans impact positively and negatively on the environment. 	<ul style="list-style-type: none"> Know the names of groups of animals and the characteristics of each group. (reptile, mammal, fish, bird, amphibian) Know that living things can be grouped and know the characteristics related to each group. (plants, animals, fungi and micro-organisms) Know about groups of invertebrates (arachnids, molluscs, crustacean, insects) Know why living things belong to different classification groups. 	<ul style="list-style-type: none"> All plants have flowers All plants start from seeds Only birds lay eggs
National Curriculum Subject Content:	<ul style="list-style-type: none"> describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals. 		
Knowledge:			Key Vocabulary
Intended Knowledge Substantive	<ol style="list-style-type: none"> 1) Know the life cycle of a mammal (human) 2) Know the life cycle of an amphibian (frog) 3) Know the life cycle of a bird 4) Know the process of reproduction in a plant (asexual and sexual reproduction). 5) Know the difference between different life cycles (mammal/amphibian/bird/butterfly) 6) Know animals that go through metamorphosis (frog and butterfly) 		Asexual reproduction, sexual reproduction, life cycle, metamorphosis, gestation
Working Scientifically:	Enquiry	Working Scientifically Objectives	Working Scientifically Vocabulary
Disciplinary Knowledge:	<p>Comparison: Compare life cycles of different plants and animals</p> <p>Pattern-seeking Is there a relationship between the mass of adult animal and the length of the gestation period?</p>	<ul style="list-style-type: none"> Report evidence from enquiries in different ways (diagrams/presentation) Record data using scatter graphs Ask questions and suggest reasons for similarities and differences. 	Evidence scatter graph
Assessment Outcomes	<p style="text-align: center;">Substantive</p> <p>I know the about the life cycle of a mammal (human) I know the about the life cycle of an amphibian (frog) I know the about the life cycle of a bird I know the process of reproduction in a plant (asexual and sexual reproduction). I know the difference between different life cycles (mammal/amphibian/bird/butterfly) I know animals that go through metamorphosis (frog and butterfly)</p>		<p style="text-align: center;">Disciplinary</p> <p>I can record data on a scatter graph I can ask questions and suggest reasons for similarities and differences. I can present my findings in different ways I can investigate the relationship between mass of an animal and the length of the gestation period.</p>
Significant people/places	Sir David Attenborough – biologist		