

Science Cohesion Across School

	Autumn		Spring		Summer	
Reception	<p>The Human Body</p> <p>Within this unit reception will learn all about the human body linking to our class topic 'All about me'. The children will be able to name the key body parts, linking into their play with exploring body part hunts, the human skeleton, playing operation etc. We will explore our 5 senses, looking at each one in detail, and linking the body part to its sense.</p>	<p>Plants</p> <p>In this unit we will be looking at different types of food. Categorising healthy and unhealthy food and linking this to healthy eating and Harvest time. Children will explore different and new types of vegetables and fruits and create a fruit kebab. We will link this in with last half term's learning discussing different smells, textures, tastes.</p>	<p>States of Matter</p> <p>Within this unit the children will be looking at Winter weather and changes. Our topic this half term 'Winter Wonderland' allows us to explore freezing and melting. We will explore making our own snow and frost experiment. We will have the opportunity to freeze water and explore different ways we can melt ice.</p>	<p>Plants</p> <p>Our 'Growing' topic this half term will allow us to explore different seeds, plants, herbs and vegetables. We will look at what grows from the ground, creating our own herb garden, planting a range of seeds and vegetables and watching them grow and change over time. Children will have the opportunity to explore and learn through our class garden centre.</p>	<p>Living things and their habitat</p> <p>In this unit we will focus on the growth of our vegetables/plants. We will dig up vegetables that were planted previously and prepare/eat them. We will extend our learning to looking at plant life cycles, and animal life cycles linking to our topic this half term 'If you go down to the woods today'. We will focus on living things within the woods, and their habitat and explore this first hand with a trip to the woods.</p>	<p>Animals Including Humans</p> <p>Within this unit we will be focusing on sea creatures. This links with our topic learning all about the seaside. We will look at the 'under the sea world'. We will look at rockpools and the creatures that live within them. We will look at driftwood and aquariums. We will produce fact files on a sea creature of interest and enhance with a trip to the beach.</p>
	<p>Weather & Seasonal Changes</p> <p>Reception will cover weather and seasonal changes throughout the year. We will complete our daily calendar chart which allows us to look at the season and weather changes. We will then move on to Autumnal changes looking at the changes in colour of leaves, why leaves change colours and going on an autumn walk. We will look at the transition into winter, looking at how the trees lose all their leaves and the changes in weather. Going into spring we will attend a 'Skip into Spring' trip at Hardwick Park, looking for signs of spring, looking for daffodils, snow drops, signets etc. In summer term we will look at the change in flowers, plants, weather and temperature.</p>					

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Year 1	Animals Including Humans		Materials	Plants
	<p>In this unit children will be introduced to the 5 key animal groups (amphibians, birds, fish, mammals and reptiles). During the unit children will describe and compare these animal groups. Children will also be introduced to the terms, carnivore, herbivore and omnivore. This unit will also cover the human body which children will label and link body part to its sense.</p>		<p>During this unit children will look at a range of everyday materials (wood, plastic, glass, metal, water and rock). Children will distinguish between the object and the material it is made from. Pupils will also start to describe the simple properties of a variety of materials after based on sight and experiments to test properties. During the unit child will have had the opportunity to group the materials based on experiments.</p>	<p>This unit will link to work in Reception based on plants in the environment (specifically spring/summer). During the unit children will work on identifying and naming a variety of common garden plants (including deciduous and evergreen trees). Children will also be taught to identify and describe the basic structure of a variety of common flowering plants (including trees). This will be developed on through the school.</p>
Weather & Seasonal Changes				
<p>In Year 1 we will continue to build on the work Reception completed on seasons by continuing our daily calendar that look at the season and weather. We will go into further detail during the unit and look specifically at each season during the year. We will focus on how the seasons change over time as well as that change in plants, weather, temperature and hours of day light within each season.</p>				
Year 2	Plants	Animals Including Humans	Materials	Living Things and Their Habitats
	<p>In this unit pupils will recap from Year 1 the different parts of the flower and will explore how seeds and bulbs mature into plants. They will focus on what plants and flowers need to grow and stay healthy. They will use the outdoor area to observe their planting from Year 1 and also plant some bulbs to continue to observe throughout Year 2. This links to DT work as the children will use the plants grown in Year 1 to cook with.</p>	<p>In this unit pupils will focus on what the animal groups they learnt about in Year 1 need to survive, including humans. This will form a basic understanding of needs and be explored later in Summer Term with work on food chains. This unit focuses on human's health and hygiene. This links to work in DT and PSHE. The children will explore what is needed for a balanced diet and how to look after their bodies linking in work from</p>	<p>In the unit the children will build on their knowledge of materials from Year 1 and explore paper and cardboard as new materials. The children will build on Year 1 descriptions to compare and observe the suitability of these materials. This will link into their DT work as they make a moving vehicle. Pupils will also be introduced to changes to materials as they explore how to stretch, bend, twist and squash materials.</p>	<p>In this unit the children will make links to their learning from animals including humans in Autumn term. They will recap naming animals (Y1) and be introduced to the habitats they live in. The children are also introduced to the terms of living, dead and never been alive, making links to learning from Autumn term. Children will describe different habitats and how have provisions for the basic needs explored in the Animals topic in Autumn. Simple food chains are introduced.</p>

		PE. Pupils will observe how animals including humans grow and have offspring. they will name animals and their babies.			
Year 3	<p>Rocks and Soils</p> <p>In this unit the children will learn about the three rock types; igneous, metamorphic and sedimentary along with their place in the rock cycle. They will build on the work from KS1 where they looked at properties of materials but will focus on the properties of rocks. They will look at the layers of the Earth which links to the geography topic on earthquakes. The children will also look at the different layers of soil, how soil is made and test the permeability of different soil types.</p>	<p>Forces & Magnets</p> <p>This is a new unit for the children and is a physics topic. The children will first look at different forces like push and pull and how all forces either start movement or stop it. Touch on how if the forces are equal then there will be no movement. They will investigate the effect that friction has on slowing down a moving object. They will then explore magnets and magnetic materials (this can be linked to the materials work from KS1). They will look at why magnets are useful and how we use them in everyday objects.</p>	<p>Light & Dark</p> <p>This is a new unit and looks at natural and man-made light sources. They will also look at objects that look like light sources but are not (e.g. the Moon). They will be introduced to the key term reflection and how this allows us to see and is how mirrors work. They will also begin to look at darkness as the absence of any light. The children will investigate materials and sort them according to whether or not they are transparent, translucent or opaque (this will build upon the properties of materials work done in KS1). In this unit the children will also investigate the creation of shadows and how they change depending on an</p>	<p>Animals Including Humans</p> <p>This unit will build upon the work done in Year 2 around healthy eating and diet. The children will identify the nutrients and the amount of each that the human body needs to be healthy. They will also look at the 3 types of skeletons: exoskeleton, endoskeleton and hydrostatic skeleton and sort a range of animals according to these. They will look at the three main functions of a skeleton (protection, support and movement) and look at the specific bones and joints in the human body. Finally, they will look at some of the main muscles in the human body and how</p>	<p>Plants</p> <p>This unit links closely with the work done previously in the KS1 plants units. The children will build upon their knowledge by looking at the life cycle of a flowering plant including pollination, seed formation and seed dispersal. Along with this they will be introduced to key scientific terms such as photosynthesis. They will create a detailed sketch of the parts of a flower and their functions. They will learn about the male and female parts of a flowering plant and the corresponding vocabulary (e.g. stigma, stamen...). They will recap from KS1 what a plant needs to be healthy and grow and build on this by looking at how different plants need different amounts of each thing. They will also investigate how water is transported in plants.</p>

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			objects distance from a light source.	muscles work in antagonistic pairs.		
Year 4	<p align="center">Sound</p> <p>In this unit pupils will identify how sounds are made, associating some of them with something vibrating. They will recognise that vibrations from sounds travel through a medium to the ear. Children will find patterns between pitch and features of the object that produced it. They will also find patterns between volume of a sound and the strength of the vibrations that produced it. Pupils will recognise that sounds get fainter as the distance from the sound source increases. This unit will have strong links to the work completed in music when the children learn to play the Djemba Drums.</p>		<p align="center">Living Things and Their Habitats</p> <p>In this unit children will recognise that living things can be grouped in a variety of ways which is linked to the work completed in Year 2. They will explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. This will be linked to flow charts in computing. Pupils will recognise that environments can change and that this can sometimes pose dangers to living things. This builds upon the work on different habitats in Year 2.</p> <p>This work links strongly to the next Science topic when pupils will Construct and interpret a variety of food chains, identifying producers, predators and prey unit of animals including humans].</p>	<p align="center">Animals Including Humans</p> <p>In this unit pupil will describe the simple functions of the basic parts of the digestive system in humans. They will also identify the different types of teeth in humans and their simple functions which links to the work in Year 3 when pupils explore skeletons and muscle for support and protection.</p> <p>Pupils will construct and interpret a variety of food chains, identifying producers, predators and prey which links with work in Year 2 when pupils describe the needs of animals including humans.</p>	<p align="center">Electricity</p> <p>This unit is the first introduction to studying electricity in Key Stage 2. Children will learn about what electricity is and how it was discovered. They will identify which appliances use electricity in their homes and how to keep themselves safe. Children will construct simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers and start to create pictorial circuits. Pupils will identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. They will investigate how easily different types of switches can break and reconnect a circuit. Children will also identify and recognise some common conductors and insulators, and associate metals with being good</p>	<p align="center">Materials & States of Matter</p> <p>In this unit children will compare and group materials together, according to whether they are solids, liquids or gases. This will build upon the knowledge pupils gained in Year 2 when comparing everyday materials. Pupils will observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). This will be reinforced in DT when we make bread.</p>

				conductors. This will link close with the work in DT when pupils will make longboats with a motor.	
Year 5	<p>Materials & their properties</p> <p>This unit builds on the Year 4 unit of 'Materials and States of Matter'. Children will deepen their knowledge of solids liquids and gases and identify the properties of a range of different materials. They will investigate the best materials to use as thermal insulators as well as the best electrical conductors. They will identify materials that dissolve in water to form a solution and use their knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. They will explore reversible and irreversible changes and 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. Children will also look at the work of chemists such as Stephanie Kwolek to understand and evaluate the impact of her Kevlar discovery.</p>	<p>Animals Including Humans</p> <p>This unit builds on the work children completed in the Year 4 unit 'Animals Including Humans'. Children will describe the changes as humans develop to old age by drawing a timeline to indicate stages in the growth and development of humans. They will record data and results using bar and line graphs in the context of the growth of babies in height and/or weight during their first year after birth. Children will compare and contrast the changes that happen to males and females as they go through puberty and this will link to the visit from the school nurse. Children will also learn about the changes</p>	<p>Living Things and Their Habitats</p> <p>In this unit children will build on the work from Years 2,3 and 4. They will describe the life process of reproduction in some plants and animals by exploring both sexual and asexual reproduction in plants. They will be able to describe the life cycle of a mammal by exploring the life cycles of different mammals. They will also describe the life process of reproduction in some animals by describing sexual reproduction in mammals. Children will compare the life cycles of plants, mammals, amphibians, insects and birds, gaining an understanding of similarities and differences between the groups. They will study</p>	<p>Earth & Space</p> <p>This unit links to the Year 3 unit of 'Light and Dark'. Children will gain an in-depth knowledge of the planets in the solar system and be able to name the planets in order. They will gain an understanding of why we have night and day as well as the phases of the moon. They will look at the significance of Tim Peake and his role on the ISS. Children will investigate and explain why we have time zones and how the same country can fall into multiple time zones.</p>	<p>Forces</p> <p>This Forces unit builds on the work children completed in Year 3 looking at 'Forces and Magnets'. It will help children understand how forces affect everything around us. They will learn about the effects of gravity, friction, air and water resistance as well as building models to explore the ways in which pulleys, levers and gears work. They will think about careers where an understanding of forces is needed and will look in detail at the work of Isaac Newton.</p>

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		that occur as people enter old age. They will report findings from enquiries, including oral and written explanations of results in the context of the gestation period for animals. They will then analyse data on gestation periods and life expectancies of animals.	the work of Jane Goodall and gain an insight into the impact her work with chimpanzees has had.		
Year 6	<p>Animals Including Humans</p> <p>This unit will build on children’s learning from years 3 and 4 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them to understand how the circulatory system enables the body to function. Children will learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body. Children will work scientifically by: exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs,</p>	<p>Living Things and Their Habitats</p> <p>This unit will build on children’s learning about grouping living things in year 4 by looking at the classification system in more detail. Children will be introduced to the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Through direct observations where possible, children will classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). Children will discuss reasons why living things are placed in one group and not another. Children will find out</p>	<p>Evolution and Inheritance</p> <p>This unit will build upon what children learned about fossils in the topic on rocks in year 3. Children will find out more about how living things on Earth have changed over time. They will be introduced to the idea that characteristics are passed from parents to their offspring, for instance by considering different breeds of dogs, and what happens when, for example, labradors are crossed with poodles. Children will also appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes’ necks got longer, or the development of insulating fur on the arctic fox. Children will find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution. Children will work scientifically by: observing and raising questions about local animals and how they are adapted to their environment; comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels.</p>	<p>Light & Dark</p> <p>This unit will build on the work on light in year 3, exploring the way that light behaves, including light sources, reflection and shadows. Children will talk about what happens and make predictions. Children will work scientifically by: deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. They will investigate the relationship between light sources, objects and shadows by using shadow puppets.</p>	<p>Electricity</p> <p>This unit will build on work in year 4. Children will construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. They will learn how to represent a simple circuit in a diagram using recognised symbols. Children will work scientifically by: systematically identifying the effect of changing one component at a time in a circuit; designing and making a set of traffic lights, a burglar alarm or some other useful circuit.</p>

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	lifestyle and health.	about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification. Children will work scientifically by: using classification systems and keys to identify some animals and plants in the immediate environment. They will research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.			
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