

Hebden Royd Science Overview



	Autumn		Spring		Summer	
EYFS	It is expected that links to various aspects of all foundation subjects can be made and enhanced through <i>all</i> the ELG strands (communication & language; physical development; personal, social and emotional development; literacy, mathematics; understanding the world; expressive arts & design). However, the ELGs that most closely relate to geographical learning are those in understanding the world . As Nursery & Reception has a 2-year cycle for topics (each topic occurring once while pupils are in EYFS), Nursery children will participate in teaching inputs for topic-based learning. The class teacher will use appropriate and effective questioning to develop reception pupils' science learning as set out in the ELGs below.					
	Communication and language This involves giving children opportunities to speak and listen in a range of situations and to develop their confidence and skills in expressing themselves. Through conversation, story-telling and role play, where children share their ideas, allowing children to become comfortable using a rich range of vocabulary and language structures.		Understanding the world This involves guiding children to make sense of their physical world and their community. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains.		PSED This involves modelling and guiding children to learn how to look after their bodies, including healthy eating, and manage personal needs independently.	
	Listening, attention and understanding	Speaking	The natural world		Managing Self	
Early Learning Goal	<ul style="list-style-type: none"> Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions. Make comments about what they have heard and ask questions to clarify their understanding. 	<ul style="list-style-type: none"> Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate. 	<ul style="list-style-type: none"> Explore the natural world around them, making observations and drawing pictures of animals and plants. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. 		<ul style="list-style-type: none"> Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. 	
<i>Subject Leaders will monitor how their subject is taught in EYFS with reference to both the ELGs above and Characteristics of Effective Learning (summarised below) as they observe reception children within the provision. Full details of Characteristics of Effective Learning are in each subject leader file for staff to refer to as necessary.</i>						
	Playing and exploring – children investigate and experience things, and ‘have a go’		Active learning – children concentrate and keep on trying if they encounter difficulties, and enjoy achievements		Creating and thinking critically – children have and develop their own ideas, make links between ideas, and develop strategies for doing things	
Characteristics of Effective Learning	<ul style="list-style-type: none"> Realise that their actions have an effect on the world, so they want to keep repeating them. Make choices & explore different resources & materials. Plan & think ahead about how they will explore or play with objects. Guide their own thinking & actions by talking to themselves while playing. Make independent choices. Do things independently that they have been previously taught. Bring their own interests & fascinations into early years settings. 		<ul style="list-style-type: none"> Participate in routines Begin to predict sequences because they know routines. Show goal-directed behaviour. Use a range of strategies to reach a goal they have set themselves. Begin to correct their mistakes themselves. Keep on trying when things are difficult 		<ul style="list-style-type: none"> Sort materials Review their progress as they try to achieve a goal. Check how well they are doing. Know more, so feel confident about coming up with their own ideas & make more links between those ideas Solve Real Problems Use pretend play to think beyond the ‘here and now’ & to understand another perspective. Concentrate on achieving something that’s important to them. 	
EYFS (A)	The 3 Little Pigs <ul style="list-style-type: none"> Can I talk about who lives in my house? Can I discuss why the pigs’ houses blew down? And why the last house did not? Can I talk about the simple properties of straw, brick and sticks? Can I compare different materials? Can I draw a map of the story? 	Lost in the Toy Museum <ul style="list-style-type: none"> Can I talk about how toys of the past are similar/different to my toys? Can I imagine who might have played with the old toys? Can I imagine a toy of the future? Can I spot clues on the page that show the toys are from the past? Can I explore how different mechanical toys work? 	Ice Bear <ul style="list-style-type: none"> Can I name some arctic animals? Can I find the arctic on a globe? Can I explain why the arctic is similar/different to Hebden Bridge? Can I discuss what it is like to live in the arctic? What happens to Ice when it gets warm? Can I describe what I can see, hear and feel on a winter’s day? 	Handa’s Surprise <ul style="list-style-type: none"> Can I find Africa on a globe? Can I talk about how living in Africa might be different to living in Hebden Bridge? Can I talk about why some fruit grows in hot places? Can I talk about where our fruit comes from? Can I plant a seed? Can I discuss the life cycle of a bean plant? 	Paddington at the Tower <ul style="list-style-type: none"> Can I talk about how London is similar/different to Hebden Bridge? Can I make a map for Paddington? Can I find London on a picture map? Can I make observations about paintings and photos of king and queens of the past? Can I talk about the roles of people who worked in castles in the past? 	Monkey Puzzle <ul style="list-style-type: none"> Can I match baby animals to their mums? Can I identify animals that hatch from an egg? Can I observe how I have changed since being a baby? Can I match the baby picture to my friends and teachers? Can I draw a simple family tree?
EYFS (B)	Harry and the dinosaurs go to school. <ul style="list-style-type: none"> Can I draw a simple map of my classroom? Can I talk about how Harry might be feeling in the story? 	Bear Snores On <ul style="list-style-type: none"> Can I explain what hibernation is? Can I identify some animals who hibernate? Can I describe things that happen in autumn and winter? 	Little People, Big Dreams <ul style="list-style-type: none"> Can I observe similarities/differences in the life of myself and that of Frida Kahlo/Amelia Earhart/ Maya Angelou/Coco Channel/Ada 	The Very Hungry Caterpillar <ul style="list-style-type: none"> Can I observe the changes in a caterpillar? Can I draw the life cycle stages of a butterfly? Can I look after the minibeast 	Around the world with Max and Lemon <ul style="list-style-type: none"> Can I discuss past holidays? What is a country? Can I spot one on a globe? Can I identify land and sea on a 	Tiddler <ul style="list-style-type: none"> What is a sea? Can I identify one on a globe? Can I identify creatures that live in the sea? Can I describe the habitat of a

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	<ul style="list-style-type: none"> Can I talk about my family? Can I draw a self-portrait? Can I talk about the past summer? 	<ul style="list-style-type: none"> Can I create an autumn picture using natural resources? Can I describe what I see, hear and feel on a winter's day? 	<p>Lovelace?</p> <ul style="list-style-type: none"> Can I show interest in the occupations of Frida Kahlo/Amelia Earhart/ Maya Angelou/Coco Channel/Ada Lovelace? Can I spot clues the story is set in the past? 	<p>in our playground?</p> <ul style="list-style-type: none"> Can I describe what I see, hear and feel on a spring day? Can I talk about signs of spring? Can I plant and care for a daffodil? 	<p>globe?</p> <ul style="list-style-type: none"> Can I compare life in Hebden Bridge and life in Peru/Egypt/Papa New Guinea/Malaysia/Alaska? Can I use the correct tense when talking about the past? 	<p>coral reef?</p> <ul style="list-style-type: none"> Can I identify a simple food chain? Can I discuss the impact of pollution on the oceans? Can I describe the properties of materials found polluting our oceans?
KS1 (A)	<p>Materials recap – Chemistry</p> <ul style="list-style-type: none"> distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties. 		<p>Animals including humans – Biology</p> <ul style="list-style-type: none"> identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores, herbivores and omnivores describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 		<p>Plants – Biology</p> <ul style="list-style-type: none"> identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. identify and describe the basic structure of a variety of common flowering plants, including trees. <p>Habitats</p> <ul style="list-style-type: none"> explore and compare the differences between things that are living, dead, and things that have never been alive identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other identify and name a variety of plants and animals in their habitats, including micro-habitats describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. 	
	<p>Seasonal changes - Physics</p> <ul style="list-style-type: none"> observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies. 					
KS1 (B)	<p>Uses of Everyday materials – Chemistry</p> <ul style="list-style-type: none"> identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 		<p>Animals including humans – Biology</p> <ul style="list-style-type: none"> notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 		<p>Plants – Biology</p> <ul style="list-style-type: none"> observe and describe how seeds and bulbs grow into mature plants find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	
	<p>Seasonal changes - Physics</p> <ul style="list-style-type: none"> observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies. 					



<p>LKS2 (A)</p>	<p>Light – Physics</p> <ul style="list-style-type: none"> recognise that they need light in order to see things and that dark is the absence of light notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect their eyes recognise that shadows are formed when the light from a light source is blocked by a solid object find patterns in the way that the size of shadows change. 	<p>Sound – Physics</p> <ul style="list-style-type: none"> identify how sounds are made, associating some of them with something vibrating. recognise that vibrations from sounds travel through a medium to the ear. find patterns between the pitch of a sound and features of the object that produced it. find patterns between the volume of a sound and the strength of the vibrations that produced it. recognise that sounds get fainter as the distance from the sound increases. 	<p>Animals including humans – Biology</p> <ul style="list-style-type: none"> identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. identify that humans and some other animals have skeletons and muscles for support, protection and movement. 	<p>Plants – Biology</p> <ul style="list-style-type: none"> identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant investigate the way in which water is transported within plants explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 	<p>States of matter - Chemistry</p> <ul style="list-style-type: none"> compare and group materials together, according to whether they are solids, liquids or gases. observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees C. identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<p>Rocks – Chemistry</p> <ul style="list-style-type: none"> compare and group together different kinds of rocks on the basis of their appearance and simple physical properties describe in simple terms how fossils are formed when things that have lived are trapped within rock. recognise that soils are made from rocks and organic matter.
<p>LKS2 (B)</p>	<p>Forces and Magnets</p> <ul style="list-style-type: none"> compare how things move on different surfaces. understand that some forces need contact between two objects, but magnetic forces can act at a distance. observe how magnets attract or repel each other and attract some materials and not others. compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials. describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing. 	<p>States of matter – review - Chemistry</p> <ul style="list-style-type: none"> compare and group materials together, according to whether they are solids, liquids or gases. observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees C. identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<p>Electricity – Physics</p> <ul style="list-style-type: none"> identify common appliances that run on electricity. construct simple series electrical circuits, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. 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. recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights within a simple series circuit. recognise some common conductors and insulators, and associate metals with being good conductors. 	<p>Animals including humans – Biology</p> <ul style="list-style-type: none"> construct and interpret a variety of food chains, identifying producers, predators and prey. describe the simple functions of the basic parts of the digestive system in humans. identify the different types of teeth in humans and their simple function. 	<p>Living things and habitats – Biology</p> <ul style="list-style-type: none"> recognise living things can be grouped in a variety of ways. explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. recognise that environments can change and that this sometimes poses dangers to living things. 	<p>Revisit & Review</p>

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<p>UKS2 (A)</p>	<p>Living things and habitats (classification)- Biology</p> <ul style="list-style-type: none"> describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. give reasons for classifying plants and animals based on specific characteristics. 	<p>Electricity – Physics</p> <ul style="list-style-type: none"> associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. use recognised symbols when representing a simple circuit in a diagram. 	<p>Earth & Space – Physics</p> <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. 	<p>Animals including Humans</p> <ul style="list-style-type: none"> identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their body’s function describe the ways in which nutrients and water are transported within animals, including humans. 	<p>Properties and changes of materials – Chemistry</p> <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. 	<p>Revisit & Review</p>
<p>UKS2 (B)</p>	<p>Animals, including humans – Biology</p> <ul style="list-style-type: none"> Can I describe the changes as humans develop to old age? 	<p>Living things and their habitats – Biology</p> <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 give reasons for classifying plants and animals based on specific characteristics. 	<p>Evolution and inheritance – Biology</p> <ul style="list-style-type: none"> recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. identify how animals and plants are adapted to suit their environment indifferent ways and that adaptation may lead to evolution. 	<p>Light – Physics</p> <ul style="list-style-type: none"> recognise that light appears to travel in straight lines. use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. 	<p>Forces – Physics</p> <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 greater effect. 	<p>Revisit & Review</p>