

Easingwold Primary School – Science Curriculum Progression



EYFS

EYFS curriculum needs to be fluid and relevant. Topics will change, books will change yearly. These are the core topics that WILL happen each year.

	Autumn	Spring	Summer
	Autumn Walk – observational drawings (animals and plants seen on the walk) scavenger hunt at Thorpe Perrow Harvest – baking bread (changes of materials/different states of matter), farmers harvesting and planting Planting bulbs	Winter Walk – observational drawings (animals and plants seen on the walk) Solid to liquid– ice liquid to Solid – make ice cubes Pancakes Spring Walk – observational drawings (animals and plants seen on the walk) Chicks – life cycles Cooking with eggs Spring planting in time for summer - sunflowers	Observation of farm animals –Monk Park Farm Summer Walk – observational drawings (animals /minibeasts and plants seen on the walk) Cress/carrot tops

Throughout the year, when the children show an interest they can bake, make play dough, mix powder paints and observe the change in states of matter. Children will have the opportunity throughout the year to make toast – seeing soft bread changing to hard toast.

EYFS Learning and Development Educational Programme
 Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. 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. Enriching and widening children’s vocabulary will support later reading comprehension.

Early Learning Goal
 ELG: The Natural World
 Children at the expected level of development will: -
 Explore the natural world around them, making observations and drawing pictures of animals and plants
 Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter

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Rationale	<p>Explore the changes seen in Autumn – seasonality.</p> <p>Harvest is relevant to the children as it is happening at this time of year.</p> <p>Experience of planting bulbs to enable them to see the changes in Spring.</p>	<p>Explore the changes seen in Winter and Spring – seasonality.</p> <p>Pancake Day and exploring ice is relevant to the children’s experiences.</p> <p>KS1 focus on life cycle of a butterfly, EYFS are learning about chicks as it allows them to experience a range of life cycles and changes.</p> <p>Observing chicks, 1st hand is possible – hatching eggs in the classroom</p>	<p>Explore the changes seen in Summer – seasonality.</p> <p>Cress has been chosen due to the speed it grows and the quick results due to the age of the children.</p> <p>Visiting Monk Park Farm in 1st half term will allow children to make observations of animals, talk about how some things occur and talk about changes.</p>
Skills	<p>Observation</p> <p>Drawing and recording</p> <p>Articulating observations</p> <p>Describe processes and changes</p>		
Knowledge	<p>Can they describe changes they have observed in each season/when baking/animals/plants?</p> <p>Can they name and describe some animals and plants?</p> <p>Do they know what a bulb/seed needs to grow?</p>		
Vocabulary	<p>Autumn, conker, acorn, berry, toadstool</p> <p>Change, solid, liquid, dry, wet, hot, cold</p> <p>Bulb, daffodil, tulip, allium</p>	<p>Winter</p> <p>Spring</p> <p>sunflower</p>	<p>Summer</p>
Books	<p>Little Red Hen (bread/changes)</p> <p>Tree</p>	<p>The Story of Snow</p> <p>Chickens Aren’t the Only Ones</p> <p>Tree</p> <p>Ten Seeds</p>	<p>Tree</p> <p>Farm books</p>
Trips	<p>Local Walks</p> <p>Thorpe Perrow</p>	<p>Local Walks</p>	<p>Local Walks</p> <p>Monk Park Farm</p>

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KS1

	Year A			Year B		
Overview	We feel that as children are taught in Y1/2 mixed classes there is a need to ensure that children can access their Science Curriculum successfully irrespective of whether they join in Year A or B. We want to ensure that there is a clear progression of learning for each topic and opportunity to build and recap, across the two years. Therefore, Materials and Plants will be studied each year in KS1 with a clear progression having being thought through. Throughout KS1, children will be encouraged to be curious and to ask questions about what they notice. Seasonal changes will be observed each term, throughout KS1, so by the end of KS1 children will be familiar with how the seasons vary.					
	Autumn	Spring	Summer	Autumn	Spring	Summer
Unit Rationale	<p><u>Materials</u> This unit builds upon the materials explored in EYFS. Children will begin by naming a variety of everyday materials. They will work scientifically by performing simple tests to enable them to group materials based on their properties.</p>	<p><u>Animals, including Humans</u> Children will learn about themselves as humans and use their senses to compare different textures, sounds and smells. They will have visited a farm in EYFS and seen baby animals, so knowledge will be built upon this topic about baby animals growing into humans.</p>	<p><u>Plants</u> An ideal season for learning about wild plants and trees in their local environment. This unit builds upon their observations of plants in the local environment in EYFS and builds upon knowledge learnt when studying seasonal changes throughout the year.</p> <p><u>Animals</u> Building on making observations of animals in EYFS, and of themselves as humans</p>	<p><u>Materials</u> Children will recap identifying and naming materials. They will have had experience of using different materials to build with / make things in EYFS. Real life scenarios will be given to encourage them to work scientifically e.g., finding the best material for an umbrella or for making a shelf for a book.</p>	<p><u>Living things and their habitats</u> This unit builds upon the experiences children have in EYFS around animals and their habitats. They will have looked at animals that lived in cold and hot places. Children will be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. They will be introduced to simple food chains. The weather will be warmer near the end of spring, so children are more likely to see plants</p>	<p><u>Plants</u> An ideal season for learning about garden plants and trees growing in their local environment. This unit builds upon their observations of plants in the local environment in EYFS and what they have learnt about when studying seasonal changes throughout the year. It also builds on their study of plants in spring term in the local environment.</p>

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			in spring term, children will extend this knowledge to naming, comparing and grouping animals.		and animals in their local environment.	
National Curriculum Statement	<p><u>Materials</u> Identify and name a variety of everyday materials (Y1) Distinguish between an object and the material from which it is made (Y1) Compare and group together a variety of materials on the basis of their simple physical properties (Y1) Find out how the shapes of solid shapes made from some materials can be changed by squashing, bending and stretching (Y2)</p> <p><u>Seasonal changes:</u> (Y1)</p>	<p><u>Animals, including Humans</u> Identify, name basic parts of the human body and say which part is associated with each sense (Y1) Humans have offspring which grow into adults (Y2) Needs of animals for survival (Y2) Importance for humans of exercise, eating the right types of food and hygiene (Y2)</p>	<p><u>Plants</u> Plants in <u>local</u> environment <u>Planting flowers</u> Identify and name wild plants, including deciduous and evergreen trees (Y1) Identify and describe the basic structure of a variety of common flowering plants, including trees (Y1) Compare and contrast familiar plants, identifying and grouping Record how plants have changed over time (Y1) <u>Animals including humans:</u> Animals in the <u>local</u> environment Compare, contrast and group animals – fish, amphibians, reptiles, birds and mammals (Y1) Carnivores, herbivores and omnivores (Y1)</p>	<p><u>Materials</u> Identify and name a variety of everyday materials (Y1) Describe the physical properties of a variety of everyday materials (Y1) Identify and compare the suitability of a variety of everyday materials for particular uses (Y2)</p> <p>Non-stat People who have developed useful new materials: John Dunlop, Charles Macintosh or John McAdam.</p>	<p><u>Living things and their habitats</u> Explore and compare the differences between things that are living, dead, and things that have never been alive (Y2) Habitats and micro habitats Identify and study plants and animals with their <u>local</u> environment Compare animals in familiar habitats with those in less familiar ones – seashore, woodland, ocean, rainforest Simple food chains (Y2)</p>	<p><u>Plants</u> Observe plant growth in <u>local</u> environment throughout the year <u>Planting vegetables</u> Identify and name garden plants, including deciduous and evergreen trees (Y1) Observe and describe how seeds grow into mature plants (Y2) Find out and describe how plants need water, light and a suitable temperature to grow and stage healthy (Y2)</p>

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	Naming deciduous and evergreen trees, observing changes over time (Y1) Observe how bulbs grow into mature plants (Y2)		Animals have offspring which grow into adults (Y2)			
Skills	<p><u>Materials</u> Perform simple tests. Explore and experiment. Sort and classify.</p> <p><u>Seasonal Changes</u> Observe and talk. Using tables and charts. Seasons. Ask and answer questions. Observe closely.</p>	<p><u>Animals, including Humans</u> Compare and contrast. Observe and talk.</p> <p><u>Seasonal Changes</u> Observe and talk. Using tables and charts. Seasons. Ask and answer questions. Observe closely.</p>	<p><u>Plants</u> Observe changes and talk. Compare and contrast.</p> <p><u>Animals including humans:</u> Describe and group. Explain why sorted/grouped.</p> <p><u>Seasonal Changes</u> Observe and talk. Using tables and charts. Seasons. Ask and answer questions. Observe closely.</p>	<p><u>Materials</u> Perform simple tests. Explore and experiment. Identify and compare. Describe and sort. Sort and classify.</p> <p><u>Seasonal Changes</u> Observe and talk. Using tables and charts. Seasons. Ask and answer questions. Observe closely.</p>	<p><u>Living things and their habitats</u> Sort and classify. Use charts. Compare and contrast. Observe and talk. Identify plants. Construct a simple food chain.</p> <p><u>Seasonal Changes</u> Observe and talk. Using tables and charts. Seasons. Ask and answer questions. Observe closely.</p>	<p><u>Plants</u> Observe changes and talk. Compare and contrast. Describe and group. Explain why sorted/grouped.</p> <p><u>Seasonal Changes</u> Observe and talk. Using tables and charts. Seasons. Ask and answer questions. Observe closely.</p>

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<p>Knowledge</p>	<p><u>Materials</u> Name everyday materials. Answer questions about everyday materials.</p> <p><u>Seasonal Changes</u> Name the 4 seasons and describe changes.</p>	<p><u>Animals, including Humans</u> Name the main body parts. Know how to keep healthy.</p> <p><u>Seasonal Changes</u> Name the 4 seasons and describe changes.</p>	<p><u>Plants</u> Name types of plants. Compare plants.</p> <p><u>Animals including humans:</u> Name animals and sort them into groups e.g. amphibians/ reptiles.</p> <p><u>Seasonal Changes</u> Name the 4 seasons and describe changes.</p>	<p><u>Materials</u> Name everyday materials. Answer questions about everyday materials. Say what materials are used for.</p> <p><u>Seasonal Changes</u> Name the 4 seasons and describe changes.</p>	<p><u>Living things and their habitats</u> Name habitats. Know why some animals would live in different habitats.</p> <p><u>Seasonal Changes</u> Name the 4 seasons and describe changes.</p>	<p><u>Plants</u> Name types of plants. Compare plants.</p> <p><u>Seasonal Changes</u> Name the 4 seasons and describe changes.</p>
<p>Vocabulary</p>	<p><u>Materials</u> Properties Hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, not bendy (rigid), waterproof, not waterproof, absorbent, not absorbent, opaque, transparent, squashing, bending, twisting, stretching</p> <p>Materials Wood, metal, wool, plastic, glass, brick, rock, paper, cardboard</p>	<p><u>Animals, including Humans</u> Body parts Head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth</p> <p>Senses Tongue – taste Nose – smell Eyes – vision Skin – touch Ears – hearing</p> <p>Survival Water, food, air, exercise, hygiene, healthy</p>	<p><u>Plants</u> Leaves, flowers, blossom, petals, fruit, roots, bulb, seed, trunk, branches, stem, names of plants, including wild plants and trees</p> <p><u>Animals including humans:</u> Animals, fish, amphibians, reptiles, birds and mammals Carnivores, herbivores and omnivores</p>	<p><u>Materials</u> Properties Hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, not bendy (rigid), waterproof, not waterproof, absorbent, not absorbent, opaque, transparent</p> <p>Materials Wood, metal, wool, plastic, glass, brick, rock, paper, cardboard</p>	<p><u>Living things and their habitats</u> Life processes Living, dead, never alive</p> <p>Habitats Habitat, micro-habitats, seashore, woodland, ocean, rainforest, conditions, hot/warm/cold, dry/damp/wet, bright/shade/dark</p> <p>Food chains herbivore, carnivore, omnivore.</p>	<p><u>Plants</u> Leaves, flowers, blossom, petals, fruit, roots, bulb, seed, trunk, branches, stem, names of plants, including vegetables</p>

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	<p><u>Seasonal Changes</u> Spring, summer, autumn, winter, day, daytime, rain, hail, wind, snow, sleet, fog, warm, hot, sun, cold</p>	<p>Offspring (human) Baby, toddler, child, teenager, adult, grow</p> <p><u>Seasonal Changes</u> Spring, summer, autumn, winter, day, daytime, rain, hail, wind, snow, sleet, fog, warm, hot, sun, cold</p>	<p>Offspring (animals) Egg, chick, chicken (recap EYFS) Egg, caterpillar, pupa, butterfly Spawn, tadpole, frog Lamb, sheep</p> <p><u>Seasonal Changes</u> Spring, summer, autumn, winter, day, daytime, rain, hail, wind, snow, sleet, fog, warm, hot, sun, cold</p>	<p><u>Seasonal Changes</u> Spring, summer, autumn, winter, day, daytime, rain, hail, wind, snow, sleet, fog, warm, hot, sun, cold</p>	<p><u>Seasonal Changes</u> Spring, summer, autumn, winter, day, daytime, rain, hail, wind, snow, sleet, fog, warm, hot, sun, cold</p>	<p><u>Seasonal Changes</u> Spring, summer, autumn, winter, day, daytime, rain, hail, wind, snow, sleet, fog, warm, hot, sun, cold</p>
Trips			Field trips around Easingwold Caterpillar to butterfly kit		Tropical World Leeds	Field trips around Easingwold Spilmans

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LKS2

	Year A			Year B		
Overview	<p>In lower key stage 2 pupils will broaden their scientific view of the world around them. A clear link between Year 3 and 4 objectives has been made and that has determined the order in which the units are being taught in LKS2. We decided that electricity would be visited twice in LKS2, as there is a lot of content with in the unit. Children will learn how to build a circuit in Y3 and Y4. The investigations will differ though (insulators Year A, lamps/switches Year B). Electrical safety will be taught each year. It has been decided that we need to make more use of our local environment and to promote 1st hand observations, so each term, a Science lesson will be planned where children will visit a habitat within their local environment, to study plants and animals and identify how the habitat changes throughout the year. This will build upon the seasonal knowledge learn in KS1.</p>					
	Autumn	Spring	Summer	Autumn	Spring	Summer
Unit Rationale	<p><u>Animals including Humans</u> In KS1, children learnt about eating the right amounts of the right types of food. Now, they will develop their understandings of importance of nutrition for humans, as well as comparing the diets of different animals, including pets and decide ways of grouping them depending on what they eat. Children will be introduced to the main body parts</p>	<p><u>Animals including Humans</u> Pupils have learnt how to group animals in KS1 by what they eat (carnivore, herbivore, and omnivore) and by type (mammal, bird, amphibian, reptile, fish). Now they will learn to identify and group animals with or without skeletons, widening their skills in sorting and classifying, based on their growing knowledge. They will build on knowledge of basic body parts learnt</p>	<p><u>Forces and Magnets</u> Building on the scientific enquiry skills learnt throughout the year, they will now develop their scientific enquiry skills further. There will be opportunity to plan and carry out and review their own investigations.</p> <p><u>Electricity</u> (Y4) Children will learn that electrical items in our homes are powered from mains electricity</p>	<p><u>Rocks</u> Building on from learning about a wide range of materials, including naming 'rock/stone' in KS1, children will explore different types of rocks and soils, including those found in their local environment such as in buildings and gravestones, where they will be able to look at how they have changed over time.</p> <p><u>States of Matter</u> This unit naturally complements having</p>	<p><u>Sound</u> (Y4) Building upon the knowledge already learnt about parts of the human body and senses in KS1, children will learn in depth about how sounds are made and how they travel to the ear. Scientific enquiry skills will be developed further when children investigate patterns and look at which materials insulate sounds. Pupils will be able to bring to this unit, their existing knowledge about</p>	<p><u>Plants</u> Plants are studied again, building on the knowledge learnt in KS1. Children will be introduced to the relationship between structure and function: the idea that every part has a job to do. They will focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction.</p>

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	<p>associated with the digestive system and they will find out how different parts of the body have special functions.</p> <p><u>Light</u> (Y3) Through their observations of seasonal changes throughout KS1, children will already know that the amount of daylight varies throughout the seasons. They should also know that it is not safe to look directly at the sun and this will be reinforced during this unit. 2nd half of the autumn term is an ideal time to study light as they will be experiencing more contrast between light/dark at this time.</p>	<p>in KS1, by being introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions.</p>	<p>(including alternative sources of this) or batteries and identify some of these appliances and devices. They will learn how to construct a simple circuit, building on their competence if already having studied Year B and will use this to be introduced to the terms conductors and insulators. They will learn that metals are conductors of electricity.</p>	<p>just studied rocks as children will explore everyday materials and describe their state of matter, solid, liquid or gas. Scientific enquiry skills will be further developed when children study evaporation and temperature change. NOTE: Avoid using materials where heating is associated with chemical change. E.g., baking/burning</p>	<p>materials from KS1 and so far in LKS2. <u>Electricity</u> In this unit, children will learn how to construct a simple circuit, building on their competence if already having studied Year A, if revisiting the topic. They will use the components of a circuit to explore lamps, buzzers and switches.</p>	<p><u>Living Things and their Habitats</u> (Y4) In KS1 children learnt to group things that were living, dead and never alive. They also found out how animals and plants depended on each other and were able to classify animals in simple groups – birds, reptiles etc. Children will explore what living things are found locally, human impact, then compare what has been found locally to the wider world. They will classify using simple guides and keys.</p>
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<p>National Curriculum Statement</p>	<p><u>Animals including Humans</u> Nutrition (Y3) Identify that animals, including humans, need the right types and amounts of nutrition and that they cannot make their own food; they get nutrition from what they eat</p> <p>Digestive system (Y4) Describe the simple functions of the basic parts of the digestive system in humans.</p> <p><u>Light</u> (Y3) 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</p>	<p><u>Animals including Humans</u> Skeletons and muscles (Y3) Identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>Teeth (Y4) Identify the different types of teeth in humans and their simple functions</p> <p>Food Chains (Y4) Construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p><u>Forces and Magnets</u> (Y3) Compare how things move on different surfaces Notice that some forces need contact between 2 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 2 poles Predict whether 2 magnets will attract or repel each other, depending on which poles are facing</p>	<p><u>Rocks</u> (Y3) Rocks, fossils and soil (Y3) 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> <p><u>States of Matter</u> (Y4) 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 Celsius (°C) Identify the part played by evaporation and</p>	<p><u>Sound</u> (Y4) 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 source increases</p> <p><u>Electricity</u> (Y4) Circuits Construct a simple series electrical circuit, 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</p>	<p><u>Plants</u> (Y3) Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>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</p> <p>Investigate the way in which water is transported within plants</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p> <p><u>Living Things and their Habitats</u> (Y4) Recognise that living things can be grouped in a variety of ways</p>
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	<p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>Find patterns in the way that the size of shadows change</p>		<p>Electricity (Y4)</p> <p>Electricity – different ways mains electricity can be provided in the home (mains/batteries)</p> <p>Identify common appliances that run on electricity</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors</p>	<p>condensation in the water cycle and associate the rate of evaporation with temperature</p>	<p>whether or not the lamp is part of a complete loop with a battery</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p>	<p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things</p>
	<p>Habitat Year A: Millfield</p> <p>Pupils should use the local environment throughout the year. Should identify how a habitat changes throughout the year</p>			<p>Habitat Year B: Hedgerow near school (off Thirsk Road)</p>		

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<p>Skills</p>	<p><u>Animals including Humans</u> Gather and present data.</p> <p><u>Light</u> (Y3) Explore light. Answer questions and discuss findings. Measure shadows. Look for patterns. Record findings.</p>	<p><u>Animals including Humans</u> Compare and contrast diets of different animals. Naming animals. Research / find out Identify and group (animals) depending on what they eat or by type of skeleton.</p>	<p><u>Forces and Magnets</u> (Y3) Compare and contrast. Describe. Fair test skills. Explore and sort. Seek patterns.</p> <p><u>Electricity</u> (Y4) Construct circuits. Draw circuits. Observe patterns.</p>	<p><u>Rocks</u> Observe and explore rocks. Identify and classify. How to use a hands lens/microscope.</p> <p><u>States of Matter</u> Compare and group/classify materials. Observe materials Identify (water cycle). Measure temperature Research.</p>	<p><u>Sound</u> (Y4) Explore and identify sounds. Find patterns. Investigate.</p> <p><u>Electricity</u> (Y4) Construct circuits. Draw circuits. Observe patterns.</p>	<p><u>Plants</u> (Y3) Observe and compare. Explain. Answer questions.</p> <p><u>Living Things and their Habitats</u> (Y4) Identify and study. Group animals. Using and making simple guides. Observe and question.</p>
<p>Knowledge</p>	<p><u>Animals including Humans</u> Importance of nutrition.</p> <p><u>Light</u> (Y3) Know what light is. Safety of light.</p>	<p><u>Animals including Humans</u> Label main body parts associated with skeletons and muscles. Know the different functions of body parts and muscles. Describe functions of human digestive system. Name types of teeth and functions. Be able to explain a food chain, identifying producers, predators and prey.</p>	<p><u>Forces and Magnets</u> (Y3) Perform a scientific test. Observe how magnets attract and repel each other. Describe magnets having 2 poles.</p> <p><u>Electricity</u> (Y4) Know what appliances use mains electricity. Know how to be safe around electricity. Know where electricity comes from. How to make a circuit.</p>	<p><u>Rocks</u> Say what a fossil is Describe how they are formed.</p> <p><u>States of Matter</u> Describe solids/liquids gases. Explain the water cycle.</p>	<p><u>Sound</u> (Y4) Know how sounds are made. Learn facts about the ear. How to carry out a fair test.</p> <p><u>Electricity</u> (Y4) Know where electricity comes from. How to make a circuit. Know how to be safe around electricity.</p>	<p><u>Plants</u> (Y3) Relationship between structure and function (each part of the plant has a job to do). Name plants. Name parts of a plant.</p> <p><u>Living Things and their Habitats</u> (Y4) Explain what a habitat is. Name animal groups. Describe human impact on environments.</p>

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Vocabulary	<p><u>Animals including Humans</u> Nutrition, vitamins, minerals, fat, protein, carbohydrates, health</p> <p><u>Light</u> (Y3) Light, see, dark, reflect, surface, natural, star, Sun, Moon, shadow, blocked, solid, artificial, torch, candle, lamp, sunlight, dangerous, protect eyes</p>	<p><u>Animals including Humans</u> Bones, muscles, body parts, mouth, tongue, teeth, oesophagus, stomach, small and large intestine</p>	<p><u>Forces and Magnets</u> (Y3) Magnet, magnetic, forces, poles, attract, repel</p> <p><u>Electricity</u> (Y4) Appliances, electricity, electrical circuit, cell, wire, bulb, buzzer, danger, electrical safety, sign, insulators, wood, rubber, plastic, glass, conductors, metal, water, switch, open, closed</p>	<p><u>Rocks</u> Rocks, fossils (sedimentary rock) crystals, organic matter Uses – buildings, grave stones</p> <p><u>States of Matter</u> States of matter Solids, liquids, gases, melt, freeze</p> <p><u>Changing State</u> Chocolate, butter, cream, heated, heat, cooled, cool, degrees Celsius (°C), thermometer</p> <p><u>Water cycle</u> Evaporate, evaporation, condense, condensation, water vapour</p>	<p><u>Sound</u> (Y4) Air, sound, pitch, volume, loud, louder, faint, fainter, vibrate, vibration, vibrating, insulate, ear, ear drum</p> <p><u>Electricity</u> (Y4) Appliances, electricity, electrical circuit, cell, wire, bulb, buzzer, danger, electrical safety, sign, insulators, wood, rubber, plastic, glass, conductors, metal, water, switch, open, closed</p>	<p><u>Plants</u> (Y3) Root, stem, seed, leaf, air, light, water, nutrients, soil, reproduction, transportation, dispersal, pollination, flower</p> <p><u>Living Things and their Habitats</u> (Y4) Animals <u>Vertebrates</u> fish, amphibians, reptiles, birds, mammals, <u>Invertebrates</u> Snails, slugs, worms, spiders, insects <u>Human impact</u> Positive - nature reserves, ecologically planned parks, garden ponds <u>Negative</u> - population, development, litter, deforestation pollution, deforestation, litter, environment</p>
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Trips	Visit from school nurse – nutrition	Visit from a dentist	Visit to Huntcliffe windfarm and/or Hartlepool Power Station	Field trip looking at how rock is used for buildings/gravestones and how they have changed (erosion). Investigate soils found in local environment.		Field trips around Easingwold
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UKS2

	Year A			Year B		
Overview	<p>In upper key stage 2, pupils will develop a deeper understanding of a wide range of scientific ideas. They will through explore and talking about their ideas; ask their own questions about scientific phenomena; and analyse functions, relationships and interactions more systematically. They will encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They will begin to recognise that scientific ideas change and develop over time. They will select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils will conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.</p> <p>The Year 5, Animals including Humans, will be studied both years as it links to the work on puberty.</p>					
	Autumn	Spring	Summer	Autumn	Spring	Summer
Unit Rationale	<p><u>Animals including Humans (Y5)</u> Pupils will draw a timeline to indicate stages in the growth and development of humans, building on their knowledge from KS1 that animals have offspring that grown into adults. They will learn about the changes experienced in puberty. They will research the gestation periods of other animals and</p>	<p><u>Properties and Changes of Materials (Y5)</u> Pupils will build a more systematic understanding of materials by exploring and comparing the properties of a broad range of materials, including relating these to what they learnt about magnetism in year 3 and about electricity in year 4. They will explore reversible changes, including evaporating, filtering, sieving,</p>	<p><u>Forces (Y5)</u> Pupils will explore falling objects and raise questions about the effects of air resistance. They will explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall. They should experience forces that make things begin to move, get faster or slow down. Pupils will explore the effects of friction on movement and find out</p>	<p><u>Animals including Humans (Y5)</u> Pupils will draw a timeline to indicate stages in the growth and development of humans, building on their knowledge from KS1 that animals have offspring that grown into adults. They will learn about the changes experienced in puberty. They will research the gestation periods of other animals and comparing them with humans.</p>	<p><u>Animals including Humans (Y6)</u> Pupils will build on their 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. Pupils will learn how to keep their bodies</p>	<p><u>Living things and their habitats (Y6)</u> Pupils will build on their learning about grouping living things in year 4 by looking at the classification system in more detail. They will be introduced to the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Through direct observations where possible, they will classify animals into commonly found</p>



	<p>comparing them with humans.</p> <p><u>Living things and their habitats (Y5)</u></p> <p>Pupils will study and raise questions about their local environment throughout the year. They will observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. They will find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall.</p> <p>Pupils will find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual</p>	<p>melting and dissolving, recognising that melting and dissolving are different processes. Pupils will explore changes that are difficult to reverse, for example, burning, rusting and other reactions, for example, vinegar with bicarbonate of soda. They will find out about how chemists create new materials, for example, Spencer Silver, who invented the glue for sticky notes or Ruth Benerito, who invented wrinkle-free cotton.</p>	<p>how it slows or stops moving objects, for example, by observing the effects of a brake on a bicycle wheel. Pupils will explore the effects of levers, pulleys and simple machines on movement.</p> <p>Pupils will find out how scientists, for example, Galileo Galilei and Isaac Newton helped to develop the theory of gravitation.</p>	<p><u>Light</u> (Y6) Pupils will build on the work on light in year 3, exploring the way that light behaves, including light sources, reflection and shadows. They will talk about what happens and make predictions.</p> <p><u>Earth and Space</u> (Y5) Pupils will be introduced to a model of the sun and Earth that enables them to explain day and night. Pupils will learn that the sun is a star at the centre of our solar system and that it has 8 planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a ‘dwarf planet’ in 2006). They will be taught that a moon is a celestial body that orbits a planet (Earth has 1 moon; Jupiter has 4 large moons and numerous smaller ones). Pupils will be reminded that it is not safe to look</p>	<p>healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body.</p>	<p>invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). They will discuss reasons why living things are placed in one group and not another. Pupils will find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.</p> <p><u>Evolution and Inheritance</u> (Y6) Building on what they learned about fossils in the topic on rocks in year 3, pupils 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</p>
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	<p>reproduction in animals.</p> <p>Electricity (Y6)</p> <p>Building on their work in year 4, pupils 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. Pupils will learn only about series circuits, not parallel circuits. Pupils will be taught to take the necessary precautions for working safely with electricity.</p>			<p>directly at the sun, even when wearing dark glasses.</p> <p>Pupils will find out about the way that ideas about the solar system have developed, understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as Ptolemy, Alhazen and Copernicus.</p>		<p>when, for example, labradors are crossed with poodles. They 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. Pupils 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.</p>
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<p>National Curriculum Statement</p>	<p><u>Animals including Humans (Y5)</u> Describe the changes as humans develop to old age</p> <p><u>Living things and their habitats (Y5)</u> 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</p> <p><u>Electricity (Y6)</u> 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</p>	<p><u>Properties and Changes of Materials (Y5)</u> 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</p>	<p><u>Forces (Y5)</u> 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</p>	<p><u>Animals including Humans (Y5)</u> Describe the changes as humans develop to old age</p> <p><u>Light (Y6)</u> 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> <p><u>Earth and Space (Y5)</u> Describe the movement of the Earth and other</p>	<p><u>Animals including Humans (Y6)</u> 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 bodies function Describe the ways in which nutrients and water are transported within animals, including humans</p>	<p><u>Living things and their habitats (Y6)</u> 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> <p><u>Evolution and Inheritance (Y6)</u> 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</p>
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	Use recognised symbols when representing a simple circuit in a diagram	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		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		to suit their environment in different ways and that adaptation may lead to evolution
Skills	<p><u>Animals including Humans (Y5)</u> Researching and comparing. Recording length and mass. Research the gestation periods of other animals and compare to humans.</p> <p><u>Living things and their habitats (Y5)</u> Ask questions. Observe and compare life cycles.</p>	<p><u>Properties and Changes of Materials (Y5)</u> Explore and compare properties. Give reasons. Systematically test materials.</p>	<p><u>Forces (Y5)</u> Carry out fair tests. Design and make products that use levels, pulleys, gears and/or springs.</p>	<p><u>Animals including Humans (Y5)</u> Researching and comparing. Recording length and mass. Research the gestation periods of other animals and compare to humans.</p> <p><u>Light (Y6)</u> Make predictions</p>	<p><u>Animals including Humans (Y6)</u> Explore and answer questions about the circulatory system. Research about the relationship between diet, exercise, drugs, lifestyle and health.</p>	<p><u>Living things and their habitats (Y6)</u> Use classification systems and keys. Research animals and plants from a broad range of other habitats. <u>Evolution and Inheritance (Y6)</u> Observe and ask questions. Compare living things. Analyse advantages and disadvantages of specific adaptations.</p>

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	<p>Observe changes in an animal over time.</p> <p>Electricity (Y6) Find answers to questions by systematically identifying the effect of changing one component of a circuit at a time.</p>			<p>Earth and Space (Y5) Compare time of day at different places on Earth. Create models of solar system. Construct clocks or sundials, calibrated to show midday and start and end of school day.</p>		
Knowledge	<p>Animals including Humans (Y5) To know the stages of growth and development in humans.</p> <p>Living things and their habitats (Y5) To know about the life cycles of different animals and how they reproduce.</p> <p>Electricity (Y6) To know how to construct circuits successfully. To represent a simple circuit using recognised symbols. Understand safety precautions.</p>	<p>Properties and Changes of Materials (Y5) Be able to group materials based on their properties. Explain how some changes result in new materials. Find out how chemists create new materials.</p>	<p>Forces (Y5) Know how the force of gravity works. Understand the effects of air resistance, water resistance and friction.</p>	<p>Animals including Humans (Y5) Know the stages of growth and development in humans.</p> <p>Light (Y6) Explain how light behaves and be able to talk about what happens when comparing the relationship between light sources, objects and shadows.</p>	<p>Animals including Humans (Y6) Know about main body parts and internal organs (skeletal, digestive, muscular), building on knowledge from LKS2. Know about how to keep their bodies healthy.</p>	<p>Living things and their habitats (Y6) Know how living things can be grouped, building on knowledge from LKS2 that broad groups can be sub-divided. Know reasons why living things are placed in one group and not another. Evolution and Inheritance (Y6) Know how living things have changed over time. Know that parents pass characteristics to their offspring.</p>

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				<p><u>Earth and Space (Y5)</u></p> <p>To understand sun safety.</p> <p>Explain day and night.</p> <p>Understand that the Sun is a star and that it has 8 planets.</p> <p>Understand a moon is a celestial body that orbits a planet.</p>		<p>Know that over time, there can be variation in offspring which make them more/less likely to survive in particular environments.</p>
Vocabulary	<p><u>Animals including Humans (Y5)</u></p> <p>Human development, baby, toddler, child, teenager, adult, puberty, gestation, length, mass, grows, grow, growing</p> <p><u>Living things and their habitats (Y5)</u></p> <p>Life cycles Mammal, amphibian, insect, bird</p> <p>Life process of reproduction Plant, animal</p> <p>Animal Naturalist David Attenborough</p> <p>Animal Behaviourists</p>	<p><u>Properties and Changes of Materials (Y5)</u></p> <p>Properties Hardness, solubility, transparency, conductive (electrical and thermal), responsive to magnets</p> <p>Dissolve Liquid, solution, separate, separating</p> <p>Solids, liquids, gases Filtering, sieving, evaporating</p> <p>Reversible changes Dissolving, mixing, evaporation, filtering, sieving, melting</p> <p>Irreversible changes New material, burning, rusting</p>	<p><u>Forces (Y5)</u></p> <p>Gravity, air resistance, water resistance, friction, surface, force, effect, move, accelerate, decelerate, stop, change, direction, brake, mechanism, pulley, gear, spring, theory of gravitation, Galileo, Galilei, Isaac Newton</p>	<p><u>Animals including Humans (Y5)</u></p> <p>Human development, baby, toddler, child, teenager, adult, puberty, gestation, length, mass, grows, grow, growing</p> <p><u>Light (Y6)</u></p> <p>Light, light sources, travels, straight, reflect, reflection, light source, object, shadows, mirrors, periscope, rainbow, filters</p> <p><u>Earth and Space (Y5)</u></p> <p>Earth, Sun, Moon, planets, star, solar system, Mercury,</p>	<p><u>Animals including Humans (Y6)</u></p> <p>Internal organs, heart, lungs, liver, kidneys, brain, skeleton, skeletal, muscle, muscular, digest, digestion, digestive, circulatory system, blood vessels, blood, impact, diet, exercise, drugs, lifestyle, nutrients, water, damage, drugs, alcohol, substances</p>	<p><u>Living things and their habitats (Y6)</u></p> <p>micro-organisms, plants, animal classification, classify, animals, invertebrates, insects, spiders, snails, worms, vertebrates, fish, amphibians, reptiles, birds, mammals, scientists, Carl Linnaeus</p> <p><u>Evolution and Inheritance (Y6)</u></p> <p>Living things, change, fossils, offspring, vary, not identical, characteristics, variation, evolution, adaption, inherit, inheritance, Charles</p>

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	<p>Jane Goodall</p> <p>Reproduction Plants: sexual, asexual Animals: sexual</p> <p>Lifecycles around the world Rainforests, ocean, desert</p> <p>Prehistoric, similarities, differences</p> <p>Electricity (Y6) Voltage, brightness, volume, switches – on/off, danger, series circuit, working safely with electricity, circuit diagram, switch, bulb, buzzer, motor, symbols, electrical safety sign</p>	<p>Magnetism Vocab (Y3) Electricity vocab (Y4)</p> <p>Chemists Spencer Silver, Ruth Benerito, chemical</p> <p>Quantitative Measurements Conductivity, insulation</p>		<p>Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, dwarf planet,</p> <p>Movement Rotate, orbit, axis</p> <p>Celestial body Spherical, sphere, day, night, light, heat, eclipse, satellite, universe, solar</p> <p>Astronomer Ptolemy Alhazen Copernicus</p> <p>shadow clock, sundial</p>		<p>Darwin, Alfred Wallace, adapt, environment, extreme conditions, advantageous v disadvantageous, Palaeontologists - Mary Anning</p>
<p>Trips</p>		<p>Local visits – soil samples</p>		<p>Mobile planetarium</p>		<p>Fossil collecting North Yorkshire coast/compare coastal habitat to local habitat</p>