

Curriculum overview Science

FS1					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<u>All About Me</u> The season of Autumn, leaves changing colour and falling from trees. Animals begin to prepare for colder weather and hibernation e.g. squirrels bury nuts in the ground. Temperatures getting colder as winter approaches.	<u>Journeys</u> <u>Ernest Shackleton</u> Plan a journey to the local park, or around the school grounds what would we see? What grows in our school, what grows in the park? People journey around the world to see different places and environments; Ernest Shackleton and his journey to the South Pole. Contrasting environments; journeys to cold places, what would we need to	<u>Dinosaurs</u> We know about dinosaurs because people have found fossils in the ground. Rocks can sometimes contain fossils that paleontologists can study.	<u>Growing and changing</u> Plants need water and light to grow (this will be built upon throughout the curriculum) Grow plants in nursery and observe plants growing e.g. sunflowers, cress etc. Talk about how the plants change as they grow. Make observations of the world around them, describe things they have seen e.g. plants, animals, natural objects and manmade objects. Recognise the season of Spring and notice new plants growing. Animals grow and change in many different ways.	<u>Animals and their Babies</u> All animals have babies, some look like their parents, but some do not. Recognise and use animals names e.g. cow/calf, chicken/chick. Polar habitats are under threat as climate changes.	<u>Heroes and Adventures</u> Ice investigation-(link to South Pole – Shackleton). Ice changes from a solid to a liquid when it melts. Boats in water – explore floating and sinking. How many pennies can my boat hold? Contrasting landscapes; what does a lunar landscape look like? What might we see if we walked on the moon?

	take with us? Look at some recent memorable journeys, e.g, Perseverance landing on Mars. (Children will learn more about space in Reception)				
<u>FS2</u>					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<u>All About Me</u>	<u>Transport: Past and Present</u>	<u>Space</u>	<u>Growing and Changing</u>	<u>Kings and Queens</u>	<u>Stories from the Past</u>
The human body: Facial features, body parts, the senses Seasons of the year; Autumn. Deciduous and evergreen trees. Observing leaves using magnifying glasses, leaves changing colour.	Forces: push, pull, twist Air transport Water transport Seasons of the year: Winter. Animal hibernation, why do some animals hibernate? How do other animals survive winter?	Our planet Earth, land and sea, plants and animals, weather, gravity. The moon, the sun, the planets in our solar system, space travel, astronauts. Seasons of the year: Spring. The first signs of spring;	Growing and changing; how people change as they grow, how animals change as they grow. Life cycles of a butterfly and/or frog. Identify and draw the following animals and their babies including but not limited to:	Seasons of the Year: Summer. Signs of summer; flowers, warmer days, light evenings, butterflies, bees, birds. Design a garden for the Queen; what could we grow? What would we include? Sketch some ideas and write about the design.	Seasons of the Year: Summer. How we stay safe in the sun; sunscreen, hats, sunglasses. Safety around water. Changing state of matter; Why do our ice lollies melt?

	Transport in the winter; snow ploughs, gritting roads, snow tyres. Changing state of matter; frost and ice- looking closely at ice, what happens when it warms? Why can we see our breath when it is cold?	snowdrops, cherry blossom, buds and flowers, birds nesting, bees, lighter evenings.	Sheep and Lamb Cows and Calf Horse and foal Butterfly and Caterpillar Frog and tadpole Dog and puppy Cat and kitten Plants; how they grow from seeds and bulbs. What plants need to grow. Identify parts of plants including roots, stem and leaves. Identify trees and plants growing locally on the school grounds or in local parks. Draw pictures of local plants.		
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Year 1

Autumn 1 <u>Human Body</u> <u>Helen Keller</u> <u>Lessons:</u> 1. Introduction to Our Body and Our Senses 2. Eyes and Sight	Autumn 2 <u>Animals and their needs</u> <u>Lessons:</u> 1. Amazing Animals (Introduction to Animals) 2. Grouping animals: Fish, amphibians,	Spring 1 <u>Seasons and Weather</u> <u>Lessons:</u> 1. The four seasons 2. Tools to record the weather 3. Using a graph to show information about the weather	Spring 2 <u>Taking care of the earth</u> <u>Lessons:</u> 1. Taking Care of the Earth 2. Earth's Natural Resources 3. Logging 4. Pollution	Summer 1 <u>Plants</u> <u>Lessons:</u> 1. What plants need 2. Parts of plants 3. Seeds 4. Deciduous and evergreen plants 5. Plants we eat	Summer 2 <u>Materials and Magnets</u> <u>Lessons:</u> 1. Everyday Materials 2. Properties of Materials 3. Uses of Materials 4. Magnets 5. Investigation
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3. Ears and Hearing 4. Touch, taste and smell 5. Understanding Sensory Impairment	reptiles, birds and mammals 3. Grouping animals: carnivores, herbivores and omnivores 4. Animals as pets 5. Describing animals	4. Clouds and what they tell us: cirrus, cumulus and stratus 5. Weather forecasting 6. Extra lesson: Dangerous weather around the world	5. Recycling		
Naming parts of the body, the five senses and associated body parts, understanding sensory impairment. <u>Knowledge goals</u> <i>We have five senses: sight, hearing, touch (feeling), taste, smell.</i> <i>Our eyes use light that enters the eye to enable us to see. Light does not come out of the eye. Parts of the eye and what their purpose is. (e.g. the eyelashes, eyelids and cornea protect the rest of the eye). Sometimes people need help to see and can use glasses,</i>	Living things, naming animals, grouping animals, describing animals, how plants and animals obtain food, offspring, caring for animal babies, caring for pets. <u>Knowledge goals</u> <i>There are many different types of animals. Some animals live in water, some live on land, some fly in the sky. Scientists group animals according to their features.</i>	The four seasons, tools to record the weather, daily weather and weather forecasts, weather symbols, weather around the world, floods and hurricanes. <u>Knowledge Goals</u> <i>Our four seasons are spring, summer, autumn and winter. Colder weather comes in autumn and winter. Warmer weather comes in spring and summer. Our days of sunlight are longest in the summer and shortest in the winter. A rain gauge measures how much rain has fallen. A</i>	The Earth's natural resources, conservation of natural resources, logging, recycling, how pollution is caused and can be prevented. <u>Knowledge Goals</u> <i>Humans do things that can damage the Earth. People are causing pollution that is damaging our earth. When forests are cut down the wild animals' environment is lost Resources are the things in the world we can make use of. natural resource is something that is found in nature that people</i>	What plants need to grow, the parts and functions of plants, food production, flowers and seeds, deciduous and evergreen. <u>Knowledge goals</u> <i>Plants need warmth, light and water to grow. Plants grow from seeds. If seeds do not have warmth, light and water, they may not grow into healthy plants. The roots of a plant act as an anchor, fixing the plant into the ground. The stem of a plant grows above the ground. The leaves and flowers grow from it. A plant's leaves absorb sunlight and turn it into energy that the plant uses to grow. Plants spread their seeds in order to make new plants. When plants make seeds to make new plants,</i>	Classification of materials, magnets, magnetic attraction. <u>Knowledge goals</u> <i>Objects all around us are made from types of materials. Some everyday materials that objects are made from include: wood, plastic, glass and metal. Each material can be used to make many different things, for example plastic can be made into cups, plates, toys, chairs. Properties of materials are things we can measure, see or feel. We can describe and compare properties of different materials. Materials have different properties that make them useful for different tasks. Materials have different properties that make them useful for different tasks. When designing or making objects, materials are chosen for</i>

contact lenses, telescopes, microscopes. Sounds travel through our ears to send messages to our brain. Sounds can be very different, some loud and some quiet. Some people need help to hear and some people cannot hear at all. Our senses help us to understand the world around us. Our senses can warn us of danger. Our senses send messages to our brains. Some people have problems with their senses. Helen Keller was taught to read, write and speak even though she was deaf and blind. Helen Keller helped other people who were also deaf and blind.	Animals can be grouped according to their features. Amphibians are cold blooded animals that live in water and also on land. They lay eggs underwater. Mammals are warm blooded animals give birth to live young. Animals that eat other animals are called carnivores. Animals that eat plants are called herbivores. Animals that eat both plants and other animals are called omnivores. Pets need food, space, shelter, medicine and company. Some animals are suitable for keeping as pets but some are not. Animals that are not pets are known as wild animals. We can use scientific words to describe animals.	weather vane shows which way the wind is blowing. A thermometer measures the temperature. Data is a collection of facts. We can present data using a graph. We can gather information from a graph which helps us to understand the weather. Clouds are made of tiny droplets of water that float in the air. Dark clouds are carrying more water. Cirrus clouds are white, thin and wispy. Cumulus clouds are white and fluffy like cotton wool. Stratus clouds are grey and cover the whole sky. A weather forecast tells us what the weather will be in the next few days. Scientists study the weather and use computers to make forecasts. (A scientist who studies the	can use. A manufactured resource is something people have created to use. Some natural resources cannot be easily replaced, they are non-renewable. Trees are a natural resource that people can use for paper, furniture and other uses. Logging means cutting down trees. Sometimes logging can cause damage to the environment. Pollution occurs when an environment is damaged by waste. Pollution is caused by things that people do, for example driving a car. We can reduce the amount of pollution we create. When something used is reused for a new purpose, it is recycled. We recycle items to reduce waste. The following things that we may find in our homes can be recycled: newspapers,	we call this reproducing. Plants must spread their seeds to help them grow into new plants. Evergreen trees keep their leaves all year around. Deciduous trees drop their leaves during autumn time and grow fresh leaves in spring time. Oak trees are deciduous and fir trees are evergreen. We eat different parts of plants including the roots, stem, leaves and sometimes the flowers. Some plants are dangerous to eat and would make us ill. We need a variety of fruit and vegetables in our diet.	their properties. Some materials will be better suited to certain purposes than others. Certain materials are attracted to magnets. We cannot see the force of magnetism. Magnets can be useful, for example in toys or around the home. An investigation helps us to find out the best answer. When we investigate something, we need to make sure our investigation is fair. Scientists investigate things carefully and fairly to find answers to their questions.
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	<i>Scientists observe carefully and draw detailed diagrams</i> <i>Fish have gills to help them breathe, fins to help them swim and scales to protect their bodies.</i>	<i>weather is called a meteorologist.)</i> <i>Weather forecasts help people to be prepared for different kinds of weather.</i> <i>Some weather can be very dangerous. A flood is an overflow of water. A hurricane is a storm with very strong winds.</i>	<i>letters, magazines, plastic bottles, drinks cans, food tins, cardboard boxes.</i>		
National Curriculum					
identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	- 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	- observe changes across the 4 seasons - observe and describe weather associated with the seasons and how day length varies	This unit is included in our curriculum in addition to the content of the National Curriculum. Children will build on the knowledge from this unit in other units across the curriculum, particularly in geography in KS2. This unit is designed to give children foundational knowledge about how people interact with the world.	- 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.	- 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

	carnivores, herbivores and omnivores describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)				basis of their simple physical properties
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Year 2

Autumn 1 <u>Human Body</u> Louis Pasteur Edward Jenner <u>Lessons:</u> 1. Animals, including humans, survival and offspring	Autumn 2 <u>Living things in their Environments</u> <u>Lessons:</u> 1. Dead or Alive 2. What is a habitat?	Spring 1 <u>Electricity</u> <u>Lessons:</u> 1. Introduction to Electricity 2. Safety 3. Exploring Circuits (A)	Spring 2 <u>Plants</u> <u>Lessons:</u> 1. Plants around us 2. Seeds and bulbs 3. Comparative test 1 4. Comparative test 2 5. Food and Farming	Summer 1 <u>Materials and Matter</u> <u>Lessons:</u> 1. Materials and their uses 2. George de Mestral and Velcro 3. Matter under the microscope 4. Changing Solid Objects	Summer 2 <u>Astronomy</u> <u>Lessons:</u> 1. Introduction to Astronomy 2. Model the Solar System 3. Orbit and Rotation 4. The Moon and its Phases 5. Constellations
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2. The Skeletal System, The Muscular System and Exercise 3. The Digestive system and Healthy Eating 4. The Circulatory system 5. Germs, diseases and preventing illness	3. Rainforest and Desert habitats 4. Meadow habitats 5. Underground habitats	4. Exploring Circuits (B) 5. Investigating Conductive and non-conductive materials		5. Liquids and their properties	
The skeletal and muscular systems, exercise, digestive system and healthy eating, circulatory system, preventing illness, germs and disease, animals and their offspring. <u>Knowledge goals</u> Animals need water, food and air to survive. When water, food or air is scarce, humans and animals suffer. When animals, including humans, have water, food and air, they	Habitats: rainforest, desert, meadow and underground habitats. Food chains, oceans and undersea habitats, deep ocean habitats and habitat destruction and damage. <u>Knowledge goals</u> Living things move, grow, need air and reproduce. Dead things were once alive, but are no longer alive.	Circuits, conductive and non-conductive materials, safety rules. <u>Knowledge goals</u> Many things around us use electricity to make them work. Electricity is an energy that we can store or use to make things work. Electricity can be very useful but can also be dangerous. Electricity can be very dangerous. We must use electricity safely to make sure it is not	Seeds and bulbs, plants and water, light, temperature, healthy plants. <u>Knowledge goals</u> There are many different kinds of plants. Around my school I can find plants such as: ... Around my school I can find trees such as:... When a plant has no water, it cannot grow well. When a plant has no light, it cannot grow well. Plants often grow well in the Spring as the temperatures get	Comparing materials, changing materials, concepts of atoms, matter, solids, liquids, gases, measurements. <u>Knowledge goals</u> Everyday materials include plastic, fabric, wood, paper, metal and glass. Every material has its own properties, these can include being hard, soft, opaque, shiny, bendy. Materials are used for a purpose depending on their properties. Inventors need to think about the best materials to use for their inventions. Scientists and engineers can work for many years on a	Our solar system, orbit and rotation, sun, moon, planets, stars, constellations. <u>Knowledge goals</u> The Sun is a star at the centre of our solar system. There are eight planets in our solar system. The planets are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Planets travel around the Sun. We call this journey an orbit. As the planets orbit the Sun, they also spin around. We call this rotation. Night and day occur due to the Earth rotating. The Moon orbits the earth. The moon reflects the light of the sun. As the Moon's position

can have offspring that grow into adults. Animals need water, food and air to survive Our skeleton is made up of bones inside our body. Our muscles help us to move. Exercise is an important way of keeping our body healthy. Digestion means breaking down the food we eat. Our bodies take things we need out of the food we eat. It is important to feed our bodies with healthy foods. The heart is a muscle inside our body. The heart pumps blood around our body. Our blood circulates around our body, which means it goes around and around. We need to take care of our bodies through exercising, keeping clean, eating a balanced diet and resting. Germs can	Inanimate things have never lived; for example a rock. A habitat is the name given to a place where plants or animals live. In a woodland habitat we might see: oak trees, ferns, mosses, beetles, foxes and squirrels. In a desert habitat we might see: camels, scorpions, rattlesnakes, cacti and tumbleweed. Some animals and plants that might be found in rainforests are banana trees, orchids, monkeys and parrots. Deserts are very dry, whether hot or cold, and plants and animals have adapted to survive. Some animals live in underground habitats. Animals that live in underground habitats include badgers,	a danger to us. We can use electricity safely by; not putting fingers in plug sockets, not using electrical items with wet hands and checking that wires are not frayed. An electrical circuit is a loop that allows electricity to travel around it. An electrical circuit must have wires and a battery. If a circuit is broken, electricity will not be able to flow around it. Materials that allow electricity to pass through them are conductors. Materials that do not allow electricity to pass through them are insulators. Many, but not all metals conduct electricity.	warmer and there is often rain. Some plants are grown for food. Farmers grow crops for food. Crops are harvested, packaged and transported for people to buy and eat.	project before they have success. Velcro was made to help join two fabrics together. Scientists use a microscope to look closely at very small things. Sometimes, materials look very different when we look at them using a microscope. Everything around us is made from tiny building blocks we cannot see called atoms. Solids have a definite shape. The shape of some solids can be changed by squashing, bending, twisting and stretching The atoms in a solid are tightly packed together and have a strong bond. Liquids can be poured. The shape of a liquid depends on the container is being held in. Water can be a solid and can also be a liquid.	changes, we can see different parts of it. A constellation is a group of stars that, when seen from Earth, form a pattern. People have given constellations names and have told stories that imagine how the constellations were formed. Astronomers have studied the stars for many years, learning from each other and making new discoveries. Scientists, including astronomers, study space to find out more about what lies beyond our planet. The International Space Station orbits earth and allows scientists to find out more about space. Scientists have sent a rover to Mars to look for signs of life long ago.
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<i>make us unwell. Scientists have found ways to help us stay healthy.</i>	<i>moles, foxes, rabbits and worms. These animals have adapted to living underground. A food chain describes 'who eats what' within a habitat. Green plants make their own food; we call these plants producers. Animals who eat plants, or other animals, are called consumers.</i>				
National Curriculum					
- notice that animals, including humans, have offspring which grow into adults - find out about and describe the basic needs of	- 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	This unit is beyond the requirements of the National Curriculum for Year 2. It has been written and included in our partnership to teach some important background knowledge that will help children in Year 4, when	- 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	- 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,	This unit has been written in addition to the National Curriculum content in Science for Year 2. It has been included to give pupils some prior knowledge which will be useful when they study astronomy again in Year 5.

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	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 microhabitats • describe how animals obtain their food from plants and	electricity features again, to access curriculum content in greater depth.		bending, twisting and stretching	
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	other animals, using the idea of a simple food chain, and identify and name different sources of food				
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