WOODLEA PRIMARY SCHOOL

Science Curriculum Coverage

Intent (Aims)						
Pedagogy (How?)	•					
Curriculum (What?)	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Reception	Human growth-How I've changed Oral health Experiment: To investigate how germs spread-importance of hand washing	Autumn-Changes Where have all the leaves gone? Experiment: How has the season changed? Sensory walk	Seasons-changing states of materials Experiment: Changing states: What happens to water when it freezes? What happens to chocolate when it's heated?-cooking	Space-What is there in Space? Experiment: Which materials are attracted to a magnet?	Minibeasts-Habitats Life cycle of a caterpillar. Experiment: How do caterpillars change into butterflies? Where do minibeasts live?	Healthy eating-Handa's fruit salad Changing season. Experiment: Which animals inhabit Kenya and the UK? What is a shadow?
Year 1	Animals including Humans Experiment: What common features do UK Mammals have? How are UK birds and reptiles similar and different?	Seasons Experiment: How do you think the seasons affect animals that live in the wild? To investigate the weather during the seasons.	Materials Experiment: What materials are different objects made from? What are the properties of everyday materials? How are everyday materials similar and different to each other?	Seasons Experiment: What are the features of different garden plants? What are the names of different garden plants?	Humans Experiment: Which parts of our bodies are used for different activities? Investigating the five senses.	Materials Experiment: Seaside objects What is the best material for a windbreak/ deckchair?

	How are UK fish and amphibians similar and different? Which animals are carnivores, herbivores or omnivores		What is the best material for …?	Can you identify and describe wild plants? What are the features of different trees? What do the terms 'evergreen' and 'deciduous' mean? How do plants change as they grow?		
Year 2	Could you live in the Arctic? Living things & their habitats: Arctic habitats. Food chains. Experiment: Where will we find most minibeasts in the playground?	Plants Experiment: Can you grow cress in the Arctic?	Animals including Humans What they need to survive Experiment: Are the oldest children in the class the tallest?	Healthy eating Experiment: Which is the best way to remove germs from your hands?	Materials and their properties Experiment: Which material will make the best raincoat?	Super Scientists Experiment: To investigate the effect gravity has on everyday objects. To investigate what happens to light when it passes through different transparent objects. To investigate whether sound can pass through materials. Sir Isaac Newton Alexander Graham Bell
Year 3	Rocks	Fossils and soils	Animals including humans	Plants	Light	Forces

	Experiment: To find out how permeable different rocks are. To find out how some rocks erode more than others do.	Experiment: To explore the different layers within soil.	Experiment: To build an arm, to understand how a muscle works.	Experiment: To investigate how water transports through plants.	Experiment: To investigate the difference between opaque, translucent and transparent objects.	Experiment: To compare how different objects move across different surfaces. To investigate the difference between the north and south poles on magnets.
Year 4	Animals including Humans-Digestive system Experiment: To investigate how the digestive system works	States of matter Experiment: To explore the differences between liquids and solids To identify and explore the properties of gases. To research the temperature in degrees Celsius (°C) at which materials change state. To investigate the process of evaporation. To investigate the process of condensation.	Electricity Experiment: To create a working circuit. To investigate which materials, conduct electricity. .	Electricity Experiment: To be able to plan and carry out an experiment to see how to change the brightness of a bulb.	Sound Experiment: To investigate whether sounds can travel through different materials. To explore the relationship between distance and volume. To find out that some materials are effective in preventing vibrations from sound sources reaching the ear. To investigate how sounds can be different pitches and volumes. To find out how the length, thickness and tightness of a string affects its pitch.	Living things and their habitats Experiment:

					To find out how sounds can be made by air vibrating and how to change the pitch of notes produced by vibrating air.	
Year 5	Properties & changes to materials Experiment: Mixing different materials with water Separating mixtures (sieves etc.) Experiment reactions – reversable and irreversible changes Burning materials	Earth & Space Experiment: Experiment to explore how the rotation of Earth creates day and night.	Forces in action Experiment: Crater experiment (gravity) Friction investigation using force meters Parachute experiment (air resistance)	Forces in action Experiment: Sinking plasticine experiment (water resistance) Catapult experiment (levers)	life cycles and reproduction Experiment:	Animals including humans-changes as humans develop to old age Experiment:
Year 6	Light - Investigating shadows Experiment: To investigate how light travels To investigate how shadows behave	Electricity Experiment: How to make a new xmas toy (using circuits) Scientist: Benjamin Franklin	Animals including humans- Circulatory system Experiment: - heart rate experiment/heart dissection	Living things and their habitats classification Experiment: Micro-organisms Growing yeast experiment most yeast?	Evolution and Inheritance Experiment: Best beak experiment Investigating how beaks have adapted to be the best shape for picking up the food they like best and is most available to them.	Great British Scientists Experiment: Investigate and Newton's three laws of motion. Explore the phenomenon of light and colour. To investigate the effects of gravity. To plan an investigation considering the

						variables and measurements taken. To explore the movement of gears in relation to their size and number. Scientists: Neston Stephen Hawking Alexander Fleming John Kemp Starley

Knowledge and Understanding	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Reception	Human growth-How I've changed Make observations of animals and plants and explain why some things occur and talk about changes	Autumn-Changes Where have all the leaves gone? Observing seasonal changes Being to understand	Seasons-changing states of materials Ice melting Know the properties of some materials and can suggest some of the purposes they are used for	Space-What is there in Space? Magnetism Talk about the features of their own immediate environment and how environments might vary from one another.	Minibeasts-Habitats Life cycle of a caterpillar Make observations of animals and plants and explain why some things occur and talk about changes	Changing seasons. Talk about the features of their own immediate environment and how environments might vary from one another.

		significance and difference between seasons and months Make observations of animals and plants and explain why some things occur and talk about changes		Talk about the differences between materials and changes they notice-cooking		Looks closely at similarities, differences, patterns and change E.g. exploring light from different sources, exploring shadows e.g. investigating shadows.
Year 1	Animals Identify, name, describe and compare animals, parts of human body 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	Habitats: Seasons Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.	Materials Everyday materials 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.	Seasons- 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.	Humans Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Materials Seaside objects Distinguish between natural and man made seaside objects.

	body and say which part of the body is associated with each sense.					
Year 2	Living things & their habitats: Arctic habitats. Could you live in the Arctic? 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.	Plants Could we grow cress in the Arctic? Seeds and bulbs, how plants need water and light to grow 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.	Animals including Humans : What they need to survive 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.	Healthy eating	Materials (insulation), ice and its properties Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Understand what is meant by raw and synthetic materials Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Living things & their habitats: Food chains 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 Super Scientists! To investigate the effect gravity has on everyday objects. To investigate what happens to light when it passes through different transparent objects. To investigate whether sound can pass through materials.
Year 3	Rocks Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.	Fossils and soils Describe in simple terms how fossils are formed when things that have lived are	Animals including humans nutrition, Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make	Plants Plants life cycle of flowers, how water is transported in plants Identify and describe the	Light Recognise that they need light in order to see things and that dark is the absence of light.	Forces Compare how things move on different surfaces. Notice that some forces need contact between two objects, but

		trapped within rock. Recognise that soils are made from rocks and organic matter.	their own food; they get nutrition from what they eat. skeletons and muscles Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	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.	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.	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.
Year 4	Animals including Humans- including humans digestive system, teeth and food chains Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in	States of Matter Solids, liquids, gases, evaporation and condensation Compare and group materials together, according to whether they	Electricity Electricity appliances, simple circuits, series, switches, conductors, insulators Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts, including	Electricity (continued)	Sound vibration, pitch, volume Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear.	Living things and their habitats classification keys, human impact on environments Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify

	humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey.	are solids, liquids or gases.	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 in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.		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. ,	and name a variety of living things in their local and wider environment. Recognise that environments can change and that this can sometimes pose dangers to living things.
Year 5		Properties & changes to materials Hardness, solubility, transparency, conductivity, response to magnets Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and	Forces in action Forces gravity, air/water resistance, friction, force and motion 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.	Earth & Space The solar system 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	life cycles and reproduction 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.	Animals including humans What changes as you grow? Human development from birth to old age Describe the changes as humans develop to old age.

		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		movement of the sun across the sky.		

		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.				
Year 6	Light To investigate how we see things through light entering the eyes. Explore how light can travel and change direction. To understand the differences between shadows and reflections.	Electricity 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	Animals including humans Circulatory system, diet, exercise, lifestyle 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.	Living things and their habitats Classification 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	Evolution and Inheritance 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 in different ways and that adaptation may lead to evolution	Great British Scientists! Investigate and define Newton's three laws of motion. Explore and explain the phenomenon of light and colour. Investigate and describe the effects of gravity. To plan an investigation considering the variables and measurements taken. To explore the movement of gears in relation to their size and number