Curriculum Map (Key Knowledge)

EYFS	Animals	Humans	Plants	Seasonal Changes	Materials	Forces
	Animals **Begin to understand the need to respect and care for the natural environment and all living things.** **Talk about what they see using a wide vocabulary.** **Understand the key features of the life cycle of an animal.** .	**Humans** **Understand the key features of the life cycle of a human.** **Make connections between the features of their families and other families.** **Notice differences between people.** **Continue developing positive attitudes about the differences between people.** **Name and describe people who are familiar to them.**	**Plants** **Plant seeds and care for growing plants.** **Explore the natural world around them.** **Talk about what they see using a wide vocabulary.** **Understand the key features of the life cycle of a plant.**	**Seasons** **Describe what they see, hear and feel while outside.** **Understand the effects of changing seasons on the natural world around them.** **Explore the natural world around them.** **Talk about what they see using a wide vocabulary.**	· **Materials** **Explore materials with different properties.** **Explore natural material indoors and outdoors.** **Use all their senses in hands-on exploration.** **Explore collections of materials with similar and or different properties.** **Talk about differences between materials and changes they notice.** **Explore the natural world around them.** **Talk about what they see using a wide vocabulary.**	**Forces** **Explore how things work.** **Explore and talk about forces they can feel.**

Curriculum Map (Key Knowledge)

Vocabulary	**Model and encourage children to use vocabulary such as:** ● names of animals that live on land, in water, in the jungle. desert, North Pole, South Pole and sea ● animal names and their offspring- dog, puppy, cat, kitten, sheep, lamb, cow, calf ● animal developmental stages- frog spawn, tadpole, frog, egg, chick, chicken, egg, caterpillar, chrysalis, butterfly	**Model and encourage children to use vocabulary such as:** ● hair- black, brown, dark, light, blonde, ginger, grey, white, long, short, straight, curly ● eyes- blue, brown, green, grey ● skin- different skin tones ● size- big/ tall, small/ short, bigger/ smaller ● human developmental stages- baby, toddler, child, adult, old, young, boy, girl, man, woman ● relationships- brother, sister, step brother, step sister, mother, stepmother, father, stepfather, aunt, uncle, grandmother, grandfather, cousin, friend, family	**Model and encourage children to use vocabulary such as:** ● plant, tree, bush, flower, vegetable, herb, weed ● names of common plants and trees- daffodil, tulip, daisy, rose, oak, sycamore, horse- chestnut ● plant developmental stages- seed, shoot, stem, leaf, flower, plant ● names of contrasting environments. e.g. beach, forest, meadow, desert	**Model and encourage children to use vocabulary such as:** ● seasons- spring, summer, autumn, winter ● weather- sunny, cloudy, hot, warm, cold, shower, raining, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow ● nature- new life, animals, young, plants, flowers, buds, leaves, blossom	**Model and encourage children to use vocabulary such as:** ● ice, water, frozen, snow, melt, wet, cold, slippery, smooth ● big, bigger, biggest, small, smaller, smallest ● hard, soft, bendy, rigid ● wood, plastic, paper, card, metal ● strong, weak ● water proof, not waterproof ● best, change back	**Model and encourage children to use vocabulary such as:** ● float, sink, up, down, top, bottom, surface ● move, roll, drop, fly, turn, spin, fall ● fast, slow, faster, slower, fastest, slowest ● further, furthest ● wind, air, water, blow

Curriculum Map (Key Knowledge)

KEY STAGE ONE YEAR ONE						
KS1	**SCIENTIFIC INVESTIGATION**					
	Ideas and Questions	**Planning**	**Observing and Presenting**	**Looking for Patterns**	**Explaining Results**	**Evaluating**
KS1	• Ask simple questions and recognise that they can be answered in different ways. • Recognise scientific and technical developments that help us.	• Perform simple tests or follow teachers' instructions. • With guidance, suggest what they will do. • With guidance, identify things to measure or observe that are relevant to the question. • Use resources provided or chosen from a limited range • use simple measurements and equipment to gather data. • Suggest why a test is unfair.	• Observe closely (including changes over time), using simple equipment. • Make measurements using non-standard units. • Use simple secondary sources to find answers. • Gather simple data to help answer questions. • Record findings in a range of ways, eg. simple tables, diagrams, pictograms, sorting circles, barcharts and templates.	• Use simple observable features to compare objects, materials and living things. • Identify and classify. (decide how to sort and group objects) • With guidance, begin to notice changes. (ie. cause and effect, patterns and relationships)	• Talk about what they have found out and how they found it out. • Use their observations and ideas to suggest answers to questions. • Use comparative language to describe changes, patterns and relationships.	• With support, suggest whether or not what happened was what they expected. • With support, suggest different ways they could have done things.

Curriculum Map (Key Knowledge)

			• **Talk about their findings using everyday terms, text scaffolds or simple scientific language.**			
Vocabulary	Aim, answers, changes, compare, describe, difference, different, enquiry, equipment, experience, explore, findings, gather, group, identify (name), investigate, measure, observe, patterns, pictograms, questions, record, same, table, block diagram, barchart, sort, diagram, label, tally chart, test. What will we do? (Plan) What do you think will happen? (prediction) What happened? (results) What have we found out? (conclusion)					
	YEAR ONE TOPICS					
	Autumn One	**Autumn Two**	**Spring One**	**Spring Two**	**Summer One**	**Summer Two**
Year One Topics	**Animals and Humans** **Humans** **Humans**	**Materials** **Identify and name materials.** **Describe physical properties.** **Compare and group materials according to properties.**	**Seasonal change Autumn Winter** **Observe changes across four seasons.** **Describe weather associated with the seasons.** **Find out how day length varies.**	**Seasonal change Spring/ Summer** **Observe changes across four seasons.** **Describe weather associated with the seasons.** **Find out how day length varies.**	**Plants** **Naming common garden and wild plants, deciduous and evergreen trees.** **Basic structure of trees and plants.**	**Animals and Humans** **Animals** **Living, dead, never alive.** **Identify common animals- fish, birds, reptiles, amphibians, mammals- compare structure.**
	Key Questions *What are the main parts of the human body called?*	**Key Questions** *What is a material?*	**Key Questions** *What causes the seasonal changes?*	**Key Questions** *What happens in the different seasons?*	**Key Questions** *What are the main parts of a plant?*	**Key Questions** *What is living and what is dead?*

Curriculum Map (Key Knowledge)

	What are the functions of these body parts? *What are the five senses called?* *What are the roles of the five senses?*	*What are the physical properties of common materials?*	*What happens in the different seasons?* *How does the weather differ from season to season?* *What changes take place in the natural environment?*	*How does the weather differ from season to season?* *What changes take place in the natural environment?* *How does the earth's movement create day and night?*	*What is the difference between a cultivated plant and a weed?*	*How are animals grouped?*
Year One	**Outcomes:** · identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. •know that we have five senses. We smell using our nose. We taste using our tongue. We touch using parts of our body, like our hands. We see using our eyes. We hear using our ears.	**Outcomes:** · distinguish between an object and the material from which it is made. · identify, name and compare a variety of everyday materials, including wood, plastic, glass, metal, water, paper and rock. · describe the simple physical properties of a variety of everyday materials and their uses. · compare and group together a variety of everyday materials on the basis of their simple physical properties.	**Outcomes** · a season is a part of a year. · most areas of the Earth have four seasons in a year: spring, summer, autumn (British English) or fall (US English), and winter. · the earth moves around the sun- orbit. · during the year, different parts of the earth are at different distances from the sun affecting the weather.	**Outcomes:** · a season is a part of a year. · most areas of the Earth have four seasons in a year: spring, summer, autumn (British English) or fall (US English), and winter. · the earth moves around the sun- orbit. · during the year, different parts of the earth are at different distances from the sun affecting the weather.	**Outcomes:** · identify and name a variety of common wild and garden plants. · compare and name examples of deciduous and evergreen trees. • identify and name some common trees. (school grounds/ park) · identify and describe the basic structure of a tree- trunk, branches, leaves, roots, bark.	**Outcomes:** · explore and compare the differences between things that are living, dead, and things that have never been alive. · identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals · describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)

Curriculum Map (Key Knowledge)

	• Know the functions of the main parts of the human body: Hair grows on our head and helps to protect our skull. The skull is the bone that protects our brain. Eyes help us see. Ears help us hear. Mouth is used to eat and talk. Nose helps us smell. Eyebrows protect our eyes, stopping dirt entering them. Inside our mouths are tongues which help us taste. Teeth grind up food so it can be swallowed. Shoulders help our arms to lift up. Hands help us grab things and write. Knees help us bend our legs. Feet help us stay balanced and upright. Elbows help our arms to bend. Neck connects the head to the rest of the body.	· perform simple tests upon the materials to test their properties.	· day and night occur due to the rotation of the earth on its axis. · observe changes across the four seasons. · observe and describe weather associated with the seasons and how day length varies. · use descriptive words, photos and pictures to record changes. · collect evidence of changes (eg. leaves, seeds, flowers). · observe and name types of weather (eg.rain, sun, wind, clouds).	· observe changes across the four seasons · observe and describe weather associated with the seasons and how day length varies. · use descriptive words, photos and pictures to record changes · collect evidence of changes (eg. leaves, seeds, flowers). · observe and name types of weather (eg.rain, sun, wind, clouds).	• identify and name some common flowering plants. (school grounds/ park) · Identify the leaf, root, stem and flower of a plant.	• Classify different animals into different groups according to their features.

Curriculum Map (Key Knowledge)

Vocabulary	Names of senses: sight, smell, hearing, touch, taste Parts of the body: hair, skull, eyes, ears, mouth, nose, eyebrows, tongue, teeth, shoulders. hands, knees, feet, elbows, neck.	• Names of materials: wood, plastic, glass, metal, water, rock, paper, cardboard, rubber, fabric. • Properties of materials: hard, soft, shiny, dull, stretchy, rough, smooth, bendy, not bendy, transparent, opaque, waterproof, not waterproof, absorbent, not absorbent, sharp, stiff. • Other: object, solid. • Properties of materials: e.g. strong, flexible, light, hard-wearing, elastic.	• Seasons: spring, summer, autumn, winter, seasonal change. • Weather: e.g. sun, rain, snow, sleet, frost, ice, fog, cloud, hot/warm, cold, storm, wind, thunder, weather forecast. • Measuring weather: temperature, rainfall, wind direction, thermometer, rain gauge. • Day length: night, day, daylight. • Earth movement- orbit, axis, rotate	• Seasons: spring, summer, autumn, winter, seasonal change. • Weather: e.g. sun, rain, cloud, hot/warm, cold, storm, wind, thunder, weather forecast. • Measuring weather: temperature, rainfall, wind direction, thermometer, rain gauge. • Day length: night, day, daylight.	Names of common plants: wild plant, garden plant, evergreen tree, deciduous tree, common flowering plant, weed, grass. • Name some features of plants: e.g. flower, vegetable, fruit, berry, leaf/leaves, blossom, petal, stem, trunk, branch, bark, root, seed, bulb, soil. • Name some common types of plant e.g. sunflower, daffodil. • Name different types of plant: e.g. bean plant, cactus.	• Living or dead: living, dead, never living, not living, alive, never been alive, healthy. • Names of animal groups: fish, amphibians, reptiles, birds, mammals. • Animal body parts: e.g. tail, wings, feathers, fur, beak, fins, gills.

Curriculum Map (Key Knowledge)

KEY STAGE ONE YEAR TWO						
SCIENTIFIC INVESTIGATIONS						
	Ideas and Questions	**Planning**	**Observing and Presenting**	**Looking for Patterns**	**Explaining Results**	**Evaluating**
	· ask simple questions and recognise that they can be answered in different ways. · recognise scientific and technical developments that help us.	· perform simple tests or follow teachers' instructions . · with guidance, suggest what they will do. · with guidance, identify things to measure or observe that are relevant to the question.	· observe closely (including changes over time), using simple equipment. · make measurements using non-standard units. · use simple secondary sources to find answers.	· use simple observable features to compare objects, materials and living things. · identify and classify. (decides how to sort and group objects)	· talk about what they have found out and how they found it out. · use their observations and ideas to suggest answers to questions.	· with support, suggest whether or not what happened was what they expected. · with support, suggest different ways they could have done things.

Curriculum Map (Key Knowledge)

		· use resources provided or chosen from a limited range. · use simple measurements and equipment to gather data. · suggest why a test is unfair.	· gather simple data to help answer questions. · record findings in a range of ways, eg. simple tables, diagrams, pictograms, sorting circles, bar charts and templates. · talk about their findings using everyday terms, text scaffolds or simple scientific language,	· with guidance, begin to notice changes (ie. cause and effect), patterns and relationships. (ie. how one variable affects another)	· use comparative language to describe changes, patterns and relationships.	
Vocabulary	Aim, answers, block diagrams, changes, compare, describe, difference, different, enquiry, equipment, experience, explore, findings, gather, group, identify (name), investigate, measure, observe, patterns, pictograms, questions, record, same, table, sort, diagram, tally chart, test. What will we do? (Plan) What do you think will happen? (prediction) What happened? (results) What have we found out? (conclusion)					
	Aut 1	**Aut 2**	**Spr 1**	**Spr 2**	**Sum 1**	**Sum 2**
Year Two Topics	**Animals and Humans** **Humans** **Humans have offspring that grow into adults.** **Life cycle of a human.** **Basic needs of humans and animals for survival- air, water, nutrition.**	**Uses of Materials** **Identify and compare different materials.** **Look at their properties and how these are related to their uses.** **Find out how a material's shape can be changed by bending, stretching, twisting and squashing.**	**Plants** **Parts of a plant and their function.** **Plants come from seeds and bulbs.** **Life cycle of a flowering plant.**	**Animal and Humans** **Animals** **Animals have offspring that grow into adults.** **Growth and reproduction of animals. (egg, chicken, egg,**	**Living Things and their Habitats** **Animals and plants and their habitats and microhabitats.** **Basic needs of living things.** **Food Sources and food chains.**	**Investigation** **Light and Sound**

Curriculum Map (Key Knowledge)

	Importance of a healthy diet, exercise and hygiene.		**Needs of a plant- water, nutrients, warmth and light.**	**caterpillar, pupa, butterfly)**	**Carnivores, herbivores, omnivores.**	
Year Two	**Key Questions** *What do animals including humans need for survival?* *What are the stages that a human goes through as it grows into an adult?* *How do humans keep fit and healthy?*	**Key Questions** *What is a material?* *What are the physical properties of common materials?* *How can the shape of some materials be changed?* *Why are different objects made from certain materials?*	**Key Questions** *Where do plants come from?* *What does a plant require in order to grow healthily?*	**Key Questions** *What do animals including humans need for survival?* *What are the stages that an animal goes through as it grows into an adult animal?* *What are the names given to the offspring of common animals?* -	**Key Questions** *What do all living things need in order to survive?* *How do animals obtain their food?* *What is a food chain?* *What are the differences between carnivores, herbivores and omnivores?* *What is a habitat and a microhabitat?* *What type of features do different habitats have?*	**Key Questions:** *How do we see?* *How do we hear?* *What can affect our sense of sight and hearing?*
Year Two	**Outcomes:** · notice that humans have offspring which grow into adults. Baby-toddler-child-teenager-adult-old age. · recognise changes that take place as humans get older.	**Outcomes:** · distinguish between an object and the material from which it is made. · identify, name and compare a variety of everyday materials, including wood, plastic, glass, metal, water, paper and rock.	**Outcomes:** · identify and describe the basic structure of a variety of common flowering plants, · Identify the leaf, root, stem and flower of a plant and their functions.	**Outcomes:** · understand that all animals need: food, water and air in order to survive. • know the life processes of all creatures.	**Outcomes:** · Identify and compare different habitats. e.g. long grass, under wood, trees, leaf litter, logs. · Look at the features of different habitats.	**Outcomes:** • Observe and name a variety of sources of light, including electric lights, flames and the Sun, explaining that we see things because light travels from them to our eyes. • Observe and name a variety of sources of sound,

Curriculum Map (Key Knowledge)

	· find out about and describe the basic needs of 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. · know the five food groups that are needed in order to have a healthy body- protein, carbohydrates, dairy, vitamins and minerals, fats and sugars and which food they can be found in. Understand that proteins come from meat, fish and beans and help your muscles to grow. Vitamins and minerals from fruit and vegetables keep your skin healthy and the organs inside your body working properly. Dairy products found in milk and cheese give you strong teeth and bones. Sugar found in sweets and cakes provides you with immediate	· describe the simple physical properties of a variety of everyday materials and their uses. · compare and group together a variety of everyday materials on the basis of their simple physical properties. · perform simple tests to explore which material would be best suited to a specific purpose. · find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. · recognise why it is important to recycle and reuse materials.	· find out and describe how healthy plants need water, light and a suitable temperature to grow and stay healthy. · identify that seeds and bulbs do not need light to germinate and identify how this is different to the needs of a plant. · observe and describe how seeds and bulbs grow into mature plants- life cycle.	· notice that animals have offspring which grow into adults. · know the names of common animals and their young. e.g. calf- cow, foal- horse -recognise how animals change as they grow. · recognise changes that take place within the lifecycle of an animal.e.g. egg to chicken egg to caterpillar to butterfly frog spawn to tadpole to frog - understand the needs of an animal for healthy growth.	• Study the different creatures that can be found living within the different habitats. •Use a simple key to identify an animal in its habitat. · describe how animals obtain their food from plants and other animals, using the idea of a simple food chain- producer, consumer, predator, prey. · identify and name different sources of food. · identify and name a variety of common animals that are carnivores, herbivores and omnivores.	noticing that we hear with our ears. • Understand how light travels to our eyes to see. • Understand how sound travels to our ears to hear. • Conduct experiments related to how sound and light travel.

Curriculum Map (Key Knowledge)

	energy. They should be eaten in small quantities. Carbohydrates found in bread and potatoes release energy slowly.					

Curriculum Map (Key Knowledge)

Year Two Vocabulary	• **Basic needs for human life:** oxygen, carbon dioxide, breath/ respiration, food, water. • **Human life cycle:** baby, child, toddler teenager,adult, old age. • **Food groups-** protein, carbohydrates, dairy, sugars, vitamins and minerals, balanced diet, growth, repair, energy.	• Names of materials: wood, plastic, glass, metal, water, rock, paper, cardboard, rubber, fabric. • Properties of materials: hard, soft, shiny, dull, stretchy, rough, smooth, bendy, not bendy, transparent, opaque, waterproof, not waterproof, absorbent, not absorbent, sharp, stiff. • Other: object, solid. • Changing shape: squash, bend, twist, stretch. • Properties of materials: e.g. strong, flexible, light, hard-wearing, elastic. • Other: suitability, recycle, pollution.	• Names of common plants: wild plant, garden plant, evergreen tree, deciduous tree, common flowering plant, weed, grass. • Name some features of plants: e.g. flower, vegetable, fruit, berry, leaf/leaves, blossom, petal, stem, trunk, branch, root, seed, bulb, soil. • Name some common types of plant e.g. sunflower, daffodil. • Growth of plants: germination, shoot, root, seed dispersal, grow, life cycle, die, wilt, seedling. • Needs of plants: sunlight, nutrition, soil, light, healthy, space, air, temperature • Name different types of plant: e.g. bean plant, cactus.	• Life processes: movement, sensitivity, growth, reproduction, nutrition, excretion, respiration • Being born and growing: Young, offspring, live young, grow, develop, change, hatch, lay, fly, crawl, metamorphosis, talk. • Young and adult names: e.g. lamb and sheep, kitten and cat, duckling and duck. • Life cycle stages: e.g. egg, pupa/ cocoon, caterpillar, butterfly. Frogspawn, tadpole, froglet, frog. • Survival and staying healthy: basic needs, survive, food, air, exercise, diet, nutrition,	• Habitat and Microhabitats: sea, desert, woodland, meadow, grassland, under rock, bark, leaf, • Features: moist, dark, safe, warm, damp, dark, next, hide • Animals: woodlouse, beetles, worms, snails, centipede, ant, ladybird, spider, cricket • Food chains: food sources, food, producer, consumer, predator, prey. • Animal diets: carnivore, herbivore, omnivore.	

Curriculum Map (Key Knowledge)

Year Three						
	SCIENTIFIC INVESTIGATION					
	Ideas and Questions	**Planning**	**Observing and Presenting**	**Looking for Patterns**	**Explaining Results**	**Evaluating**
KS2	· ask relevant questions and using different types of scientific enquiries to answer them · explain the purposes of a variety of scientific and technological developments	· set up simple practical enquiries, comparative and fair tests · begin to make decisions about what observations to make and how long to make them for · begin to choose the type of simple equipment that might be used from a reasonable range · use appropriate equipment and measurements with reasonable accuracy · recognises when a simple fair test is needed · with help, decide how to set up a fair test and control variables	· make systematic and careful observations · make accurate measurements using standard units, using a range of equipment · recognise when and how secondary sources might help answer questions that cannot be answered through practical investigations · gather and record data in a variety of ways · make decisions about how to record and analyse the data and prepare own formats for recording · record and presents findings using drawings, labelled	· use observable and other criteria to group, sort and classify in different ways (including simple keys and branching databases) · identify differences, similarities or changes related to simple scientific ideas and processes · with help, look for changes, patterns, and relationships in their data	· with help, use results to draw simple conclusions and answers questions using appropriate level of knowledge · use straightforward scientific evidence to answer questions or to support their findings · use relevant scientific language to discuss their ideas and communicate their findings	· with support, use results to suggest improvements to what they have done · with support, raise further questions (eg. arising from the data) · with support, make predictions for new values within or beyond the data collected

Curriculum Map (Key Knowledge)

			diagrams, keys, tally charts, Carroll diagrams, Venn diagrams, bar charts and tables · report on findings from enquiries, in simple scientific language			
Vocabulary	Accurate, bar chart, classify, comparative test, conclusion (What have we found out?), criteria, data, develop, diagram, evaluate, evidence, explanation, key, fair test, method, observations, plan (What will we do?), practical enquiry, prediction (What do you think will happen?), primary sources, questioning, reasoning, relationships, results (What happened?) secondary sources, standard units, What do we change, what do we keep the same, what are we measuring?					
KS2 Year Three	**Aut 1**	**Aut 2**	**Spr 1**	**Spr 2**	**Sum 1**	**Sum 2**
	Animals and Humans (nutrition. teeth)	**Animals and Humans (skeleton types, role of skeleton and muscles)**	**Rocks**	**Forces and Magnets**	**Light**	**Plants**
	Key Questions *What does a balanced diet contain?* *What is the role of each food group?* *How do the diets of animals differ?*	**Key Questions** *What would happen if an animal didn't have a skeleton?*	***Key Questions*** *What are the physical characteristics of rocks?* *How can rocks be grouped?* *What is the same and different about igneous, sedimentary and metamorphic rocks?* *How are rocks formed?* *What is a fossil and how is it made?*	**Key Questions** *What is a force and how does it affect movement?* *What affects the way an object will move over a surface?* *Which materials are magnetic and which are not magnetic?*	**Key Questions** *What is a light source?* *What happens when there is no light?* *Which surfaces are good reflectors?* *How can shadows be made and how can they be changed?*	**Key Questions** *What are the functions of the different parts of a plant?* *What does a plant need in order to grow and thrive?* *How is water transported within a plant?* *What are the roles of the different parts of the flower in producing a seed?*

Curriculum Map (Key Knowledge)

	Outcomes: · identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat - Five food groups. **Protein** helps to strengthen cells, bones, skin, hair and muscle. Important to help us grow and maintain our health. **Carbohydrates** give us energy. **Fats and sugars** help with providing energy and muscle movement. **Vitamins and minerals** build strong bones and teeth and help us fight off disease. · compare and contrast the diets of different animals, and decide ways of grouping them according to what they eat	**Outcomes:** · identify that humans and some other animals have skeletons and muscles for support, protection and movement. · identify and group animals with and without skeletons, comparing their movement- endoskeletons, exoskeletons, hydrostatic skeletons. · Understand the role of muscles in movement.	**Outcomes** · compare and group together different kinds of rocks on the basis of their appearance and simple physical properties · begin to understand how igneous, sedimentary and metamorphic rocks are formed. · relate the simple physical properties of some rocks to their formation. · explore that different rocks react differently to forces (eg. rubbing, water) · describe in simple terms how fossils are formed when things that have lived are trapped in rock. · recognise that soils are made from rocks and organic matter.	**Outcomes:** · understand different types of forces, including pushes, pulls, gravity and friction. · compare how things move on different surfaces · notice that some forces need contact between two objects, but magnetism can act at a distance · observe how magnets attract or repel each other and attract some materials and not others · compare and group together 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	**Outcomes:** · name a number of light sources, including the sun · 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 · explore the way light is reflected from a mirror · recognise that light from the sun can be dangerous and that there are ways to protect their eyes . recognise that shadows are formed when light is blocked by an opaque object · find patterns in the way that the size of shadows change.	**Outcomes:** · identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers · explore the requirements of plants for life and growth (air, light, water, nutrients, room to grow) and how they vary 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 dispersal.

Curriculum Map (Key Knowledge)

				or repel, depending on which poles are facing. .		
Year Three Vocabulary	• **Food groups and nutrients:** fibre, fats (saturated and unsaturated), sugars, vitamins, minerals, protein, carbohydrates, • **Other**- cells, muscle, energy, growth, movement, disease **Previously introduced vocabulary:** **Food groups- fruit and vegetables, protein, carbohydrates, dairy, sugars, fats, dairy, fruits and vegetables.**	• **Skeletons and muscles:** skeleton, muscles, tendons, joints, protection, support, organs, voluntary muscles, involuntary muscles, biceps, triceps, contract, relax, bone, cartilage, shell, vertebrate, invertebrate, exoskeleton, endoskeleton, exoskeleton, hydrostatic skeleton. • **Names of human bones:** e.g. skull, spine, backbone, vertebral column, ribcage, pelvis, clavicle, scapula, humerus, ulna, pelvis, radius, femur, tibia, fibula.	• **Types of rock:** sedimentary rock, igneous rock, metamorphic rock. • **Properties of rocks:** permeable, semi-permeable, impermeable, durable. • **Names of rocks:** e.g. marble, chalk, granite, sandstone, slate. • **Formation of rocks and fossils:** natural, human-made, magma, lava, molten rock, sediment, erosion, fossilisation, layers, bone, fossil. • **Soil:** sandy, chalky, clay, peaty, loamy, topsoil, subsoil, bedrock, mineral, organic matter, compost. • **Other:** palaeontology.	• **How things move:** move, movement, surface, distance, strength. • **Types of forces:** push, pull, contact force, non-contact force, friction. • **Magnets:** magnetic, magnetic field, magnetic force, bar magnet, horseshoe magnet, ring magnet, magnetic poles (north pole, south pole), attract, repel, compass. • **Magnetic and non-magnetic materials**: e.g.	• **Light and seeing:** dark, absence of light, light source, illuminate, visible, shadow, opaque, transparent, translucent, energy, block. • **Light sources:** e.g. candle, torch, fire, lantern, lightning. • **Reflective light:** reflect, reflection, surface, ray, scatter, reverse, beam, angle, mirror, moon. Shadows, block, absorb, ray, travel. • **Sun safety:** dangerous,	• **Water transportation:** transport, evaporation, evaporate, nutrients, absorb, anchor. • **Life cycle of flowering plants:** pollination (insect/wind), pollen, nectar, pollinator, seed formation, seed dispersal (animal/wind/water), reproduce, fertilisation, fertilise, stamen, anther, filament, carpel (pistil), stigma, style, ovary, ovule, sepal, carbon dioxide.

Curriculum Map (Key Knowledge)

				iron, nickel, cobalt.	**glare, damage, UV light, UV rating, sunglasses, direct.** **Previously introduced vocabulary: opaque, transparent, sunlight, sun.**	
Year Four						
Scientific Investigation						
KS2	**Ideas and Questions**	**Planning**	**Observing and Presenting**	**Looking for Patterns**	**Explaining Results**	**Evaluating**
Year Four	· ask relevant questions and using different types of scientific enquiries to answer them · explain the purposes of a variety of scientific	· set up simple practical enquiries, comparative and fair tests · begin to make decisions about what observations to make and how long to make them for	· make systematic and careful observations · make accurate measurements using standard units, using a range of equipment	· use observable and other criteria to group, sort and classify in different ways (including simple keys and branching databases)	· with help, use results to draw simple conclusions and answers questions using appropriate level of knowledge	· with support, use results to suggest improvements to what they have done · with support, raise further questions (eg. arising from the data)

Curriculum Map (Key Knowledge)

	and technological developments	· begin to choose the type of simple equipment that might be used from a reasonable range · use appropriate equipment and measurements with reasonable accuracy · recognises when a simple fair test is needed · with help, decide how to set up a fair test and control variables	· recognise when and how secondary sources might help answer questions that cannot be answered through practical investigations · gather and record data in a variety of ways · make decisions about how to record and analyse the data and prepare own formats for recording · record and presents findings using drawings, labelled diagrams, keys, tally charts, Carroll diagrams, Venn diagrams, bar charts and tables · report on findings from enquiries, in simple scientific language	· identify differences, similarities or changes related to simple scientific ideas and processes · with help, look for changes, patterns, and relationships in their data	· use straightforward scientific evidence to answer questions or to support their findings · use relevant scientific language to discuss their ideas and communicate their findings	· with support, make predictions for new values within or beyond the data collected
	accurate, bar chart, classify, comparative test, conclusion (What have we found out?), criteria, data, develop, diagram, evaluate, evidence, explanation, key, fair test, method, observations, plan (What will we do?), practical enquiry, prediction (What do you think will happen?), primary sources, questioning, reasoning, relationships, results (What happened?) secondary sources, standard units, What do we change, what do we keep the same, what are we measuring?					
	Aut 1	**Aut 2**	**Spr 1**	**Spr 2**	**Sum 1**	**Sum 2**

Curriculum Map (Key Knowledge)

	States of Matter	Animals including Humans (digestive system, teeth)	Electricity	Sound	Animals Including Humans (food chains)	Living Things and their Habitats (Life processes, classification, habitats, food chains)
KS2 Year Four	**Key Questions** *What is the difference between an object and the material that it is made from?* *How can we sort materials?* *How do materials change when they are heated and cooled?* *Which scientific processes take place during the water cycle?*	**Key Questions** *What is digestion?* *What are the roles of the different parts of the digestive system?* *What is the function of the different types of teeth in digestion?*	**Key Questions** *Why can electricity be dangerous?* *What is a circuit?* *What elements does a simple circuit contain?* *How does a circuit work?* *Which materials are conductors?* *Which materials are insulators?*	**Key Questions** *How are sounds made and how do they travel?* *Why do sounds change in volume and pitch?*	**Key Questions**	**Key Questions** *How can animals be grouped?* *How do animals obtain their energy from the sun?* *How do humans impact or change their environment?*
	Outcomes: · 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. · measure or research the temperature at which	**Outcomes:** · describe the simple functions of the basic parts of the digestive system in humans · identify the different types of teeth in humans and their simple functions · find out what damages teeth and how to look after them. · compare the teeth of carnivores and herbivores	**Outcomes:** · identify whether or not a lamp will light in a simple series circuit, based on whether it is part of a complete loop with a battery · know that a switch can open/close a circuit	**Outcomes:** · 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	**Outcomes:** **construct and interpret a variety of food chains, identifying producers, predators and prey**	**Outcomes:** · recognise that living things can be grouped in a variety of ways · explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment · recognise that environments can change and that this can sometimes

Curriculum Map (Key Knowledge)

	this happens in degrees Celsius (°C). · identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	and suggest reasons for the differences. · describe the simple functions of the basic parts of the digestive system in humans · identify the different types of teeth in humans and their simple functions	· recognise some common conductors and insulators, and associate metals with being good conductors	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.		pose dangers to living things. · construct and interpret a variety of food chains, identifying producers, predators and prey. · identify the way habitats change over the year.
Vocabulary	• **States of matter: solids, liquids, gases, particles.** • **State change: evaporate, condense, melt, freeze, heat, cool, melting point, freezing point, boiling point, water vapour.** • **Water cycle: precipitation, evaporation, condensation, ground run-off, collection, underground water, bodies of water (sea, river, stream), water droplets, hail.** • **Other: atmosphere.**	• **Types of teeth and dental care: molar, premolar, incisor, canine, wisdom teeth, tooth decay, plaque, enamel, baby (milk) teeth.** • **Digestive system: digest, digestion, tongue, teeth, saliva, salivary glands, oesophagus, stomach, liver, pancreas, gall bladder, small intestine, duodenum, large intestine, rectum, anus, faeces, organ.**	• **Electricity: mains-powered, battery-powered, mains electricity, plug, appliances, devices.** • **Circuits: circuit, simple series circuit, complete circuit, incomplete circuit.** • **Circuit parts: bulb, cell, wire, buzzer, switch, motor, battery.** • **Materials: electrical conductor,**	• **Parts of the ear: eardrum.** • **Making sound: vibration, vocal cords, particles.** • **Measuring sound: pitch, volume, amplitude, sound wave, quiet, loud, high, low, travel, distance.**	·	• **Living things: organisms, specimen, species.** • **Grouping living things: classification, classification keys, classify, characteristics.** • **Names of invertebrate animals: snails and slugs, worms, spiders, insects.** • **Invertebrate body parts: e.g. wing case, abdomen, thorax, antenna, segments, mandible, proboscis, prolegs.**

Curriculum Map (Key Knowledge)

			electrical insulator. • **<u>Other:</u> safety.**			• **<u>Environmental changes:</u> environment, environmental dangers, adapt, natural changes, climate change, deforestation, pollution, urbanisation, invasive species, endangered species, extinct.**