



Science

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
Nursery (2s)	<u>Guess How Much I Love You</u> Begin to discuss their own and others physical appearances and can point to different body parts when named. Talk about their family and the people that are special to them. Recognise these people through viewing photographs and videos.	<u>Where's Spot?</u> Use senses to explore the wider world such as the outdoor area. Think about what they can touch, see, hear, smell at a basic level. Use 'That's Not a Dog' book to explore different textures and model discussing these. Classroom visit from a dog. Observe what they can see, hear etc. Introduce different treasure baskets of materials. Children to talk about the sounds and textures of different materials. Experiment – With adult support, children use feely tubs to discuss the textures of different materials. Which material would make a comfortable bed for Spot?	<u>The Train Ride</u> Make links between their own experiences and their role-play by creating familiar experiences in small world/domestic play such as home life, forest walks etc.	<u>The Gingerbread Man</u> Children to find out about different farm animals and begin to match adult versions with their young using pictures to look for similarities. Identify the weather such as sun and rain.	<u>The Very Busy Spider</u> Children to explore different minibeasts by looking at pictures, going on a minibeast hunt and reading stories centred around bugs. Woodland walk to hunt for bugs and explore their natural habitats.	<u>Brown Bear, Brown Bear, What do you see?</u> Provide children with experiences to explore familiar and new textures. Children to go on their own bear hunt and gain new experiences such as walking on grass, mud, and in puddles. Children to begin to name and identify new animals and recognise these in photographs, stories and videos. Children to begin to act out these animals in their role-play through movement, sounds etc.
Vocabulary	Explicit: me, face, eye, hand, leg, nose, mouth	Explicit: soft, hard	Explicit: forest, walk	Explicit: sun, rain, farm	Explicit: bugs, woods	Explicit: bear, bird, frog, fish
Working scientifically	Children will work scientifically by: • asking simple questions and recognising that they can be answered in different ways. • observing closely, using simple equipment. • performing simple tests. • identifying and classifying. • using their observations and ideas to suggest answers to questions. • gathering and recording data to help answer questions.					

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
Nursery (3 – 4s)	<u>Dear Zoo</u> Look at our own appearance and discuss some of our main features such as eyes, hair, mouth etc. Look at and begin to name different zoo animals. Discuss the appearance of the zoo animals. Begin to compare the appearance of different animals.	<u>Owl Babies</u> Observe and discuss the concept of light and dark. Begin to notice the difference between light and dark. Begin to notice and comment on shadows and what it looks like. Look at animals that are awake during the night (Nocturnal animals). Visit from the owls – What do they look like? What are their main features? Do all owl's look similar? What is different about some of the owls?	<u>We're Going on a Bear Hunt</u> Look at the animal species, bears. Draw attention to how bears can look different – not all types of bears look the same (polar bears, brown bears, panda bears etc.) Look at animals that live on a farm and begin to name these. <u>Visit/trip</u> to the farm – can we spot the animals that we have looked at? Begin to look at produce that we can get from farms such as milk from cows and eggs from chickens.	<u>The 3 Little Pigs</u> Observe, experience, and play with lots of different materials. Begin to use language to discuss the appearance and feel of materials. Experiment - With adult support, build a house for the little pigs using a chosen material and blow it down using the hair dryer. Which material is the best for building a house?	<u>Planting & Minibeasts</u> <u>Planting</u> Observe and look at different types of plants such as flowers, trees, bushes, shrubs etc. Comment on the appearance of different plants and begin to notice similarities and differences between these. Understand that a plant is alive, and it grows. Observe and comment on a plant as it grows – how has it changed? <u>Minibeasts</u> Look at and name some common minibeasts that can be found outside. Look at the appearance of different minibeasts – what do they look like? Arrange for caterpillars to come in and observe how they change over time. Discuss and comment on the changes at each stage of a caterpillar's life until it turns into a butterfly.	<u>Sink/Float & Rockets</u> Create a rocket and observe as we can mix ingredients to make a reaction. Observe a reaction as the rocket flies up in the sky. Observe and comment on sinking and floating. Use everyday language to discuss this (it stays on top; it goes to the bottom etc.) Use obvious materials to begin verbally predicting whether a material will sink or float i.e., a heavy rock, a light feather.
Vocabulary	Explicit: animals, zoo, look	Explicit: night, day, light, dark	Explicit: farm, bear, same, different	Explicit: feel, touch	Explicit: insect, plant, grow	Explicit: heavy, light, fly
Weather and Seasons	Throughout the year, children will be exposed to the different seasons but may not necessarily know what these mean. Children will also comment on the weather they see outside using basic terms such as hot, sun, warm, rain, cold and snow. Explicit: sun, cloud, rain, fog, cold, hot					
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Reception	<u>Seasonal Changes</u> Weather <u>What's the weather like outside?</u> Highlight and name different types of weather and conditions. Observe, discuss, and comment on the weather outside. Create representations of the weather and use these to create a weather chart. <u>Waterproof / Not Waterproof</u> Children look at different materials and objects and discuss what happens when water is added. <u>What does Autumn look like?</u> Understand what is meant by a season and name the 4 seasons. Discuss main features of each season and what these could look like in our local environment. Experience and observe outdoors and discuss which season we may be in based on the signs we observe.	<u>Animals including Humans</u> Our Bodies <u>Can we name the parts of our body?</u> Discuss what is meant by 'our body' and highlight some of the main features that we can see. Name some main features of the human body. <u>How tall are we?</u> Begin to use the language of tall and short to describe and discuss different objects. Compare their own height to the height of other objects such as trees, towers, chairs, tables and other people (teachers and friends). Use the language of tall, short, taller, shorter, shortest and tallest to describe and compare the height of people in our class. <u>What is that smell?</u> Discuss the function of our nose and how we use it to smell. Discuss and share some of our favourite scents and least favourite scents. Use our nose and scent to smell 'mystery' cups, predicting what could be inside and using descriptive language to describe how they smell. <u>What do we like to eat?</u> Understand what is meant by breakfast, lunch and tea and comment on what they could eat for each of these meals. Match and sort different foods between these 3 meals and discuss what wouldn't be appropriate to eat at these times.	<u>Being Healthy</u> Our Bodies <u>Healthy and balanced diet</u> Discuss what is meant by the terms healthy and unhealthy with relation to food. Discuss and comment on different foods and decide whether they are healthy or unhealthy for us. Sort foods between healthy and unhealthy foods and discuss substitutes for unhealthy treats that are bad for us. Discuss what is meant by a balanced diet and design their own meal taking into consideration healthy and unhealthy foods and the need for both. <u>Why do we need to brush our teeth?</u> Experiment with tea and eggs and observe the change that foods/drinks can have on our teeth. Observe and discuss what happens when we brush the egg and relate this back to our teeth. Understand the importance of brushing our teeth and know the best times of the day to practice this routine. <u>What happens when we exercise?</u> Understand what is meant by the term 'exercise' and discuss some main features of this. Understand and discuss why exercise is important and comment on different ways that we can exercise. Observe the effects exercise has on our body in relation to	<u>Animals including Humans / Plants</u> Plants and Habitats <u>Is this a plant?</u> Children to discuss and observe plants both familiar and unfamiliar to them. Sort and categorise objects between plant and not plant and discuss the reasons behind our sorting. Name key features of a plant including leaves, stem, roots, flowers etc. <u>What does a plant need to grow?</u> Understand that plants have different requirements to survive and grow. Predict which plant will grow the best and which will not grow. What makes you think that? Experiment with plant needs including sun and water. Observe plants over time and record any changes through discussions and simple diagrams. Discuss our findings of how best to grow a plant. <u>What is a habitat?</u> Highlight the term 'habitat' and discuss what this means. Look at and observe common habitats and homes including nests, burrows, ponds and compare these to our houses. Highlight key habitats around the world such as the arctic, deserts and woodland and discuss the types of animals that may live in these. Can the children create their own habitat using the small world	<u>Experiment Extravaganza</u> <u>Who is Eva Crane?</u> Recap on minibeads from the previous term. Investigate the Scientist of Eva Crane and her work with bees. Look at and order a simple life-cycle of a bee discussing how they change. <u>What does Spring look like?</u> Understand what is meant by a season and name the 4 seasons. Discuss the main features of each season and what these could look like in our local environment. Experience and observe outdoors and discuss which season we may be in based on the signs we have observed. <u>Does it dissolve?</u> Understand and observe what is meant by 'dissolve'. Predict what will happen when materials are added to water and think about if they will dissolve or not. Observe and comment on what happens when materials are added to water and evaluate their own predictions. <u>Will it sink or float?</u>	<u>Magnets</u> <u>What is a magnet?</u> Understand and experiment with magnets, comment on what we notice. Understand what happens when different sides of the magnets are present together. Understand what happens when magnets stick (pull) and when they repel (they push away from each other). <u>What does summer look like?</u> Understand what is meant by a season and name the 4 seasons. Discuss main features of each season and what these could look like in our local environment. Experience and observe outdoors and discuss which season we may be in based on the signs we have observed.

		Understand why we need to eat food and the importance of eating meals each day – to give us energy.	the way we feel, our breath and our heartbeat. <u>What does Winter look like?</u> Understand what is meant by a season and name the four seasons. Discuss main features of each season and what these could look like in our local environment. Experience and observe outdoors and discuss which season we may be in based on the signs we have observed.	available? Look and name different animals that would live in these habitats and begin to group based on where they live i.e. farm, jungle, desert etc. <u>Can we find a minibeast?</u> Highlight different types of minibeasts we may encounter outdoors such as spiders, ladybirds, butterflies and spiders. Highlight the different places that these minibeasts live and where we can search for them. Children go in groups to find these animals, investigate their appearance, how they move and comment on similarities and differences between them. Children create observation drawings and diagrams to show the minibeasts they have found.	Discuss and view what is meant by the terms 'sink' and 'float'. Children make predictions about whether different materials could sink or float using the characters of the materials to support these predictions. Test their predictions by adding materials to water and observing what happens.	
Vocabulary	Explicit: cold, hot, rain, sunshine, fog, cloud	Explicit: tall, short, smell, body	Explicit: unhealthy, healthy, brush, teeth	Explicit: Minibeast, Flower, Bush, Flower, Plant, Grow	Explicit: Spring, Scientist <i>Featured Scientist: Eva Crane</i>	Explicit: Magnet, Season, Summer
Working scientifically	Children will work scientifically by: • asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions.					

5 Types of Scientific Enquiry (KS1 and KS2)

Each of the 5 types of scientific enquiry will be focused upon throughout Key Stage 1 and Key Stage 2:

- Research using secondary sources.
- Comparative and fair testing
- Observing over time
- Pattern seeking
- Identifying, classifying and grouping

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YEAR 1 Statutory	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. Use the different senses to compare different textures, sounds and smells.	Animals including humans 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. Children describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	Everyday materials Distinguish between an object and the material from which it is made. Children identify and name a variety of everyday materials. These include wood, plastic, glass, metal, water and rock. Describe the simple physical properties of everyday materials. These include wood, plastic, glass, metal, water and rock. Compare and group a variety of everyday materials based on their simple physical properties (e.g. flexible, rough, smooth, waterproof, absorb).		Seasonal changes Children observe changes across the four seasons. Children observe and describe weather associated with the seasons and understand how day length varies.	Plants Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify, name and describe the basic structure of common flowering plants and trees.
Non-statutory	Pupils should have plenty of opportunities to learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes. Use senses to compare different textures, sounds and smells.	Use the local environment throughout the year to explore and answer questions about animals in their habitat. Children should understand how to take care of animals taken from their local environment and the need to return them safely after study. Become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets.	Pupils should explore, name, discuss and raise and answer questions about everyday materials so that they become familiar with the names of materials and properties such as: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent. Pupils should explore and experiment with a wide variety of materials, not only those listed in the programme of study, but including for example: brick, paper, fabrics, elastic, foil.		Make tables and charts about the weather. Make weather displays of what happens in the world around them, including day length, as the seasons change.	Observe plants and trees closely, using magnifying glasses, and compare and contrast familiar plants. Become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem). Describe how we can identify and group plants. Draw diagrams showing the different parts of plants and trees.

		Using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them.	Perform simple tests to explore questions, such as "what is the best material for an umbrella?" and "what is the best material for a dog basket?"		Record how plants change over time, for example the leaves falling off and the buds opening. Compare and contrast findings of different plants.
RSHE links/previous learning	<u>RSHE link – being safe</u> Children know that each person's body is their own and the difference between appropriate and inappropriate or unsafe physical contact. <u>Links to Previous Learning:</u> Our bodies (Reception Autumn 2).	<u>Links to Previous Learning:</u> Animals including humans (Reception Spring 2).	<u>Links to Previous Learning:</u> Everyday Materials (Reception Spring 1 & 2).	<u>Links to Previous Learning:</u> Throughout Reception children have learned to name the seasons and common features/holidays within these seasons.	<u>Links to Previous Learning:</u> Animals & Plants (Reception Summer 1).
Vocabulary	Explicit: smell, taste, see, hear <i>Featured Scientist: Linda Buck</i>	Explicit: pet, fish, mammal, amphibian, reptile, bird	Explicit: material, waterproof, absorb, flexible	Explicit: Winter, Autumn, Summer, Spring, season, weather <i>Featured Scientist: Katharine Hayhoe</i>	Explicit: vegetables, habitat, growth, bulb, seed, root
YEAR 2 Statutory	<u>Uses of everyday materials</u> Identify and compare the suitability of a variety of different everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Investigate how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	<u>Animals including humans</u> Notice and observe that animals, including humans, have offspring. Offspring grow into adults. Research, find out and describe the basic needs of animals including humans, for survival. Describe the importance for humans to exercise, eat the right amounts of different types of food, and hygiene.	<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. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including microhabitats. 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.	<u>Plants</u> Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and an appropriate temperature to grow and stay healthy.	
Non-statutory	Compare the uses of everyday materials in and around the school with materials found in other places like at home, on the journey to school, on visits and in stories/rhymes/songs) and record their observations. Observe, identify and classify the uses of different materials and record observations. Identify and discuss the uses of different everyday materials so pupils become familiar with how some materials are used for more than one thing. Think about the properties of materials that make them	Introduce to the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans. They should also be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs. The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child, teenager, adult.	Sort and classify things according to whether they are living, dead or were never alive. Record findings using charts. Describe why things were placed where they were. Explore questions like "is a flame alive?" "is a deciduous tree dead in Winter?" and talk about different ways of answering the questions. Construct a simple food chain that includes humans. For example, grass → cow → human. Describe the conditions in different habitats and micro-habitats (under logs, on stony paths, under bushes) and explore how the conditions affect the number and types of plants that live there.	Observe and record, with some accuracy, the growth of a variety of plants as they change over time from a seed/bulb. Observe similar plants at different stages of growth. Set up a comparative test to show that plants need light and water to stay healthy. Discuss a fair test.	

	suitable or unsuitable for particular purposes and be encouraged to think about unusual and creative uses for everyday materials. Pupils might find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.	Children observe, through video or first-hand measurement, how different animals, including humans, grow. Explore and ask questions about what things animals need to survive and what humans need to stay healthy. Children suggest ways they can find answers to their questions.		
RSHE links/previous learning	<u>Links to Previous Learning:</u> Everyday Materials (Year 1 Spring 1 and 2).	<u>RSHE link – Healthy Eating</u> Children understand what constitutes a healthy diet, including calories and other nutritional content. <u>RSHE link – Mental Wellbeing and Physical Health</u> Understand the importance and benefits of physical exercise and community activities when incorporated into a routine, for mental wellbeing and happiness. <u>RSHE link – Health and Prevention</u> Discuss personal hygiene and how germs and viruses are spread and treated, and the importance of handwashing. <u>RSHE link – Ourselves growing and changing</u> Discuss growing and changing from young to old and how people's needs change over time. <u>Links to Previous Learning:</u> Humans (Year 1 Autumn 1) - Senses and naming common body parts.	<u>Links to Previous Learning:</u> Animals (Year 1 Autumn 2).	<u>Links to Previous Learning:</u> Plants (Reception Summer 1) & Plants (Year 1 Summer 2).
Vocabulary	Explicit: suitable, unsuitable, purpose <i>Featured Scientist: Charles Macintosh</i>	Explicit: exercise, diet, survival, basic needs	Explicit: compare, never been alive, dead, micro-habitat	Explicit: temperature, reproduction, record, germination, comparative test <i>Famous Scientist: Jane Colden</i>

YEAR 3 Statutory	<u>Rocks</u> Compare and group together different kinds of rocks based on 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.	<u>Forces and magnets</u> Compare how things can move on different surfaces. Observe and notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials based on whether they are attracted to a magnet or not, and identify some magnetic materials. Describe a magnet as having two poles. Predict whether two magnets will attract or repel, depending on which poles are facing.	<u>Animals including humans</u> Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	<u>Light</u> Recognise that they need light to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change.	<u>Plants</u> Identify and describe the functions of different parts of flowering plants: the 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 importance of flowers in the lifecycle of flowering plants, including pollination, seed formation and seed dispersal.
Non-statutory	Linked with work in geography, pupils should explore different kinds of rocks and soils, including those in the local environment. Observe a variety of rocks, including those used in buildings and gravestones, and explore how and why they might have changed over time. Use a hand lens or microscope to identify and classify rocks according to whether they have grains or crystals and whether they have fossils in them. Research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. Explore different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they	Observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). They should explore the behaviour and everyday uses of different magnets (for example, bar, ring, button and horseshoe). Compare how different things move and group them; raising questions and carrying out tests to investigate how far things move on different surfaces. Gather and record data to find answers to their questions. Explore the strengths of different magnets and find a fair way to compare them.	Continue to learn about the importance of nutrition. Be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions. Research different food groups and how they keep us healthy and design meals based on what is found out. Compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. Research different food groups and how they keep us healthy and design meals based on what they find out. Identify and group animals with and without skeletons and observe and compare their movement.	Explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. Think about why it is important to protect their eyes from bright lights. Note: Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses. Look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change. Look for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.	Pupils should be introduced to the relationship between structure and function: the idea that every part has a job to do. They should explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction. Compare the effect of different factors on plant growth, for example, the amount of light, the amount of fertiliser. Discover how seeds are formed by observing the different stages of plant life cycles over a period of time. Look for patterns in the structure of fruits that relate to how the seeds are dispersed. Observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observe how water travels up the stem to the flowers.

	are in water. They can raise and answer questions about the way soils are formed.	Sort materials into those that are magnetic and those that are not. Look for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another. Identify how these properties make magnets useful in everyday items and suggest creative uses for different magnets.	Explore what would happen if humans did not have a skeleton.		
RSHE links/previous learning	<u>Links to Previous Learning:</u> Materials (Year 2 Autumn 1).	<u>Links to Previous Learning:</u> Forces (Reception Summer 2).	<u>Links to Previous Learning:</u> Humans (Year 1 Autumn 1). Animals (Year 1 Autumn 2) Humans (Year 2 Autumn 2). <u>RSHE links – Healthy Eating</u> Understand what constitutes as a healthy diet and the characteristics of poor diet alongside the risks associated with unhealthy eating (obesity and tooth decay) and other behaviours (impact of alcohol on diet and health). Understand the principles of planning and preparing a range of healthy meals.	<u>Links to Previous Learning:</u> Seasonal Changes (Year 1 Summer 1).	<u>Links to Previous Learning:</u> Plants (Year 2 Summer 2).
Vocabulary	Explicit: rock, soil, identify, investigate, classify, properties <i>Featured Scientist: Marguerite Williams</i>	Explicit: magnet, force, repel, attract	Explicit: nutrition, meal, energy, contrast	Explicit: mirror, surface, measure, reflect, shadow, opaque, transparent	Explicit: pollination, seed dispersal, fertiliser, lifecycle <i>Featured Scientist: George Washington Carver</i>

Year 4 Statutory	Electricity Identify common appliances that run on electricity. Construct a simple series electrical circuit. Children should identify and name its basic parts including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit. Use this knowledge to decide whether or not a lamp will light in a simple series circuit. Recognise some common conductors and insulators. Associate metals with being good conductors.	Animals including humans Describe the simple functions of the basic parts of the human digestive system. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains. Children should identify producers, predators and prey.	Sound 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.	Living things and their habitats 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 the local and wider environment. Recognise that environments can change. Learn that this can sometimes pose dangers to living things.	States of matter 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 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.
Non-statutory	Construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices. Pupils should draw the circuit as a pictorial representation, not necessarily using conventional circuit symbols at this stage; these will be introduced in year 6. Observe patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.	Be introduced to the main body parts associated with the digestive system, for example, mouth, tongue, teeth, oesophagus, stomach and small and large intestine and explore questions that help them to understand their special functions. Compare the teeth of carnivores and herbivores and suggest reasons for the differences. Explore what damages teeth and how to look after them. Draw and discuss ideas about the digestive system and compare them with models or images.	Explore and identify the way sound is made through vibration in a range of different musical instruments from around the world. Find out how the pitch and volume of sounds can be changed in a variety of ways. Find patterns in the sounds that are made by different objects. For example, saucepan lids of different sizes or elastic bands of different thicknesses. Make earmuffs from a variety of different materials to investigate which provides the best insulation against sound. Children make and play own instruments by using what they have found out about pitch and volume.	Use the local environment throughout the year to raise and answer questions that help to identify and study plants and animals in their habitat. Identify how a habitat in the local environment changes throughout the year. Explore possible ways of grouping a wide selection of living things that include animals and flowering plants and non-flowering plants. Plants can be grouped into categories such as flowering plants (including grasses) and non-flowering plants, such as ferns and mosses. Begin to put vertebrate animals into groups such as fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects. Pupils should explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation.	Explore a variety of everyday materials and develop simple descriptions of the states of matter (solids hold their shape; liquids form a pool not a pile; gases escape from an unsealed container). Pupils should observe water as a solid, a liquid and a gas and should note the changes to water when it is heated or cooled. Avoid using materials where heating is associated with chemical change, for example, through baking or burning. Group and classify a variety of different materials. Explore the effect of temperature on substances such as chocolate, butter and cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party). Research the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. Observe and record evaporation over a period of time. For example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing drying or snowmen melting.

				Use and make simple guides or keys to explore and identify local plants and animals. Make a guide to local living things. Raise and answer questions based on observations of animals and what has been found out about other animals that have been researched.	
RSHE links/previous learning		<u>PSHE link – Health and Prevention</u> - (Year 3 recap) Know about dental health and the benefits of good oral hygiene. <u>Links to Previous Learning:</u> Animals including Humans (Y3 Spring 1).	<u>Links to Previous Learning:</u> Humans (Year 1 Autumn 1).	<u>Links to Previous Learning:</u> Living things and their habitats (Year 2 Spring).	<u>Links to Previous Learning:</u> Materials (Reception Spring 1 and 2 & Year 1 Spring 1 and 2). Everyday Materials (Year 2 Autumn 1).
Vocabulary	Explicit: complete, component, symbol, electricity, electrical circuit <i>Featured Scientist: Chanan Singh</i>	Explicit: producer, predator, prey, herbivore, omnivore, carnivore	Explicit: sound, volume, instrument, insulation	Explicit: vertebrate, invertebrate <i>Featured Scientist: Lu Zhi</i>	Explicit: heated, cooled, solid, liquid, gas, evaporate, condensation

					Observe changes in an animal over a period (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow.
RSHE links/previous learning	<u>Links to Previous Learning:</u> States of Matter (Year 4 Summer 2). Materials (Year 2 Autumn 1).	<u>Links to Previous Learning:</u> Forces and Magnets (Year 3 Autumn 2).	<u>RSHE link – Changing Adolescent Body</u> Understand key facts about puberty and the changing adolescent body from 9 – 11 years of age including emotional and physical changes. <u>RSHE link – Changing Adolescent Body</u> Understand menstrual wellbeing and facts about the menstrual cycle. <u>Links to Previous Learning:</u> Animals including humans (Year 4 Autumn 2). Humans (Year 3 Spring).		<u>Links to Previous Learning:</u> Animals (Year 2 Autumn 2). Plants (Year 2 Summer).
Vocabulary	Explicit: separated, formation, solubility, solution, conductivity, dissolve, filtering, fair test <i>Featured Scientist: Ruth Benerito</i>	Explicit: gravity, air resistance, water resistance <i>Featured Scientist: Isaac Newton, Gallileo</i>	Explicit: develop, mass, length, puberty, gestation period	Explicit: planet, earth, sun, moon, solar system, orbit <i>Featured Scientists: Ptolemy, Alhazen, Copernicus</i>	Explicit: sexual reproduction, asexual reproduction <i>Featured Scientists: Jane Goodall, Zuleyma Tang-Martinez</i>

Year 6 Statutory	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.	Light 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.	Animals including humans Identify and name the main parts of the human circulatory system. Describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function. Describe the ways in which nutrients and water are transported within animals, including humans.	Living things and their habitats Describe how living things are classified into broad groups, according to common observable characteristics and based on similarities and differences. This should include microorganisms, 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.
Non-statutory	Construct simple series circuits to help to answer questions about what happens when they try different components. Systematically identify the effect of changing one component at a time in a circuit.	Explore the way in which light behaves, including light sources, reflection and shadows. They should talk about what happens and make predictions. Decide where to place rear-view mirrors on cars. Designing and make a periscope and using the idea that light appears to travel in straight lines to explain how it works. Investigate the relationship between light sources, objects and shadows by using shadow puppets. They could extend their experience of light by looking a range of phenomena including	Explore how to keep bodies healthy and how bodies can be damaged including how some drugs and other substances can be harmful to the human body. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.	Introduce to the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Through direct observations where possible, classify animals into commonly found invertebrates and vertebrates. Discuss reasons why living things are placed in one group and not another. Find out about the significance of the work of scientists such as Carl Linnaeus. Use classification systems and keys to identify some animals and plants in the immediate environment. Research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.	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 when, for example, labradors are crossed with poodles. Appreciate that variation in offspring over time can make animals more or less able to survive in particular environments. Find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution. Observe and raise questions about local animals and how they are adapted to their environment. Compare how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels. Analyse the advantages and disadvantages of specific adaptations, such as being on two feet rather than

		rainbows, colours on soap bubbles, objects looking bent in water and coloured filters (they do not need to explain why these phenomena occur).			four, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.
RSHE links/previous learning	<u>Links to Previous Learning:</u> Electricity (Year 4 Autumn 1).	<u>Links to Previous Learning:</u> Light (Year 3 Spring 2).	<u>RSHE links – Physical Health and Fitness</u> Understand the mental and physical benefits of an active lifestyle. Understand the importance of building regular exercise into daily and weekly routines and how to achieve this. Understand the risk associated with an inactive lifestyle (obesity, tooth decay, diabetes). Discuss how and when to seek support including which adults to speak to in school about their health. <u>RSHE link – Drugs and Alcohol</u> Explain the facts about legal and illegal harmful substances and associated risks (smoking, alcohol use and drug-taking). <u>Links to Previous Learning:</u> Humans (Year 3 Spring 1 & Year 4 Autumn 2).	<u>Links to Previous Learning:</u> Living things and their habitats (Year 4 Spring 2).	<u>Links to Previous Learning:</u> Rocks (Year 3 Autumn 1).
Vocabulary	Explicit: voltage, function, position, motor	Explicit: cast, straight-line, beam, refraction, spectrum	Explicit: lifestyle, digestive system, health, circulatory system, heart, blood vessels, blood <i>Featured Scientist: Marie M Daley</i>	Explicit: micro-organisms, classification system, organism <i>Featured Scientist: Carl Linneaius and Ruth Ella Moore</i>	Explicit: fossil, offspring, inhabit, adapt, variation, evolution <i>Featured Scientist: Mary Anning, Charles Darwin</i>