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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	**Plants (1)** Identify plants in the wild and garden, including deciduous and evergreen trees.	**Animals, including Humans (1)** Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals: observe different animals have different characteristics and they have senses that help keep them alive.	**. Animals, including Humans (2)** Identify and name a variety of common animals that are carnivores, herbivores and omnivores: know that animals need a variety of food to survive, grow and repair their bodies, be active and stay healthy.	**Materials (1)** Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, metal, plastic, glass, water and rock	**Materials (2)** Describe the simple physical properties of a variety of everyday materials. Compare and group everyday materials on the basis of their simple properties. Know that properties of a material determine whether they are suitable for a purpose.	**Plants (2)** Identify and describe the basic structure of flowering plants: name the roots, trunk branches and leaves of a tree.
Year 2	**Materials (1)** Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	**Materials (2)** Find out how shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**Animals, including Humans (1)** Know that animals, including humans, have offspring which grow into adults. Find out and describe the basic needs of animals for survival (water, food and air).	**Animals, including humans (2)** Know the basic stages in a life cycle and the importance of exercise for humans as well as eating the right amounts of different types of food and hygiene.	**Living things and their habitats** Explore and compare the differences between things that are living, dead and never been alive. Identify that most living things live in a habitat to which they are suited and describe how these provide their basic needs, including micro habitats. Describe how animals obtain their food.	**Plants** Compare and describe the growth of different seeds and bulbs: describe how plants need water, light and warmth to grow and stay healthy.
Year 3	**Rocks** Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter. Know that there are different types of rocks and	**Forces and magnets (1)** Observe how magnets attract and repel each other and attract some materials and not others; note that magnets can work at a distance. Compare and group materials on the basis of whether they are attracted to a magnet and identify some magnetic materials. Describe magnets as having two poles and predict whether two magnets will attract or repel each other,	**Animals, including humans** Identify that animals, including humans need to the right amount of nutrition and cannot make their own food: how nutrients, water and oxygen are transported. Identify that humans and some other animals have skeletons and muscles for support: bones support bodies and protect organs and joints connect bones.	**Light** Recognise that they need light in order to see things and that dark is the absence of light: light comes from a source. Notice that light is reflected from surfaces. Know that light from the Sun can be dangerous and that there are ways of protecting their eyes. Recognise that shadows are formed when light from a light source is blocked by a solid object and find patterns	**Forces and magnets (1)** Compare how things move on different surfaces; note that some forces need contact between two objects. Know how a simple pulley works and make lifting an object simpler.	**Plants** Identify and describe the functions of different parts of a flowering plant: roots, stem/trunk/leaves and flowers including the part they play in the life cycle of plants. Know the way in which water is transported. Explain the requirements for plants to live and grow and how they vary from plant to plant.

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	soils and that they change over time. Relate different types of soils to the types of plants that grow in them. Know that palaeontologists use fossils to find out about the past.	depending on which way the poles are facing.		in the way that the sizes of shadows change.		
Year 4	**States of Matter** Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when heated or cooled and measure and research the temperature at which this happens in degrees Celsius. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperatures.	**Sound** Know how sound is made through vibrations and what happens as a sound travels from its source to our ears. Know the correlation between the volume of a sound and the strength of the vibrations that produced it. Know the correlation between pitch and the object producing a sound.	**Animals, including humans (1)** Identify the different types of teeth un humans and their simple functions. Describe the simple functions of the basic parts of the digestive system in humans: blood takes nutrients around the body.	**Animals, including humans (2)** Construct and interpret a variety of food chains, identifying producers, predators and prey: know that nutrients produced by plants move to primary consumers then to secondary consumers through food chains.	**Electricity** Identify common appliances that run on electricity. Construct a simple circuit naming its basic parts, including cells, wires, bulbs, switches and buzzers. Identify if a lamp will work or not based on whether or not the lamp is part of a complete loop, including the effects of a switch. Know the difference between a conductor and an insulator, giving examples.	**Living things and their habitats** Recognise that living things can be grouped in a variety of ways and explore how classification keys help group, identify and name a variety of living things in the local and wider environment. Recognise that environments can change and this can sometimes pose danger to living things.
Year 5	**Forces (1)** Explain that unsupported objects fall towards the Earth because of the force of gravity and the impact of gravity on our lives. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Know that some objects require large forces to make them move; gears, pulleys and levers can reduce the force needed to make things move.	**Earth and Space** Describe the movement of the Earth and other planets in relation to the Sun. Describe the movement of the Moon relative to the Earth. Describe the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.	**Forces (2)** Identify the effects of air resistance, water resistance and friction, which act on moving surfaces. Know that air resistance and water resistance are forces that act against motion caused by objects having to move air and water out of their way.	**All living things and their habitats** Identify and compare life cycles of different living things (mammal, amphibian, insect and bird). Know the process of reproduction in animals and plants. Know that different organisms have different life cycles.	**Properties of materials** 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. Know that some changes can be reversed and some cannot and that materials change state by heating or cooling. Explain that some changes result in the formation of new materials, including changes associated with	**Animals, including humans** Describe the changes as humans develop to old age. Know that different animals mature at different rates and live to different ages.

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					burning and the action of acid on bicarbonate of soda.	
Year 6	**Electricity** Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a circuit. Compare and give reasons for variations in how components function, use recognised symbols when drawing circuits.	**Living things and their habitats** Classify living things into broad groups according to observable characteristics and give reasons. Identify similarities and differences within species.	**Evolution and inheritance (1)** Know about evolution and explain what it is: how fossils tell us about the past. Identify how plants and animals are adapted to their environment in different ways and that adaptation may lead to evolution.	**Evolution and inheritance (2)** Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.	**Light** Recognise that light travels in straight lines and use that knowledge to explain that objects are seen because they give out or reflect light into the eye. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. Know how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.	**Animals, including humans** 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 their bodies functions.

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Key Theme

	Physics	Chemsitry	Biology
Year 1	Seasonal Change	Materials	Animals, including Humans Plants
Year 2	Seasonal Change	Materials	Animals, including Humans Living things and their habitats Plants
Year 3	Forces and magnets Light		Animals, including Humans Plants Rocks
Year 4	Sound Electricity	States of matter	Animals, including Humans Living things and their habitats
Year 5	Forces Earth and Space	Materials	Animals, including Humans All living things and their habitats
Year 6	Light Electricity		Evolution and inheritance Animals, including Humans Living things and their habitats

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Key knowledge

	Nursery	Reception
Autumn 1: Incredible Me **Science**	• The … floats • The … sinks	• I can identify two types of household waste (Plastic and cardboard) • Know how to respect and care for the natural environment

	Nursery	Reception
Autumn 2 Sparkle and Shine **Science**	• I can use the words - hard, spikey, squashy, smooth to describe how something feels • In autumn the leaves fall off the trees • When I …… (turn this over / pull this back / push this down …… (the beads go down/ the car goes/ it pops back up.	• Clay changes when you add water. • Chocolate melts when it is warm • Holly does not lose its leaves • Daffodils are planted in the Autumn • Know and demonstrate how to plant bulbs and predict how it will grow.

	Nursery	Reception
Spring 1 Once upon a Time **Science**	• Ice feels cold • Ice melts when it is warm	• I know some trees lose their leaves in winter. • Water can freeze. Ice can melt.

	Nursery	Reception
Spring 2 Out and About **Science**	• Some trees get new leaves in spring. • Flowers grow in spring. • Today it is _____ because I can see… (sunny, windy, icy, snow, rainy,cloudy, hot/cold)	• Daffodils and lambs are born and grow in springtime.

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	Nursery	Reception
Summer 1 Let it Grow- **Science**	• Plants need water and light to grow. • The life cycle of a butterfly - egg - caterpillar- cocoon - butterfly	• Life cycle of a duck - from egg, hatching into a duckling, fully grown duck • Seeds/beans need to have soil, water, warmth and light so they can thrive and grow. • In spring and summer it gets warmer. • Rubbish/litter can harm wildlife and the environment.

	Nursery	Reception
Summer 2 My World Your World **Science**	• I live on planet earth	• Know how to make simple choices to help the environment.

	Year 1	Year 2
Plants	• Some common wild plants are dandelions, daisies and clovers. • Some common garden plants are daffodils, tulips and roses. • A deciduous tree loses its leaves. • Some common deciduous trees are sycamore, oak and rowan. • An evergreen tree keeps its leaves and stays green all year round. • Some common evergreen trees are holly and Spruce. • A flower has roots, a stem, leaves, and petals.	• Seeds and bulbs grow into mature plants. • Most plants need water, light and a suitable temperature to grow and stay healthy. • If plants do not have water, light or a suitable temperature they will not survive.

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Animals including Humans	• Animals are grouped by their characteristics into fish, amphibians, reptiles, birds and mammals. • Animals who eat other animals are carnivores • Animals who eat only plants are herbivores • Animals who eat plants and animals are omnivores • Animals can have different structures. • We can compare an animal's structure by looking at its body parts • I see using my eyes, I taste using my tongue, I hear using my ears, I feel using my fingers, I smell using my nose • My five senses help me make sense of the world around me	• Offspring are babies of animals or humans. • Animals and humans have offspring which grow into adults • To survive animals need water, food and air. find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • To be healthy humans need to exercise. • To be healthy humans need a healthy diet. • Hygiene is keeping yourself clean including bathing, cleaning yourself and cleaning your teeth. • To be healthy humans need good hygiene.
Everyday Materials	• Everyday materials are wood, glass, plastic, metal, water and rock. • An object is made from a material. • A property is how you describe an object. • Properties are rough, smooth, hard, soft, stretchy, stiff, bendy, not bendy.	• Everyday materials can be used for different things. • Some materials are better suited than others for an object. • Solid objects can be changed by squashing, bending, twisting and stretching.
Seasonal Changes	• A season is a part of the year where the climate is different from the others. • It is lighter for more hours during the summer months • It is darker for more hours during winter months • Plants and flowers start to grow more in Spring • In Autumn many trees lose their leaves	
Living Things & their Habitats		• Some things are living. Living things can grow. • If something dies it no longer can grow. • A habitat is somewhere a plant or animal lives. • A microhabitat is a small place where plants and animals live. • Different living things need different habitats to survive.

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		• Some animals could not survive in certain habitats. *A chimpanzee could not survive in the arctic as it has no food to eat or thick fur to stay warm.* • Animals get their food from plants and other animals. • A food chain shows the order in which living things eat one another.
Working Scientifically		

	Year 3	Year 4
Plants	• Plants are producers; they make their own food. • Plants leaves absorb sunlight and carbon dioxide • Plants have roots, which provide support and draw water from the soil • Flowering plants have specific adaptations which help it to carry out pollination, fertilisation and seed production • Seed dispersal improves a plants chances of successful reproduction • Seeds/bulbs need the right conditions to germinate and grow. • Seeds contain enough food for the plant's initial growth	
Animals including Humans	• Different animals are adapted to eat different foods. • Many animals have skeletons to support their bodies and protect vital organs.	• Animals have teeth to help them eat. • Different types of teeth do different jobs. • Food is broken down by the teeth, stomach and intestines.

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	• Muscles are connected to bones and move them when they contract. • Movable joints connect bones.	• Nutrients go into the blood and the blood transports them around the body. • Energy produced by plants move to primary consumers then to secondary consumers through food chains. • Food chains begin with a producer and end with a predator • Prey is an animal that is eaten by other animals. • Predators eat other animals.
Rocks	• There are different types of rock. • There are different types of soil. • Soils change over time. • Different plants grow in different soils. • Fossils tell us what has happened before. • Fossils provide evidence. • Paleontologists use Fossils to find out about the past. • Fossils provide evidence that living things have changed over time.	
Light	• There must be light for us to see. Without light it is dark. • We need light to see things even shiny things. • Transparent materials let light through them and opaque materials don't let light through. • Beams of light bounce off some materials (reflection). • Shiny materials reflect light beams better than non-shiny materials. • Light comes from a source	
Forces & Magnets	• Magnets attract and repel each other.	

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	• A magnetic force is non contact. • A magnetic force travels through some materials. • Magnets exert attractive forces on some materials. • Magnet forces are affected by magnet strength, object mass, distance from object and object material.	
Living Things & their Habitats	N/A	• Living things can be divided into groups based upon their characteristics • Environmental change affects different habitats differently • Different organisms are affected differently by environmental change • Different food chains occur in different habitats • Human activity significantly affects the environment
States of Matter		• Solids, liquids and gases are described by observable properties. • Materials can be divided into solids, liquids and gases. • Heating causes solids to melt into liquids and liquids evaporate into gases. • Cooling causes gases to condense into liquids and liquids to freeze into solids. • The temperature at which given substances change state are always the same.
Sound		• Sound travels from its source in all directions and we hear it when it travels to our ears. • Sound travel can be blocked. • Sound spreads out as it travels. • Changing the shape, size and material of an object will change the sound it produces. • Sound is produced when an object vibrates. • Sound moves through all materials by making them vibrate. • Changing the way an object vibrates changes its sound. • Bigger vibrations produce louder sounds and smaller vibrations produce quieter sounds.

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		• Faster vibrations (higher frequencies) produce higher pitched sounds
Electricity		• A source of electricity (mains or battery) is needed for electrical devices to work. • Electricity sources push electricity round a circuit. • More batteries will push the electricity round the circuit faster. • Devices work harder when more electricity goes through them. • A complete circuit is needed for electricity to flow and devices to work. • Some materials allow electricity to flow easily and these are called conductors. • Materials that don't allow electricity to flow easily are called insulators.
Working Scientifically		

	Year 5	Year 6
Living Things & their Habitats	• Plants can reproduce sexually and asexually. Animals reproduce sexually. • Insects and Amphibians can go through complete and incomplete metamorphosis. • A bird's life cycle begins as an egg, chick, fledgling then adult bird. • A mammal life cycle begins with babies, young, and adults. A human life cycle differs with the adolescent phase.	• Carl Linnaeus created the Binomial naming system which is a two-part naming system to classify animals. • Microorganisms are living things that are too small to be seen with the naked eye. They are normally viewed using a microscope. • Living things are classified into groups known as the Five Kingdoms: Monerans, Protists, Fungi, Plant and Animal.
Animals including Humans	• There are six stages in the human life cycle: Foetus - At this time, a baby is growing inside its mum's womb. Baby - A baby is born after spending nine months inside the womb. Childhood - At this stage, you learn to walk and talk. Adolescence - Children become teenagers. Adulthood - Your body is fully developed. Old age -The last stage in the life cycle of a human.	• The circulatory system consists of three main parts: the heart, blood and blood vessels. • The heart is a powerful muscle that pumps blood around the body. • Blood vessels are tubes that carry blood around the body. • Blood is a red fluid that carries oxygen, nutrients, and hormones throughout the body. • Oxygen is breathed into the lungs where it is absorbed by the blood.

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	• Puberty occurs as a child enters adolescence. Changes that happen in both girls and boys: underarm hair grows, pubic hair grows, body smell gets stronger, emotional changes, growth rate increases.	• Muscles need oxygen to release energy from food to do work. (Oxygen is taken into the blood in the lungs; the heart pumps the blood through blood vessels to the muscles; the muscles take oxygen and nutrients from the blood.)
Properties & Changes in Materials	• Irreversible changes, like burning, cannot be undone. • Reversible changes, like melting and dissolving, can be changed back again. • Mixtures can be separated out by methods like filtering and evaporating. • Materials have different properties such as conductivity and transparency etc. which make them suitable or unsuitable for purpose. • Mixing substances to create a new material can cause an irreversible change. • Some materials can dissolve into liquid and we can use evaporation and condensation to recover the original materials.	
Electricity		• Batteries are a store of energy. This energy pushes electricity around the circuit. When the battery's energy is gone, it stops pushing. • Voltage measures the 'push.' • The greater the current flowing through a device, the harder it works. • Current is how much electricity is flowing round a circuit. When current flows through wires, heat is released. The greater the current, the more heat is released. • A series circuit is a circuit with one loop and to work, the circuit must be complete. • For a circuit to be complete, wires must be connected to both the positive and negative ends of the power supply. • The more cells (batteries) used in a circuit, the brighter the lamp or louder the buzzer will be. Brightness or volume depends on factors like the type of bulb or buzzer, resistance in the circuit, and not solely on the number or voltage of cells.
Forces	• Gravity is a pull force which causes objects to fall towards the Earth. • Friction, Air Resistance and Water Resistance are push forces that act upon moving objects, often slowing them down. • Some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect, making lifting and moving objects easier.	

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Light		• Animals see light sources when light travels from the source into their eyes. • Animals see objects when light is reflected off that object and enters their eyes. • Light reflects off all objects (unless they are black). Non shiny surfaces scatter the light so we don't see the beam. • Light travels in straight lines from a light source. • Height of a light source affects the length of a shadow. • Closeness of the light source to an object changes the size of a shadow.
Earth & Space	• All planets orbit around the sun. • The sun, Earth and Moon are approximately spherical in shape. • Order of the planets relative to the sun: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. • The Earth rotates on its axis, taking 24 hours for a full turn. When the Earth is facing the sun, it is day and when it is facing away, it is night. • It takes 28 days for the moon to orbit the Earth, causing a month, and there are 8 different phases.	
Evolution & Inheritance		• Evolution is the process by which living things can gradually change over time. • Inheritance is where you receive something from your parents. Children look different because they have inherited different features. • Variation is what makes us unique. Variation is when all living things produce offspring of the same kind, but there is a slight difference between offspring. • Adaptations of predators are: excellent vision, high speed, camouflage and sharp teeth / claws / beaks. • Adaptations of prey are: excellent vision, high speed, camouflage and defence. • Animals go extinct for different reasons including meteorites, diseases, volcanic eruptions, overhunting, ice ages and global warming. An animal is extinct when all of its members have died.
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