

	Class 1	Class 2 (Year 2)	Year 3 (Year 3)	Class 4 (Year 4/5)	Class 5 (Year 5/6)
Autumn 1 National Curriculum Objectives:	<p>Animals including humans</p> <ul style="list-style-type: none"> Identify, name draw and label the basic parts of the human body and say which part of the body is associated with each sense Name body parts How has what I eat changed Healthy eating <p>Seasonal changes</p> <ul style="list-style-type: none"> observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies. Seasonal changes Autumn 	<p>Animals including humans</p> <ul style="list-style-type: none"> notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 	<p>Magnets and friction</p> <ul style="list-style-type: none"> compare how things move on different surfaces 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 on the basis of whether they are attracted to a magnet, and identify some magnetic materials describe magnets as having two poles predict whether two magnets will attract or repel each other, depending on which poles are facing. <p>Vocabulary: Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole, move, movement, surfaces, contact, distance, magnetic materials</p>	<p>Classification/ environments year 4</p> <ul style="list-style-type: none"> 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 pose dangers to living things. construct and interpret a variety of food chains, identifying producers, predators and prey. <p>Vocabulary Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate, herbivore, carnivore, omnivore, producer, predator, prey, food chain</p>	<p>Year 5 Animals including humans</p> <p>Animals including humans</p> <ul style="list-style-type: none"> describe the changes as humans develop to old age. Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes experienced in puberty. Pupils could work scientifically by researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows.
Substantive knowledge:	<p>1. Can we name parts of the human body? <i>Name external parts of the body</i></p> <p>2. Can we name the five senses? <i>Name the senses and identify which part of the body is responsible to which sense</i></p> <p>3. Can we explore using our five senses? <i>Use senses to explore – what can we see? Hear? Smell? Touch? Taste?</i></p> <p>1. What do we know about weather? <i>Know what weather is and name some weather.</i></p> <p>2. Can I name the four seasons? <i>Name the four seasons and be able to order them</i></p> <p>3. How does the weather change across the seasons? <i>Identify typical weather from each season and begin to understand temperature</i></p> <p>4. How does a weather chart work and how can we measure rainfall? <i>Record the weather Make a rain gauge</i></p> <p>5. How can we record wind direction? <i>Begin to understand the scales used to measure wind.</i></p>	<p>1. Can you describe how animals have offspring which grow into adults? <i>Sort animals into different groups, such as amphibians or reptiles. group animals at different stages of growth by looking at what is similar and different.</i></p> <p>2. Can you describe how humans have offspring which grow into adults? <i>Foetus, baby, childhood, adolescence, adulthood, old age</i></p> <p>3. Can you research and describe the things animals, including humans need to survive? <i>Humans and animals need water, food and air to survive.</i></p> <p>4. Can you test the effects of exercise on the human body? (Page 22) <i>Exercise helps to build strong bones, muscle tone and good posture. It also helps you to remain flexible and maintain high energy levels and impacts on your mental health</i></p> <p>5. Can you describe the importance of healthy eating? <i>Supports physical development, improves mood, keeps illness away, maintain a healthy weight</i></p> <p>6. Can you describe the importance of hygiene? <i>Hygiene helps to reduce the risk of illness, build self-esteem and teach life skills and ensures safety, prevent</i></p>	<p>1. What is a contact and non-contact force? <i>I know that some forces, such as pushes and pulls, need contact to act. I know that some forces, such as magnetic forces, act without contact.</i></p> <p>2. Which materials are magnetic? <i>Most metals are magnetic but some alloys and metals are not (i.e. copper and gold)</i></p> <p>3. How do magnets vary in strength and what affect can this have? <i>I know that magnets can vary in strength. I know that a stronger magnet can attract magnetic objects from a greater distance than a weaker magnet.</i></p> <p>4. How do magnets interact with one another? <i>I can describe magnets as having North and South Poles. Magnets have a North and South Pole and opposites attract and the same Poles repel</i></p> <p>5. How do things move differently on different surfaces? <i>I know that different amounts of force are needed to move an object on different surfaces.</i></p>	<p>1. How can we group animals? <i>-Animals can be grouped in a variety of ways based on their characteristics, habitats and size, producers, predators and prey, vertebrates, invertebrates</i></p> <p>2. How do you use a classification key to identify familiar organisms? <i>To be able to classify animals from their wider environment by using a key to correctly place animals.</i></p> <p>3. Investigate the local area to create your own classification key. Living things live in a habitat which provides an environment to which they are suited (Year 2 learning).</p> <p>4. How does a habitat change and how can this pose dangers to living things? <i>These environments may change naturally e.g. through flooding, fire, earthquakes etc. Humans also cause the environment to change. This can be in a good way (i.e. positive human impact, such as setting up nature reserves) or in a bad way (i.e. negative human impact, such as littering). These environments also change with the seasons; different living things can be found in a habitat at different times of the year.</i></p> <p>5. Can I produce and interpret food chains and identify the predator, prey and producers?</p>	<p>1. What are the different stages of the human lifecycle? Humans go through key life stages: infancy, childhood, adolescence, adulthood and old age.</p> <p>2. How does life begin and what happens during gestation? <i>-research the different gestation periods of different animals. Uman life begins with fertilisation and gestation lasts around 9 months and involves major stages of fetal development.</i></p> <p>3. How do humans develop from babies to children? <i>Babies grow rapidly, they learn to walk, talk and develop key motor and communication skills.</i></p> <p>3. How do humans develop during puberty and adolescence? <i>Puberty includes growth spurts, body hair, voice changes, mood changes and menstruation in girls and changes in boys.</i></p> <p>4. What changes take place in adulthood? <i>During adulthood you are at peak physical health, reproduction may happen.</i></p> <p>5. What happens to our bodies as we get older? <i>In old age, physical strength and senses decline, memory and mobility may reduce, aging continues</i></p> <p>6. Can I create a human timeline, describing each stage of human development?</p>

	<p><i>Make a windsock</i></p> <ol style="list-style-type: none"> 1. Can you name your body parts? 2. How does my body work? 3. How have I changed since being a baby? 4. How has what I've eaten changed? 5. What are the signs of autumn? 				
<p>Autumn 2</p> <p>National Curriculum objectives:</p>	<p>Animals including humans Y1</p> <ul style="list-style-type: none"> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify, name a variety of common animals that are carnivores, herbivores & omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) <ul style="list-style-type: none"> Natural world Animals and observations Nocturnal animals 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> 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 micro-habitats <p>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.</p>	<p>Animals including humans</p> <ul style="list-style-type: none"> 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. <p>Vocabulary: Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints, diet, movement</p>	<p>Y5 Forces</p> <ul style="list-style-type: none"> explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object identify the effects of air resistance, water resistance and friction, that act between moving surfaces recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. <p>Vocabulary Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears, upthrust</p>	<p>Year 6 Humans and Health</p> <ul style="list-style-type: none"> identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans. <p>Vocabulary Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle, disease, air, breathing</p>
<p>Substantive knowledge:</p>	<p>1. What is the difference between living and non-living things? <i>Identify and name living and non-living things and things that have never been alive</i> <i>Know what a living thing is</i></p> <p>2. What is the difference between an invertebrate and a vertebrate? <i>Know that invertebrates do not have a backbone, but vertebrates do.</i></p> <p>3. Which animals are vertebrates? <i>Name animals which are vertebrates</i></p> <p>4. Which animals are invertebrates? <i>Name animals which are invertebrates</i></p> <p>5. What are the differences between mammals and birds? <i>Know the characteristics of birds and mammals</i></p>	<p>1. Can you name the common characteristics shared by all living things? <i>Living things move, feed, grow, reproduce and use their senses.</i></p> <p>2. Can you explore and compare differences between things that are living, dead, and things that have never been alive? <i>A living thing is something that is currently alive and needs food, air and water to stay alive. Something that is dead was once living but is no longer alive.</i> <i>A non-living thing is something that has never been alive.</i></p> <p>3. Can you describe how animals obtain their food from plants and other animals, using a simple food chain? <i>Food chain means eaten by.</i></p> <p>4. Can you identify organisms as producers, consumers, or decomposers? <i>A producer is an organism that makes its own food. A consumer is a living thing that eats other plants and animals. A decomposer is a living thing that breaks down dead plants, animals, or waste.</i></p> <p>5. Can you identify invertebrates in micro-habitats through a wildlife survey? <i>Invertebrates are animals that don't have a backbone. Some have soft bodies, like worms, slugs</i></p>	<p>1. What types of nutrition do we need? <i>Animals including humans need a balanced diet including: protein, carbohydrates, fats, fibre. dairy, water, vitamins and minerals.</i></p> <p>2. What is a balanced diet? <i>Need to eat a combination of the food plate in moderation</i></p> <p>3. How does our skeleton help us? <i>A skeleton provides support for muscles and protects vital organs</i></p> <p>4. Do our bones affect what we can do? <i>Our bones allow us to create and generate movement</i></p> <p>5. What do our muscles do? Muscles <i>Muscles permit movement of the body, maintain posture, and circulate blood throughout the body</i></p> <p>6. Do all animals have a skeleton? <i>Investigate which animal species have an endoskeleton, exoskeleton or none</i></p>	<p>1. What is a force? <i>A force is a push or a pull</i></p> <p>2. What is gravity? <i>Gravity is the force which pulls objects down towards the earths centre</i></p> <p>3. What is friction? <i>Friction is a force between two surfaces when one attempts to move across the other. The friction increases when the surfaces are rough, smooth surfaces have less friction.</i> <i>Friction slows an object down</i></p> <p>4. What is the effect of air-resistance on a moving object? <i>Air resistance is a type of friction, between air and another material. Air resistance can slow things down. To increase the level of air resistance you increase the surface area of the object. A more streamline shape will decrease the amount of air-resistance and make the object faster.</i></p> <p>5. What is water resistance? <i>Water resistance is a type of friction, between water and another material. Water resistance can slow things down. To increase the level of Water resistance you increase the surface area of the object. A more</i></p>	<p>1. What are the main parts of the circulatory system? <i>The main parts of the circulatory system are the heart, the blood and the blood vessels</i></p> <p>2. What is the function of the heart? <i>The main function of the heart is to pump oxygenated blood around the body</i></p> <p>3. What is the function of the blood vessels? <i>Arteries carry oxygenated blood away from the heart or deoxygenated blood to the lungs</i> <i>Veins carry deoxygenated blood from the body into the heart and oxygenated blood from the lungs into the heart</i> <i>Capillaries transfer oxygen and nutrients to cells in the body's tissue</i></p> <p>4. What is the function of the blood? <i>Red blood cells- carry oxygen around the body</i> <i>White blood cells- defends the body against infection</i> <i>Platelets- forms a scab at the site of a cut</i> <i>Plasma- carries cells and nutrients through blood vessels</i></p> <p>5. What is the impact of exercise on the body? <i>Increased heart rate- heart pumps more oxygenated blood around the body as the muscles</i></p>

	<p>Compare the characteristics of birds and mammals</p> <p>6. What are the differences between fish and reptiles? Know the characteristics of fish and reptiles</p> <p>Compare the characteristics of fish and reptiles</p> <p>7. What type of food do living things eat? Know the terms carnivore, herbivore and omnivore and name some animals belonging to each group.</p> <p>1. Why do we have day and night? 2. How do we see at night? 3. What happens at night? 4. What observations can I make on local animals? 5. What observations can I make on nocturnal animals?</p>	<p>6. Can you identify the habitat of animals noting how they have adapted to suit their habitat? Animals have adapted their physical characteristics or behaviours to give them an advantage when it comes to survival e.g. giraffes and their necks</p>		<p>streamline shape will decrease the amount of water-resistance and make the object faster.</p> <p>6. What mechanisms can you use to make a smaller force? Gears, pulleys and levers can be used to make a smaller force have a greater effect.</p>	<p>need more oxygen, better blood circulation, better stamina, having more energy, not becoming overweight.</p> <p>6. What is the impact of diet on the body? Diet can affect energy, weight, recovery time from injuries, ability to fight off infections</p> <p>7. What is the impact of drugs and lifestyle on the body? Addictions, sleep affects wellbeing, energy levels, drugs can make you sick, cigarettes can affect lungs, mood.</p>
Spring 1 National Curriculum objectives:	<p>Everyday materials: Y1</p> <ul style="list-style-type: none"> Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties <p>• Changing states of matter • Floating and sinking</p>	<p>Uses of materials</p> <ul style="list-style-type: none"> identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching 	<p>Rocks , soils and fossils</p> <ul style="list-style-type: none"> 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. <p>Vocabulary: Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil, organic matter, sedimentary rock</p>	<p>Year 6 Humans and Health</p> <ul style="list-style-type: none"> identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans. <p>Vocabulary Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle, disease, air, breathing</p>	<p>Y6 Evolution</p> <ul style="list-style-type: none"> recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <p>Vocabulary Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils, evolution, evolve, adaptation, variation, inherit, inheritance</p>
Substantive knowledge:	<p>1. What is a material? Know that materials are non-living Identify and name common materials around the classroom</p> <p>2. What are objects made from? Be able to name materials that everyday objects are made from.</p> <p>3. How can I describe an object? Explore and investigate materials, use scientific language to describe their properties such as hard, soft,</p>	<p>1. What are materials? Know the names of materials fabric, wood, plastic, metal, stone, glass.</p> <p>2. What are things made from? Know/name the material objects are made from and explain why.</p> <p>3. Which materials should pigs make their house from? Know that a house needs to be strong and waterproof. Test materials to see which are strong and waterproof materials.</p> <p>4. Which material will protect Humpty Dumpty?</p>	<p>1. What are the properties of rocks? Rock is a naturally occurring material. Rocks can be hard or soft. They have different sizes of grain or crystal. They may absorb water. Rocks can be different shapes and sizes (stones, pebbles, boulders).</p> <p>2. Can I group different types of rocks based on their properties? There are different types of rock e.g. sandstone, limestone, slate etc. which have different properties.</p> <p>3. How is soil made? Soils are made up of pieces of ground down rock which may be mixed with plant and</p>	<p>1. What are the main parts of the circulatory system? The main parts of the circulatory system are the heart, the blood and the blood vessels</p> <p>2. What is the function of the heart? The main function of the heart is to pump oxygenated blood around the body</p> <p>3. What is the function of the blood vessels? Arteries carry oxygenated blood away from the heart or deoxygenated blood to the lungs Veins carry deoxygenated blood from the body into the heart and oxygenated blood from the lungs into the heart</p>	<p>1. How are offspring similar or different to their parents? - that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents -inherited characteristics are passed on from parents to offspring and this can lead to variation. inheritance, variation, characteristics, offspring (inherited characteristics/acquired characteristics)</p>

	<p><i>bendy, transparent, opaque, absorbent and waterproof</i></p> <p>4. Which materials float and sink?</p> <p><i>Properties of materials – heavy and light</i></p> <p><i>Investigation</i></p> <p><i>Name materials that float and sink</i></p> <p>5. Which materials are waterproof?</p> <p><i>Properties of materials – waterproof and absorbent</i></p> <p><i>Investigation</i></p> <p><i>Name materials that are waterproof and absorbent</i></p> <p>6. Which material is best for different objects?</p> <p><i>Properties of materials</i></p> <p><i>Sort facts about materials using knowledge of properties</i></p> <p>1. What will happen when we put something in the water?</p> <p>2. What will happen to water when it is put into the freezer?</p> <p>3. What can we do to stop the ice from melting?</p> <p>4. How can we release an object from ice?</p>	<p><i>Know which materials are breakable.</i></p> <p>5. How can we change materials?</p> <p><i>Know that some materials can change shape by twisting, bending and stretching.</i></p>	<p><i>animal material (organic matter). The type of rock, size of rock pieces and the amount of organic matter affect the property of the soil.</i></p> <p>4. How are fossils formed?</p> <p><i>Some rocks contain fossils. Fossils were formed millions of years ago. When plants and animals died, they fell to the seabed. They became covered and squashed by other material. Over time the dissolving animal and plant matter is replaced by minerals from the water</i></p> <p>5. What are rocks used for and why?</p> <p><i>Granite, Limestone, Chalk, Slate, Marble, sandstone, Quartz, Clay</i></p>	<p><i>Capillaries transfer oxygen and nutrients to cells in the body's tissue</i></p> <p>4. What is the function of the blood?</p> <p><i>Red blood cells- carry oxygen around the body</i></p> <p><i>White blood cells- defends the body against infection</i></p> <p><i>Platelets- forms a scab at the site of a cut</i></p> <p><i>Plasma- carries cells and nutrients through blood vessels</i></p> <p>5. What is the impact of exercise on the body?</p> <p><i>Increased heart rate- heart pumps more oxygenated blood around the body as the muscles need more oxygen, better blood circulation, better stamina, having more energy, not becoming overweight.</i></p> <p>6. What is the impact of diet on the body?</p> <p><i>Diet can affect energy, weight, recovery time from injuries, ability to fight off infections</i></p> <p>7. What is the impact of drugs and lifestyle on the body?</p> <p><i>Addictions, sleep affects wellbeing, energy levels, drugs can make you sick, cigarettes can affect lungs, mood.</i></p>	<p>2. How and why have plants and animals adapted over time to suit their environment in different ways?</p> <p><i>Plants and animals have adapted overtime to survive in their habitat. These changes have occurred through inherited characteristic.</i></p> <p><i>Suited, environment, adapt, adaptation, inherit, evolve</i></p> <p>3. How can adaptations lead to evolution?</p> <p><i>As animals adapt to their environment, some animal adaptations are beneficial. Because they are better adapted to their environment, they are more likely to survive and reproduce. This leads to natural selection as it is more likely for this variation to carry on through production and get passed down through generations until the species has changed over time.</i></p> <p><i>Species, evolution, variation, evolve</i></p> <p>5 Who are the pioneers that researched evolution?</p> <p><i>scientists such as Darwin and Wallace observed how living things adapt to different environments to become distinct varieties with their own characteristics.</i></p> <p>6. What are fossils and what can we learn from them?</p> <p><i>Fossils give us evidence of what lived on the Earth millions of year ago and provide evidence to support the theory of evolution</i></p>
<p>Spring 2</p> <p>National Curriculum objectives:</p>	<p>All of class one:</p> <p>Pioneer & Leaders</p> <ul style="list-style-type: none"> • What is a pioneer? • What is a leader? • What questions would I ask them? • Seasonal changes Spring • Observing life cycles, including butterflies/honey bees/frogs/chickens 	<p>Pioneers & Leaders</p> <ul style="list-style-type: none"> • What is a pioneer? • What is a leader? • If you could ask this person 5 questions, what would you ask? • 	<p>Pioneers And Leaders</p> <ul style="list-style-type: none"> • What is a pioneer? • What is a leader? • If you could ask this person 5 questions, what would you ask? 	<p>Pioneers and Leaders</p> <ul style="list-style-type: none"> • What is a pioneer? • What is a leader? • Who is Eriona Hysolli? • What is she currently doing? • What is permafrost? • Should scientists be trying to recreate the woolly mammoth by 2027? (ethical discussion) 	<p>Pioneers And Leaders</p> <ul style="list-style-type: none"> • What is a pioneer? • What is a leader? • If you could ask this person 5 questions, what would you ask?

Substantive knowledge:	<p>1. Who is David Attenborough? 2..What has he done in his lifetime? 3..What questions would you ask him? 5.What changes can we see on the ground and above our head? 6. Can I recognise that some offspring don't look like their parent? 7.Can I explain the stages of a cycle?</p>	<p>1.Who Jane Goodhall 2. What has she done with her lifetime? 3. What questions could you ask her? 4. Why is she inspiring?</p>	<p>1. Who is Maggie Aderin-Pocock 2. What has she done with her life? 3. What questions could you ask her? 4.Why is she inspiring?</p>	<p>Eriona Hysolli is working with a team of scientists to try and genetically engineer the woolly mammoth to bring it back in 2027.</p> <p><i>Task- create a presentation explaining Eriona Hysolli and her work, arguments for, arguments against.</i></p> <p><i>Experiment- create an experiment based on permafrost investigating the best materials to keep ice frozen.</i></p>	<p>1.Who is Dr Mya-Rose Craig? 2.. What has she done with her life? 3. What questions could you ask her? 4.Why is she inspiring?</p>
Summer 1 National Curriculum objectives:	<p>Y1: plants</p> <ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees <p>Observe plants and draw pictures</p> <ul style="list-style-type: none"> What plants need to grow, including planting sunflower seeds, investigation into growing cress in different conditions 	<p>Plants</p> <ul style="list-style-type: none"> observe and describe how seeds and bulbs grow into mature plants (<i>plant bulbs in Autumn Term</i>) find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<p>Plants</p> <ul style="list-style-type: none"> 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 from soil, and room to grow) and how they vary from plant to plant investigate the way in which water is transported within plants explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. <p>Vocabulary: Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal), functions, nutrients, nutrition, air, transport (water), life cycle, reproduce, fertiliser</p>	<p>Year 6 electricity Y6: Electricity</p> <ul style="list-style-type: none"> 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. <p>Vocabulary: Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage, components, symbols</p>	<p>Light</p> <ul style="list-style-type: none"> 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. <p>Vocabulary Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous, reflective surface straight lines, light rays, periscope</p>
Substantive Knowledge:	<p>1. How do I plant a bean? <i>Know what a seed needs to grow. Know there are different types of seeds. Plant a seed in conditions so it will grow.</i></p> <p>2. What types of plants grow in the wild? <i>Know that some plants and flowers grow in the wild. Name common British wild flowers: daisies, dandelions, cow parsley, poppy, lavender</i></p> <p>3. What is the difference between deciduous and evergreen trees? <i>Know there are two types of tree. Be able to distinguish between them looking at leaves.</i></p> <p>4. What are the parts of plants and trees called? <i>Name root, stem, leaf, flower, branch, petal Know what the job of each part is.</i></p>	<p>1. Can I name and describe the purpose of parts of a flowering plant? <i>Be able to name the stem, root, flower, stalk and roots and describe their function.</i></p> <p>2. Can I group and classify plants based on a common criteria? <i>Be able to justify why you have grouped you plants in a specific way.</i></p> <p>3. Can I plan and carry out a comparative test? <i>Be able to distinguish between a plant and a seed. Be able to plant seeds and bulbs to compare growth making it a fair test. Be able to make predictions.</i></p> <p>4. Can I observe changes over a period of time? <i>Be able to devise a chart to record data. Be able to describe the signs of germination they are looking for.</i></p> <p>5. Can I describe how plants need water, light and a suitable temperature to grow and stay healthy? <i>Know that plants need sunlight, correct temperature and water to survive.</i></p> <p>6. Can test what plants need to survive? <i>Know what a fair test is.</i></p>	<p>1. What are the functions of the different parts of flowering plants? <i>Root, stem/trunk, leaves and flowers, Roots: Anchor the plant in the soil and help it absorb water, Stem: Supports the plant and carries water to the leaves, Leaves: Use sunlight to make food for the plant, Flowers: Produce seeds to make new plants</i></p> <p>2.How is water transported within plants? <i>Roots absorb water from the soil where the plant is planted. Then, the water travels through the plant to the stem and then the stem passes water on to the leaves. Water evaporates from the leaves into the atmosphere. This process is called transpiration.</i></p> <p>3. Do different plants need different things to survive? <i>The amount of light, water, nutrients, air, and proper temperature that a plant need varies by species.</i></p> <p>1. What is the life-cycle of a flowering plant? <i>Germination, Pollination, Seed formation, fruit development and seed dispersal.</i></p>	<p>1. What is electricity? <i>Electricity is a flow of charged particles. An important form of energy, electricity powers things around us. We use it every day in our homes to power lights, TV, computers, fridges and ovens.</i></p> <p><i>Electricity is the name given when a number of atoms are together, and electrons are moving from one to the other in the same direction. So, electricity is simply the flow of these charged electrons</i></p> <p>2. What are the symbols used in circuits? <i>All the symbols, Wire must be straight line, how to draw a buzzer on a circuit correctly.</i></p> <ul style="list-style-type: none"> Simple circuit- one flow of electricity, usually one bulb Parallel circuit- more than one flow of electricity usually used for multiple lamps such as fairy lights <p>3. How does the number of cells used in a circuit affect the brightness of a lamp or the volume of the buzzer? (How does the number of cells affect a circuit?)</p>	<p>1. How does light travel? <i>-Light travels in straight lines Light, light source, light rays</i></p> <p>2. How do eyes allow us to see? <i>Sclera is the white part of the eye, the pupil lets the light in, the lens is a transparent layer which focuses light, optic nerve transports signal from the retina to the brain, the iris is the coloured part of the eye and it controls the size of the pupil, the cornea is transparent and covers the iris and pupil.</i></p> <p>3. How do we see things? <i>Dark, absence of light, surface, straight lines, reflect</i></p> <p>4. why do shadows have the same shape as objects and how are they formed? <i>Shape of the shadow stays the same because the objects outline doesn't bend around it- Transparent, Opaque, Translucent, Straight line, Light source</i></p> <p>4.How can you change shadows? <i>It depends on the distance from the light source and the angle of the light and if the object is transparent or more opaque to change the colour.</i></p>

	<p>5. What changes occur to a tomato plant? Know the term germination Know that some food plants are roots, some leaves and some fruit Observe what happens when a slice of tomato is planted.</p> <p>6. What changes occurred to my bean plant? Explain what changes have occurred over time. Use the terms germinate, stem, leaf, root.</p> <p>1. Can I draw and label pictures of plants? 2. What does a plant need to grow? 3. What do I need to do in order for a sunflower seed to become a plant? 4. Do all seeds look the same? 5. Does cress grow differently in different places?</p>	<p>Know that plants will not grow as well with no sunlight or water.</p>	<p>2. What are the methods of pollination in flowering plants? Wind, water, animals</p> <p>3. How do seeds in flowering plants disperse? Wind, water and animals</p>	<p>The more cells used in a circuit, the brighter the bulb. This is because each cell will have a certain number of volts. (With 1 cell the bulb will have e.g. 5V of electricity, with 2 cells they would have e.g. 10V of electricity and therefore be brighter.) If you add more bulbs to the circuit, the voltage is halved between both the bulbs so therefore are dimmer.</p> <p>4. How does the Voltage of cells used in a circuit affect the brightness of a lamp or the volume of a buzzer? (How does the voltage of cells used in a circuit affect a circuit?)</p> <p>The more voltage within a circuit the brighter the bulb. The more voltage within a circuit the louder the buzzer. This is because it increases the flow of electrons/adds more power to the circuit.</p> <p>5. Can you compare and give reasons for variations in how components function? (Wire batteries, switches, bulbs, resistors, and capacitors)</p> <p>Through varying components, different results can be achieved, such as: adding more buzzers, bulbs or motors would result in dimmer, quieter or slower components; altering wire length affects the brightness, sound or speed, of bulbs, buzzers and motors; varying the position/composition of switch affects the function of the circuit.</p> <p>6. Can you create a simple device/game using a simple circuit?</p>	<p>5. What is reflection? Reflection happens when light bounces off a surface. Shiny surfaces reflect light clearly- build a periscope. Reflection allows us to see an object that does not emit its own light.</p> <p>6. What is refraction? Refraction is the bending of light when it passes through one material into another (e.g. from air into water). This happens because light happens at different speeds and it makes an object appear bent. Lenses use refraction to focus light.</p> <p>7. What are the colours within white light? White light such as sunlight is made up of red, orange, yellow, green, blue, indigo and violet. A prism or water droplets can split light called dispersion (Link to rainbows)</p>
<p>Summer 2</p> <p>National Curriculum objectives:</p>	<p>Y1: Seasonal changes Seasonal Changes</p> <ul style="list-style-type: none"> observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies. <ul style="list-style-type: none"> Day and night How we see at night <p>Awe and wonder</p>	<p>Plants (continued)</p> <p>Scientific Enquiry (Awe & Wonder)</p> <ul style="list-style-type: none"> Paper towel colour mixing experiment (materials recap) Recap – what did we do? What happened and why? Plastic bag parachutes – materials investigation Egg drop activity Design a sports kit - Explorify What is the best material for an umbrella? Come up with a test to decide which material would be best for an umbrella. Bees link: Create habitats for endangered animals/ create a hive. 	<p>Light</p> <ul style="list-style-type: none"> 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 recognise that light from the sun can be dangerous and that there are ways to protect their eyes recognise that shadows are formed when the light from a light source is blocked by a solid object find patterns in the way that the size of shadows change. <p>Vocabulary Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous, reflective surface</p>	<p>Year 6 evolution</p> <p>Evolution</p> <ul style="list-style-type: none"> recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <p>Vocabulary Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils, evolution, evolve, adaptation, variation, inherit, inheritance</p>	<p>Y6: Electricity</p> <ul style="list-style-type: none"> 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. <p>Vocabulary: Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage, components, symbols</p>
<p>Substantive Knowledge:</p>	<p>1. What do we know about weather? Know what weather is and name some weather.</p> <p>2. Can I name the four seasons? Name the four seasons and be able to order them</p> <p>3. How does the weather change across the seasons?</p>	<p>7. Can I identify and name a variety of plants in their habitats and micro habitats? Know what habitats and micro-habitats are. Know that different types of plants thrive in different habitats.</p>	<p>1. How can we see things? We see objects because our eyes can sense light. Dark is the absence of light. We cannot see anything in complete darkness.</p> <p>7. What are light sources? Some objects, for example, the sun, light bulbs and candles are sources of light. Objects are easier to see if there is more light. Some surfaces reflect light. Objects are easier to see when there is less light if they are reflective.</p>	<p>1. How are offspring similar or different to their parents? - that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents -inherited characteristics are passed on from parents to offspring and this can lead to variation. inheritance, variation, characteristics, offspring (inherited characteristics/acquired characteristics)</p>	<p>5. What is electricity? Electricity is a flow of charged particles. An important form of energy, electricity powers things around us. We use it every day in our homes to power lights, TV, computers, fridges and ovens.</p> <p>Electricity is the name given when a number of atoms are together, and electrons are moving from</p>

<p>Identify typical weather from each season and begin to understand temperature</p> <p>4. How does a weather chart work and how can we measure rainfall? Record the weather Make a rain gauge</p> <p>5. How can we record wind direction? Begin to understand the scales used to measure wind. Make a windsock</p> <ol style="list-style-type: none"> 1. Why we have day and night 2. How do I see at night – explore light sources, including making shadows 3. How I stay safe at night <p>Awe and wonder:</p> <ul style="list-style-type: none"> • Dancing raisins • Making bubbles • Cornflour slime • Set up a rainwater collection tank outside your classroom- How long does it take to reach a certain level? Does it ever overflow? Is that expected or unexpected? • Science in stories: The Emperor's new clothes Energising Futures 		<p>8. How can we need to look after our eyes? The light from the sun can damage our eyes and therefore we should not look directly at the sun and can protect our eyes by wearing sunglasses or sunhats in bright light.</p> <p>9. What is a shadow? Shadows are formed on a surface when an opaque or translucent object is between a light source and the surface and blocks some of the light.</p> <p>10. How can shadows change? The size of the shadow depends on the position of the source, object and surface.</p>	<p>2. How and why have plants and animals adapted over time to suit their environment in different ways? Plants and animals have adapted overtime to survive in their habitat. These changes have occurred through inherited characteristic. Suited, environment, adapt, adaptation, inherit, evolve</p> <p>3. How can adaptations lead to evolution? As animals adapt to their environment, some animal adaptations are beneficial. Because they are better adapted to their environment, they are more likely to survive and reproduce. This leads to natural selection as it is more likely for this variation to carry on through production and get passed down through generations until the species has changed over time. Species, evolution, variation, evolve</p> <p>11. Who are the pioneers that researched evolution? scientists such as Darwin and Wallace observed how living things adapt to different environments to become distinct varieties with their own characteristics.</p> <p>12. What are fossils and what can we learn from them? Fossils give us evidence of what lived on the Earth millions of year ago and provide evidence to support the theory of evolution</p>	<p>one to the other in the same direction. So, electricity is simply the flow of these charged electrons</p> <p>6. What are the symbols used in circuits? All the symbols, Wire must be straight line, how to draw a buzzer on a circuit correctly.</p> <ul style="list-style-type: none"> ▪ Simple circuit- one flow of electricity, usually one bulb ▪ Parallel circuit- more than one flow of electricity usually used for multiple lamps such as fairy lights <p>7. How does the number of cells used in a circuit affect the brightness of a lamp or the volume of the buzzer? (How does the number of cells affect a circuit?) The more cells used in a circuit, the brighter the bulb. This is because each cell will have a certain number of volts. (With 1 cell the bulb will have e.g. 5V of electricity, with 2 cells they would have e.g.10V of electricity and therefor be brighter.) If you add more bulbs the circuit, the Voltage is halved between both the blubs so therefor are dimmer.</p> <p>8. How does the Voltage of cells used in a circuit affect the brightness of a lamp or the volume of a buzzer? (How does the voltage of cells used in a circuit affect a circuit?) The more voltage within a circuit the brighter the bulb. The more voltage within a circuit the louder the buzzer. This is because it increases the flow of electrons/adds more power to the circuit.</p> <p>5. Can you compare and give reasons for variations in how components function? (Wire batteries, switches, bulbs, resistors, and capacitors) Through variating components, different results can be achieved, such as: adding more buzzers, bulbs or motors would result in dimmer, quieter or slower components; altering wire length affects the brightness, sound or speed, of bulbs, buzzers and motors; variating the position/composition of switch affects the function of the circuit.</p> <p>6. Can you create a simple device/game using a simple circuit?</p>
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