

Year 3						
Block 1	Recommended Lesson Sequence	Scientific Enquiry Covered	Rocket Words Covered	Name of Task / Tasks	Resources Needed	Summative Quiz Questions
Rocks	1. Describe how mountains are formed	1. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	1. mountain, Europe, hill, Himalayas, Alps	1. Mountain modelling	Rock Investigation Different types of rock, Mirror or glass (smooth), Water, Modelling the Earth, Clay, Stones or marbles, Soil or sand, Water, Handout, Today's Song, Lyric sheet.	Where are the mountains called the Alps? Know if a mountain is a made of rock and earth and rises above the land on which it sits. A mountain has to be over 600 metres tall or it would be called a hill. Which of these is a type of rock? Complete the statement: The Himalayas and {{Alps}} are both sets of {{folded mountains}} that were created when a huge force pushed parts of the Earth's {{crust}} upwards to form {{mountains}}. The Himalayas were once on the {{bottom of the ocean}}. Recognise what a folded mountain looks like.
	2. Learn about different types of rock	2. Asking relevant questions and using different types of scientific enquiries to answer them	2. metamorphic rock, igneous rock, sedimentary rock, magma, mineral	2. The rock cycle challenge!	Rock Cycle Adult supervision Jelly beans Cornflour Honey Saucepan Heat from oven Oven gloves Bowl Foil, Handout, Today's song lyric sheet	When a volcano erupts, it shoots out...? Complete the statement: Rocks are generally made of {{chemicals}} called minerals. {{Metamorphic}} rocks are made when a combination of {{heat}} and pressure causes great physical and chemical changes in {{some rock}}, transforming the look of the rock and even changing the {{minerals}} that were there in the first place. True or False: The word 'metamorphosis' means to change shape. Rocks made when magma from a volcano cools and becomes hard is called...? True or False: Limestone is made mostly of compressed bones and shells of millions of tiny creatures.
	3. Understand what a fossil is	3. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	3. fossil, amber, Jurassic Coast, seashell, extinct	3. Exploring fossils	Make a Fossil in Amber Water, Lemon or orange squash, Plastic spiders or insects, Plastic tubs, Freezer Today's Song: Lyric Sheet, Handout	What is a fossil? How long does it take for a fossil to form? Complete the statement: The {{Jurassic Coast}} is an area of coastline along the southern end of the {{UK}}. This area has become famous for the amount of {{fossils}} that have been found there. The poem She Sells {{Seashells}} on the Seashore is based on the life of Mary Anning, a lady who found thousands of fossils along this particular coastline. What does extinct mean? Which of these are fossils and which are not?
	4. Describe what soils are made of	4. Setting up simple practical enquiries, comparative and fair tests	4. peat, clay soil, chalky soil, sandy soil, texture	4. Soil Types Experiment	Soil Types Experiment 3 or 4 dry soil samples of sandy soil, peaty soil, clay soil, and chalky soil. Water Hand washing facilities Ruler Filter Instruction sheet for soil texture test Wipe down surface, Today's Song Lyric sheet, Handout	Which of these are types of soil? What is the process called that describes rocks being broken down into smaller pieces, that help make up soil? Complete the statement: The word '{{decompose}}' means to be broken down into smaller parts after {{death}}. After a while, and sometimes with help from {{decomposers}} such as flies, fungi and {{bacteria}}, the animals or plants {{rot}} away and leave {{nutrients}} behind, that enrich the soil they were laying in. True or false: Clay soil is thin and water pours easily through it. What is manure?
	5. Observe rocks, including those used in buildings and gravestones	5. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	5. lichen, acid rain, chemical weathering, physical weathering, biological weathering	5. Rock audit and graph	Rock Audit String, Sticky tack, Scissors, Graph paper, Rocks around the school, or headstones in a graveyard. Handouts Investigation Sheet	What are gravestones? What sort of things can make a gravestone wear down? Complete the statement: {{Physical}} weathering is when water from rain gets into {{cracks}} in a rock such as a {{gravestone}}, the water freezes, expands (because when water freezes it {{gets bigger}} than when it was a liquid), then this makes the crack in the rock become even {{bigger}}. {{Chemical}} weathering is when things in the air like pollution from {{factories and cars}}, or acids within rain, attack the {{surface}} of the rock and wear it away. Which of these shows weathering on a gravestone, and which shows no sign of weathering? What effects can weathering have on a gravestone?
	6. Classify different types of gravestone weathering	6. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	6. marble, sandstone, limestone, flake, granite	6. Set up a simple practical enquiry to explore how much water different types of rock absorb.	Cemetery Investigation Cemetery Pencils Paper Rock Absorbancy A range of rocks Magnifying glass Water Lyric sheet Handout	What kind of rock is sandstone? Complete the statement: Weathering on a {{sandstone}} gravestone can produce {{flakes}} which fall off leaving an {{uneven}} surface. Sometimes the flake stays attached to the stone and small {{creatures}} come to {{live}} in the shelter of the gap. Plant {{roots}} can grow into cracks in the stones and, as they grow, they make the cracks wider. These are examples of {{biological}} weathering. True or false: Limestone is made mainly of a chemical which dissolves over time when rainwater falls on it. The fossils of extinct animals are sometimes found on a gravestone when weathering has worn away part of the surface. What does extinct mean? Which of these are rocks and commonly used in gravestones?

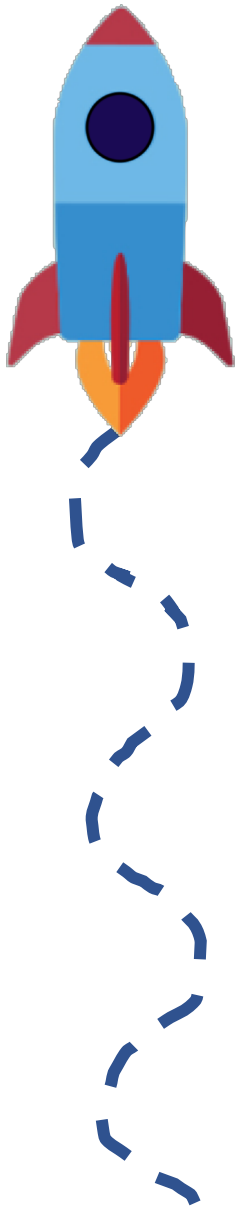


Block 2						
Forces and Magnets	1. Understand magnetism	1. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	1. lodestone, iron, ore, attract, magnetic strip	1. Explore the magnetic properties for a range of objects.	Magnetically Propelled Car Bar magnets Safety scissors (must have metal cutting areas) Toy cars Sticky tape, Magnet Strength Bar or horseshoe magnets, Paperclips, Metallic surface (whiteboard, fridge, etc.) Paper, Handout	What kind of magnet is this? Complete the statement: A magnet has an {{invisible}} force around it, that pulls other types of metal towards it. It only works on metals that have {{iron}} in them. It doesn't work on things like {{paper}}, {{plastic}}, {{cloth}}, or {{gold}}. True or false: There is a naturally magnetic stone called a lodestone. Name some places in which magnets are found. True or false: Magnets can pick up paperclips.
	2. Learn about the different types of magnets	2. Identifying differences, similarities or changes related to simple scientific ideas and processes	2. bar magnet, cow magnet, horseshoe magnet, disc magnet, flexible magnet	2. Exploring how magnets repel and attract.	Attract & Repel Bar magnets (with either different colours at north and south poles, or with letters N and S printed on them). Handout	True or false: A sheep magnet is used by farmers to help prevent illnesses in sheep. What does this picture show? Where are the magnetic forces strongest on a bar magnet? What are the poles called on a magnet? True or false: Cow magnets are used to are used to remove sharp metal objects out of a cow's stomach (something they have eaten accidentally).
	3. Know that the Earth behaves like a magnet	3. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	3. hang, compare, experiment, record, summary	3. Exploring magnets	Follow that Force: Ceramic doughnut magnets, Bar magnets, String, Magnetic Investigation, Bar magnets (some with north and south poles clearly marked, others with no indication of where the poles are), Handout	What is a 'summary'? Why does a compass point to the Earth's North Pole? True or false: A magnet will point towards the Earth's North Pole nearly all the time. Complete the statement: Molten {{iron}} moving around inside the {{Earth}} is what creates the magnetic field that surrounds it. Molten means {{melted}}. Some {{birds}} can sense the magnetic field as they {{fly around}} and it helps them {{go}} in the right {{direction}}. True or false: Pigeons can see magnetic fields that are around the Earth.
	4. Learn about magnetic fields; learn about the law of magnetic attraction	4. Asking relevant questions and using different types of scientific enquiries to answer them	4. attract, repel, propulsion, Maglev train, high speed train	4. Carousel Challenge! 4. Iron filing experiment	Wooden block, nails, hammer, copper wire, AA batteries, magnets. Iron Filing Experiment Petri dishes (securely sealed) with iron filings inside, Bar magnets, Drawing paper, Pencils, Magnifying glasses, Handout	True or false: A Maglev train is one that uses magnets to pull it down hard onto the train track. What happens when you take two bar magnets and bring both their north pole ends together? Complete the statement: The Maglev {{train}}, which can be found in {{China}} gets its name from the words '{{magnet}}' and 'levitation' (which means {{to lift}} into the air without touching). It can travel at speeds up to {{600}} km/h (kilometres per hour). This can be done by having {{north pole ends of}} magnets on the train and on the track. The Earth's magnetic forces is strongest at..? True or false: Propulsion is when something is pushed forwards.
	5. Know that magnetic needles always point magnetic north	5. Identifying differences, similarities or changes related to simple scientific ideas and processes	5. compass, magnetic needle, direction, orienteering, roller coaster	5. Creating your own compass	Make a Compass: Sewing needles (as blunt as possible), Magnets (make sure they have a north/south distinction), Greaseproof paper (or flat pieces of cork, or try leaves from the garden/playground), Scissors, Red permanent marker pens, Bowls, Water, Compasses, Handout	What has a magnet in it and helps us find which way to go? True or false: A compass will point either north or south. If you face the way the needle of a compass is facing, what direction is behind you? Name some people that use compasses. Complete the statement: There are two North Poles. One is the {{geographic}} North Pole. This one is the place that is simply the most northern part of the {{world}}. The second is the {{magnetic}} North Pole, and this is where the {{magnetic field}} in the northern part of the Earth is at its {{strongest}}.
	6. Compare how things move on different surfaces	6. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	6. direction, surface, pendulum, tilt, friction	6. Rolling balls to capture data.	Moving Over Surfaces Comparative Test Small, soft ball or variety of balls. Thin book or notebook. Books or other items to make an 8-centimetre support for a ramp.	What is a pendulum? Which type of floor will a ball roll quickest on? Complete the statement: The distance an object travels depends on what the object {{looks like}}, what it is {{made of}}, how {{heavy}} it is, how {{hard}} a {{force}} is used, what it needs to travel {{through}}. True or false: When you go tenpin bowling, you have to throw a light ball down a wooden lane to try to knock over some skittles. The lightness of the ball makes it easy to knock the skittles over. What happens if you apply a force to an object that is already moving?



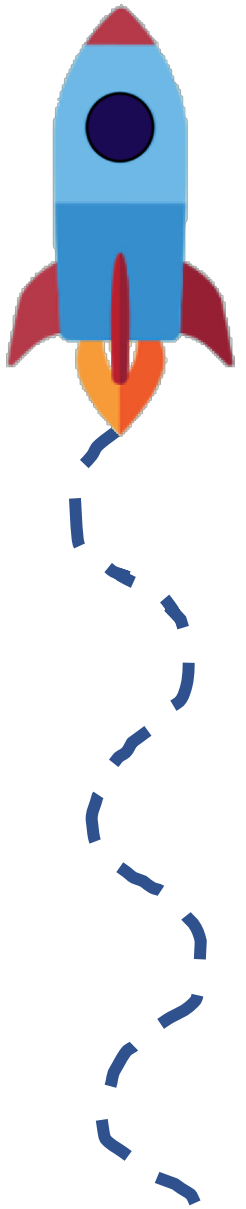


Block 3						
Light	1. Describe how light travels	1. Using straightforward scientific evidence to answer questions or to support their findings.	1. transparent, opaque, light, torch, shadow	1. Make a shadow puppet.	Make a Shadow Puppet Lamp, Sticky tape, Pencils, Scissors, Lollipop sticks, White wall, Handout printed onto card	When you push a light switch, the light comes on very quickly. Why is this? Light travels in a straight line. Is this true or false? What happens if you shine a torch against a wall in a dark room, then put your hand in the beam of light? Find 3 correct answers. Light travels very {{fast}}. Blink your eyes {{3}} times. Light can travel to the {{the Moon}} and back in that time. Which images are of opaque items and which are of transparent items. These words have opposite meanings, let that help you decide which picture goes where.
	2. Understand different types of mirrors	2. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	2. mirror, concave, convex, reflection, telescope	2. Draw the reflections seen in different types of mirrors.	Eyes in the Back of the Head Challenge Variety of materials which are reflective, Make a Telescope, Double convex lenses with different focal lengths (suitable sizes) for each telescope being made, Cardboard crisp tubes, Black sheets of paper, Tape, Mirror Investigation, Mirrors, Handout 2, Handout 1	A plane mirror... Find 3 answers to end this sentence. How would you see the word 'light' if it was reflected in a plane mirror? True or false: A telescope can help you see things that are very small. Choose all the options that are correct. Complete the statement: A concave mirror curves {{inwards}} like a {{spoon}}. A concave mirror makes things look {{smaller}} than they actually are. A convex mirror curves {{outwards}} like a {{ball}}. A convex mirror makes things look {{bigger}} than they actually are.
	3. Explain how reflective surfaces help keep us safe	3. Using straightforward scientific evidence to answer questions or to support their findings.	3. reflective material, road safety, fluorescent, dark, hi-vis	3. Exploring reflective and non-reflective materials.	Road Safety Diorama Sticky notes, Pencils, Handout, foil, glue stick, clear stick tape, card	Put these steps in order to show how to safely cross the road. What is reflective material? Which of these should you do when you are out and about at night? Find 3 answers. Complete the statement: When you wear a {{reflective}} material at night, the {{headlights}} of a passing car will reflect off the material and make that material {{visible}}. When the driver of the car can see the {{visible}} material, they can see you, too. For safety, {{be seen at night}}. Which of these reflects light, and which do not reflect light?
	4. Know what a periscope is and how it is used	4. Asking relevant questions and using different types of scientific enquiries to answer them	4. periscope, submarine, parallel, viewer, enlarge	4. Up periscope!	Make a Periscope Drinks cartons (orange juice, milk 2 pints etc.) washed and with tops and bottoms removed. Each pair needs 2 cartons. Cardboard Duct tape Scissors Small mirrors Paints, papers, etc. for decoration. Handout	Where are or were periscopes most commonly used? Find 3 answers. True or false: The angle of the mirrors in a periscope is 75°. What type of mirrors are used in a periscope? Which of these can a periscope do? Complete the statement: A mirror reflects {{light}}. Light travels very {{fast}} in a straight line. Light reflecting off the two mirrors in a {{periscope}} allows people to see in {{a different}} direction to the one in which they are looking.
	5. Recognise that light from the Sun can be dangerous and that there are ways to protect your eyes	5. Asking relevant questions and using different types of scientific enquiries to answer them	5. ultraviolet rays, calcium, sunglasses, sunburn, sun protection factor	5. UV beads bracelet exploration.	Make a UV Friendship Bracelet UV colour-changing beads String, Bead Light Test UV colour-changing beads. Torches and other light sources. Boxes.	Which is the main vitamin that we get from the Sun? Which things would you choose to use on a sunny day? Which things would you choose to use on a snowy day? What does SPF stand for? Complete the statement: {{Sunglasses}} are important to wear on {{sunny}} days. They protect eyes from the {{ultraviolet}} light from the Sun, which can burn eyes and skin. They also help people {{see}} better in the bright light. If you look into someone's sunglasses you can see yourself looking back. Why is this?
	6. Measure shadows and find out how they are formed and what might cause the shadows to change	6. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	6. position, intermediate, sundial, clockwise, indirectly	6. The Stonehenge Challenge.	The Stonehenge Challenge: Stones or plastic bricks/cubes, Mirror Solar Projector, Index cards, Pins, Small, flat mirrors Pinhole Solar Projector, Shoeboxes, White card, Pins, Black Paint, Scissors, Foil, Making Shadows, Torches, Objects such as a ball, index card, pencil, Handout	Light cannot pass through a dictionary. Why is this? Complete the statement: Shadows are formed when the shape of an {{opaque}} object {{blocks}} a source of light. The light is stopped from {{travelling}} further by the solid object, and a {{dark}} area that is the same shape as the object appears behind it. Shadows are always {{bigger}} than the object that forms them. True or false: A sundial tells you what the weather is going to be like? At what times of day are outside shadows longest? Find 2 answers. Which of these are sources of light?



**Block 4**

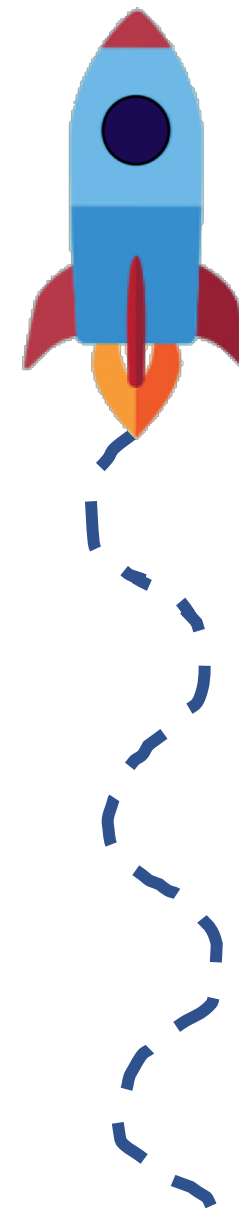
Animals including humans	1. Introduction to the skeleton	1. Identifying differences, similarities or changes related to simple scientific ideas and processes	1. skeleton, bones, skull, x-ray machine, cast	1. Label the various bones on the human skeleton.	Magic Bendy Bones Jar Vinegar Chicken bones, Full Size Skeleton Exercise Wallpaper Scissors Glue Paper Handout	What things does a skeleton do? A Z-ray machine can see through our skins to see what is happening inside our bodies. Which of these interesting facts about bones are true? Complete the statement: You can keep bones {{healthy}} by getting lots of {{Vitamin C}} and Vitamin K. Eat lots of green leafy vegetables, which are the best source of {{calcium}}. Spend some time in the {{Sun}} to get a good amount of Vitamin D. Get lots of {{exercise}}. Which of these are bones?
	2. Know about the skeleton	2. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	2. Achilles tendon, cartilage, marrow, ligament, tendon	2. Create and label the bones in your own skeleton puppet.	Create a Skeleton: Card, Scissors, Paper fasteners, String, Hole punches, Pencils, Drawing pins, Hanging poles, Handout	Tendons are strong fibres that attach...what? The largest tendon in your body is called...? Complete the statement: The largest {{tendon}} in the body is called the {{Achilles tendon}}, named after a heroic character in a story from a country called {{Greece}}. He died after being hit by an {{arrow}} in the {{heel}}, which is the part of the {{body}} where this {{tendon}} can be found. True or false: X-ray machines can see through your bones. True or false: Muscles help you move by pulling on your bones.
	3. Know about your limbs, the skull and vertebrae	3. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	3. joint, cranium, vertebra, calf, tibia	3. Create a model which shows the internal workings of your hand.	Model of the Hand Card, Straws, Beads, String, Scissors, Handout	When people or animals eat meat, what are they mostly eating? The two big bones in your leg are called...? The {{thigh}} bone is the biggest in the body. It is called the {{femur}}. The {{smallest}} bone in the body is inside your {{ear}} and is called the {{stirrup}}. This is about the size of a {{grain of rice}}. Which of these facts about joints are true? True or false: Calcium helps bones stay strong. If the body doesn't get enough calcium, it will borrow some from the bones, making them weaker.
	4. Learn about voluntary and involuntary muscles	4. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	4. involuntary muscles, voluntary muscles, biceps, triceps, hamstring muscles	4. Voluntary muscle testing.	EyeLid Investigation Stopwatches Cotton wool Plastic sheets Protective goggles Pens Handout - EyeLid Investigation Handout, Muscle Fatigue Clothes pegs Pencils Books Handout - Voluntary Muscles Tests	If you write with the opposite hand from usual, why does that hand ache more quickly than if you were writing with your usual hand? True or false: The biggest muscle in the body is called the gluteus maximus, which is the muscle found in your bottom. Which of these are involuntary muscles? It takes {{15}} muscles to make your {{face}} smile. It takes {{40}} muscles to make your {{face frown}}. These are all {{voluntary}} muscles. It takes a lot less effort to {{smile}}! Muscles work in pairs. What happens when they do this?
	5. Understand the difference between herbivores, carnivores, and omnivores	5. Identifying differences, similarities or changes related to simple scientific ideas and processes	5. omnivore, herbivore, carnivore, horse, claw	5. Classifying Animals.	Classifying Animals: Paper, Scissors, Glue, Handout, Diary Entry, Paper, Pens or pencils	What type of mammal is a human being? True or false: Some animals only eat plants. Complete the statement: Some animals eat plants only, some eat {{meat}} only and some eat both plants and meat. As far back as the {{dinosaurs}} we can find this out. If a mammal only eats plants, they are called a {{herbivore}}. If they only eat meat, like a {{lion}} they are called a carnivore. Mammals that eat both plants and meat are called {{omnivores}}. Which of these shrimp eat? Sort these animals in to herbivores and carnivores.
	6. Explore the different food groups and identify ways to eat a balanced diet	6. Setting up simple practical enquiries, comparative and fair tests	6. nutrient, carbohydrates, balanced diet, food pyramid, protein	6. Taste test investigation.	Presentation, sticky notes.	What does meat provide us with? True or false: It is important to eat an equal amount of each of the food groups. Order the food groups from the smallest to the largest amount needed for a balanced diet. Which of the following are carbohydrates? Complete the statement: The {{bottom}} layer of the pyramid contains carbohydrates, which provide the body with energy. Fruit and vegetables contain {{nutrients}} and meat helps the body to {{grow and repair}}. We should {{restrict}} the amount of food you eat from the top layer. You must also make sure you drink enough {{water}}.





**Block 5**

	1. Understand the difference between vascular and non-vascular plants	1. Asking relevant questions and using different types of scientific enquiries to answer them	1. vascular plants, non-vascular plants, xylem, phloem, moss	1. Transportation in plants investigation	Water Travelling Jugs Water Food colouring (yellow and blue) Kitchen towels Handout	Show the journey of a drop of water as it travels from the clouds, through a plant, and up to its leaves. True or false: The phloem and xylem are found in non-vascular plants. Complete the statement: {{Xylem}} is a collection of tissues in {{vascular}} plants that provides support and transports {{water}} and nutrients from the roots. {{Phloem}} is the living tissue that carries nutrients to all parts of the plant, beginning at the {{leaves}}. All vascular plants have roots, stems and...what? Which of these plants are vascular and which are non-vascular. Remember, vascular plants always have roots, stems and leaves.
	2. Learn about the transportation system in plants	2. Setting up simple practical enquiries, comparative and fair tests	2. nutrient, environment, transportation, sucrose, starch	2. Design an experiment which explores how different substances on the surface of a plant impacts a plant's transpiration.	Perspiring Plants Healthy broad leaves with stems. Wide mouth jars or glasses. Clear plastic cups larger than the leaves. Pieces of cardboard to cover the tops of the jars. Small rocks. Cotton balls. Scissors. Petroleum jelly. Water. Handout, Investigation Sheet	What is sucrose? Where do plants get their water from? True or false: Phloem and xylem are both found in vascular plants. Complete the statement: The movement of {{sugars}} through the {{phloem}} and water and {{nutrients}} through the {{xylem}} is called {{transportation}}. Nutrients, water and sugars all play a part in keeping the plant {{healthy}} and helping it produce {{new}} plants. Name some of the characteristics of non-vascular plants. Find 3 answers.
Plants	3. Understand how non-vascular plants reproduce	3. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	3. reproduction, spore, sperm, cell, fertilisation	3. What happens if you complete this activity on a windier day?	Wind Pollination Flour. Paper bags. Handout	Moss is an example of which type of plant? Put the steps in order to show how moss reproduces new plants. True or false: All plants and animals are made up of cells. Is this true or false? Complete the statement: Non-vascular plants do not grow from {{seeds}} but from tiny single {{cells}} called {{spores}}. These grow in pods on the end of {{stalks}}. When they are mature, they burst out of the buds, land {{nearby}}, then grow into new plants. Which of these statements are true? Find 3 correct answers.
	4. Understand how plants prepare for photosynthesis	4. identifying differences, similarities or changes related to simple scientific ideas and processes	4. photosynthesis, transporting, transpiration, chlorophyll, respiration	4. Create your own celery transporters	Celery Transporters Celery sticks with leaves. Food colouring - red, blue, green. Clear cups/jars. Handout	Why do many plants look green? True or false: Chlorophyll traps light energy from the Sun in plant leaves. Why do many apples taste sweet? Complete the statement: Light energy from the Sun is trapped by {{chlorophyll}} in plant leaves. A gas called {{carbon dioxide}} enters the leaves through tiny holes. {{Water}} travels up the xylem from the {{roots}} to the leaves of the plant. Photosynthesis results in...?
	5. Be able to give examples of plants which reproduce asexually	5. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	5. asexual plants, runner, cloning, regeneration, salamander	5. Clone a potato!	Making a Clone Potato Potting plants. Water. Potato with shoots. Potting soil. Trowel. Protective wear - glasses, gloves, aprons. Handout	What is regeneration? A cloned plant...? Find 2 answers. True or false: A daffodil can split its bulb in two and become two new plants. True or false: If a salamander loses a leg a new salamander can grow from the leg. Which of these things can be used to clone a plant? Find 3 answers.
	6. Investigate reproduction in non-flowering seed plants	6. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	6. gymnosperm, conifer, angiosperm, cone, flower	6. Create an observational drawing of a pine cone and find out what happens to a pine cone when placed in water.	Pine Cone Investigation Glass containers Multiple Pine Cones Fine Motor Tweezers Hot Water Cold Water Air Handout	Which of these plants surrounds their seeds with fruit? There are 3 correct answers. A gymnosperm is a type of plant that has: True or false: Conifers produce two different sizes of cone. Give the correct order of events in the reproduction process of a conifer tree. Which of these are parts of a gymnosperm, and which are part of an angiosperm?



Block 6

Plants	1. Understand the different parts of flowering plants	1. Setting up simple practical enquiries, comparative and fair tests	1. sepal, stamen, ovary, stigma, anther	1. Investigate which explores the speed at which a range of seeds grow.	Plant Seed Growing Challenge Plant pots. A variety of seeds (preferably with a growing time convenient for the class). Soil. Water. Protective wear - gloves, aprons, glasses. Modelling a Flower Coloured paper. Scissors. Glue. Pipe cleaners. Modelling clay. Flowers. Song lyrics handout, handout	Which part of a plant produces pollen? Which of these make up the stamen (the male part of a flowering plant)? There are 2 correct answers. Complete the statement: The {{pistil}} is the female part of a flowering plant and is made up of three parts. The {{stigma}} has a {{sticky}} surface which traps pollen. The {{style}} holds up the stigma. Which of these plants produce seeds? True or false: The sepals protect the flower bud as it is growing.
	2. Understand how plants and seeds reproduce and grow	2. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	2. pistil, embryo, pollination, pollen, insect	2. All about Bees 2. Garden audit	All about Bees: Metal coat hanger bent into a circle, Yellow tissue paper, Black tissue paper, Googly eyes, Scissors, Sticky tape, Handout, Garden Audit, Investigation Sheet	There is a part on a flower called a pistil. Is this true or false? List ways in which plants make sure their seeds get spread as far as possible. 4 of these are correct. What are the male and female parts of flowering plants called? Complete the statement: When a bee collects nectar from a flower, {{pollen}} can get caught on its {{furry}} legs. If the bee then flies to another flower for more nectar that pollen can get caught on the {{stigma}} of the second plant. An angiosperm is a type of plant that has:
	3. Understand different root systems and what they do	3. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	3. root system, buried root, epiphyte, aerial root, anchor	3. Design a comparative test which investigates how quickly a range of root vegetables grow.	Carrot Top Growing: Saucers, Water, A range of root vegetable tops (carrots, turnips, swedes, parsnips, etc.), Pebbles or cotton wall balls, Handout	What is an epiphyte? What are some of the functions of roots? Complete the statement: There are different types of root system. Roots are usually buried in {{soil}}: these roots are called '{{buried roots}}'. Some plants have roots that are above the {{ground}}: these are called '{{aerial roots}}'. {{Epiphytes}} have these types of roots. True or false: Fuzzy hairs spread out from some types of root to help the plant absorb more air. Which of these are root vegetables?
	4. Know about carnivorous and insectivorous plants	4. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	4. insectivorous, carnivore, Venus flytrap, digest, sap	4. Venus flytrap model	Venus flytrap Paper plates Paint - green and pink White card Glue Sticky tape Pencils and pens 3cm black pompoms White plastic grocery bags, Handout	What is an insectivore? Go through the stages it takes for a Venus fly trap to eat a fly. Why do some plants have to eat insects and/or small animals? Which of these do you think are carnivorous plants? True or false: Rats and mice are sometimes eaten by carnivorous plants.
	5. Know that plants make their own food	5. Asking relevant questions and using different types of scientific enquiries to answer them	5. absorb, energy, sugar, glucose, pigment	5. Explore how a plant behaves when deprived of oxygen.	Plant in a Jar Glass jars with lids Soil Water Seedlings, Handout	What is Earth's primary source of energy? Complete the statement: {{Chlorophyll}} is a {{pigment}} found in the stems and leaves of plants which gives them their {{green}} colour. Chlorophyll absorbs the Sun's {{light}} energy so it can be used by a plant in the process of {{photosynthesis}}. What are the benefits of plants making their own sugars. How do the sugars produced in photosynthesis travel to other parts of the plant? A cloned plant cannot photosynthesise.
	6. Understand seed dispersal	6. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	6. dispersal, dandelion, daisy, sycamore tree, ash tree	6. Seed Dispersal Challenge	Sycamore Seed Test Scissors. Paperclips. Handout	True or false: Some seeds have wings to help them fly further. Which of these can help a seed fly furthest in the wind? Which of these plants uses wind dispersal to spread their seeds, and which use animals to help them? True or false: Wind dispersal is not a common way for a plant to spread their seeds. Complete the statement: Seeds from {{dandelions}} are not heavy at all. They are very flimsy and can be picked up by a very {{light}} wind. Have you ever blown a '{{dandelion clock}}' to see what time it is (it doesn't work, but it's fun!)?

