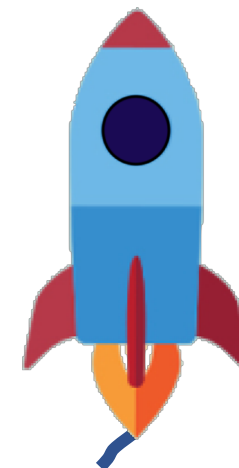


Class iii						
Unit 1	Recommended Lesson Sequence	Lines of Enquiry Covered	Rocket Words Covered	Name of Task / Tasks	Resources Needed	Summative Quiz Questions
Living and Non Living Things	Learn the properties of materials that make them suitable or unsuitable for particular purposes	Observing closely, using simple equipment	suitable, unsuitable, creative, strong, weak	Recycled Music.	Recycled Musical Instruments, Recycled materials such as: Greaseproof paper, Elastic bands, Dried beans, Tin can, Handout	Which of these materials is most suitable to make a table from? Which of these items are best made of metal? True or false: Car tyres are best made from plastic. Complete the statement: Some materials are better for some jobs than others. For example, {{paper}} is really good for writing on or making a paper aeroplane, but it wouldn't be good to {{build}} an actual aeroplane. Rubber is {{stretchy}} and is good for clothing such as gloves and tights, but would be useless for building a {{chair}}. People who make objects are always very careful to {{test}} which material is the best one to use. Watch today's expert film with Ian Guest. Using it, decide which materials would be most suitable to use to build features at Fairhaven Gardens. For those which are unsuitable, can you think why?
	Explore the uses of metal	Performing simple tests	utensil, platinum, construction, reinforce, rigidity	Aluminium Investigation.	Aluminium Bridge Challenge A tube of aluminium foil for group A roll of sticky tape per team Testing weight, Handout	Metal is... (choose three options) Metals have many uses. They have been used in {{farming}} to make tools and also to make weapons for {{war}}. Also, many {{electrical}} items such as TVs, phones and fridges are made from metal. Metals like iron and {{steel}} are very strong and are used in building. Which of these metals are widely used in making jewellery? What are the best metals for farmers to use?
	Understand how solids are measured	Observing closely, using simple equipment	measurement, unit, recipe, ingredient, gram	Measuring your height and making dough!	Making Salt Dough Worms to Length, Measuring cup, Bowl, Clingfilm, Baking paper, Oven, Rolling Pin, Cookie cutters, 125g plain flour, 145g table salt, 120ml boiled water, A small drop of cooking oil, Tape Measure Measuring YOU! Tape measure, Handout	Which of these can be measured accurately? (Choose all that apply) Which of these units of measurement would be important when baking a cake? (Choose all that apply) True or false: You would measure your height in grams and kilograms. What would be the best item to use to measure your weight? There are many ways we can {{measure}} solids. It depends which measurement you want when choosing the best {{instrument}} to measure with. For example, if someone is measuring their floor for a new carpet, they would use a {{tape measure}} but if they were measuring the weight of flour needed in a cake, they would use {{scales}}. Which of these types of graph would be the best choice to use when comparing people's height?
	Understand how liquid is measured	Gathering and recording data to help in answering questions.	tablespoon, litre, centimetre, measuring jug, bake	Dilluting squash.	Measuring Liquids Beakers Water Orange squash, Investigation Sheet, Handout	Which of these units would be used to measure a liquid? Which of these would you use to measure a liquid? Which would not be useful? When measuring a liquid, it is important to be {{accurate}}. You may use a {{teaspoon}} to measure small amounts of liquid, or a {{measuring jug}} for slightly larger amounts. When measuring in millilitres and litres, it is called the {{volume}}. True or false: You can use any object to measure liquid. Does the shape of a glass determine the amount of water it can hold?
	Understand how temperature is measured	Gathering and recording data to help in answering questions.	temperature, thermometer, degree, surgery, perspire	Measuring Water Over Time.	Measuring water over time, Beaker, Hot water, Flask of hot water, Stopwatch, Thermometer, Handout to measure and record results, Summative Test	Which of these is it important to measure for temperature? 38C is a healthy body temperature. Which of these is used to measure temperature? One thing that is measured for temperature is the {{air}} around us. This is important indoors so we know whether or not to use our {{heating}} and outside we like to know so that we can wear appropriate {{clothing}}. Temperature can be measured using a {{thermometer}}. Which of these temperatures are the two hottest and which are the two coldest?
	Test predictions about solids dissolving in water	Performing simple tests	sitr, mixture, solvent, saturated, dissolved	Soil Dissolving Experiment.	Soil Dissolving Experiment, Soil samples e.g. clay, silt and sand soil, Plastic drink containers with non-leak lid, Soil ingredients - rocks, water, dying plant material etc., Soil texturing test as a flow diagram (ideally laminated), Handout	Which of these techniques can you use to get materials back from a mixture? When you drop salt in water, what does it become? True or false: If you place flour in water, it creates a suspension. When mixing substances, the item being dissolved is called the {{solute}}. The item that it is being dissolved in to or by is called the {{solvent}}. For example, in a cup of tea the solute is the {{teabag}} and the solvent is the {{water}}. Which of these is a solute and which is a solvent?



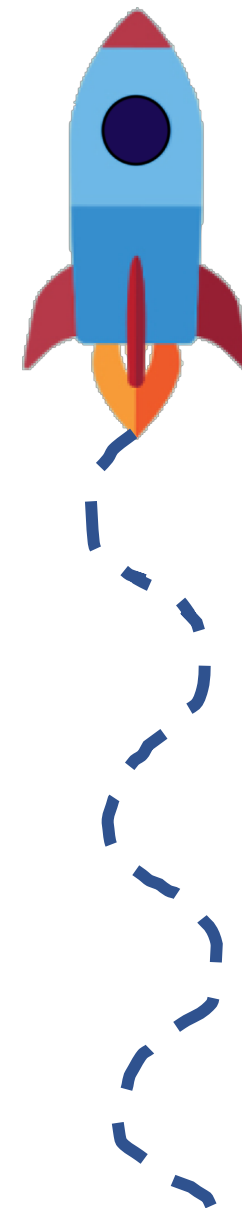
Unit 2						
Plants	Understand that plants make their own food	Performing simple tests	experiment, germinate, soil, bean, pod	Have a go at planting broad beans.	Planting Broad Beans: Trowels Broad beans Spades Watering can Handout Plant labels Handout, the experiment can also be completed inside using cups and kitchen towels	True or false: Plants can breathe and grow. What do plants need in order to grow healthily? Find 4 answers. What is the first period of growth called for a plant? Order these for the process of growing a healthy plant Place these into groups - what plants need and what humans need. Can you notice any similarities?
	Understand that plants need water, light, and a suitable temperature in order to grow well	Performing simple tests	nutrient, temperature, anchor, stunted, produce	Planting peas!	Comparing conditions 3 cups per talk partner Soil Watering jug with water Beans to plant Handout	True or false: Grass and trees are both types of plant. What is transferred between the roots and leaves in a plant? Which of these are contained in fertiliser for plants? Find 3 answers. Complete the statement: As well as light, air, water and nutrients, plants also need plenty of {{space}} in order to grow well. If not, they can get crowded and their {{roots}} won't have room to grow. Plants also like the {{temperature}} to be just right. In some countries it is too hot or too cold for plants to grow well. Which of these pictures show good and bad conditions for most plants to grow in.
	Recognise the importance of flowers and seeds	Observing closely, using simple equipment	fruit, vegetable, wheat, radish, broccoli	Modelling Fruit and Vegetables.	Seed Sorting A range of seeds, stones and pips from a range of fruits and vegetables Coloured pens and pencils for drawing, Modelling Activity Modelling clay Handout	True or false: Corn is a seed. If you are eating a green bean, what part of the plant are you eating? Which of these foods are the root of the plant? Complete the statement: Sometimes, when we eat fruit and vegetables like cauliflower, we are actually eating the {{flower}} of the plant. For example, {{broccoli}} is a flower. Which of these are seeds and which are flowers?
	Understand the difference between a bulb and a seed	Observing closely, using simple equipment	bulb, dormant, onion, daffodil, tulip	Seed or bulb?	Seed Growth Investigation Possible liquids include: Milk Iced tea Vinegar Orange juice Water Sparkling water Marker pen, Handout, KS1 investigation template sheet	True or false: An onion is a seed. What is the thin layer around a bulb called? What does 'dormant' mean? Which of these are seeds and which are bulbs? Complete the statement: When watching today's expert film with Mike, I learnt that {{poppy}} seeds are found inside the head or flower of the plant. Also, fir cone seeds fall out when it is {{hot}} and sunny. Seeds usually have a tough {{coat}} surrounding them, which protects the plant growing inside.
	Know how plants grow from a seed to a plant	Observing closely, using simple equipment	pollen, ovule, fertilised, stigma, anther	Mike and the beanstalk.	Modelling the Parts of a Flower: Handout, Two flowers for each table, Magnifying glasses, Plastic knives, Modelling clay, The Little and Large Seed Challenge, Plastic cups, Soil, Seeds of various sizes, Watering can, Plant labels, Waterproof pens, Camera	What can you remember about plants so far? What conditions does a seed need to grow into a healthy plant? Select 5 answers. Which part of the flower makes male pollen? Complete the statement: Pollen can be carried between plants by {{wind}} or by {{insects}} such as bees. It can also be carried in other ways, like getting caught up in the {{fur}} of an animal. When the pollen reaches the {{ovule}}, a seed is grown. True or false: There is a part of a flower called a stigma. Put these statements in order for how a flower is pollinated.
	Understand what plants need in order to thrive	Using their observations and ideas to suggest answers to questions	fresh, range, artificial, greenhouse, moist	A recipe for growth.	Can You Make Your Plants Thrive? Fresh seeds of your choice such as pumpkins seeds, sunflower seeds, lima beans or pinto beans. Good quality soil (loose, aerated, lots of peat moss), if you don't have any you can buy some potting soil at your local garden centre. A container to hold the soil and your seeds, Water, Light and heat, Handout	Which of these are the best conditions for plants to thrive? Why are greenhouses not always the ideal place to grow plants? Find 3 answers. True or false: In the UK most vegetables grow best between April and September. Complete the statement: For plants to grow best, they should be in their {{natural}} surroundings. This means they will receive {{rainwater}} and natural {{sunlight}} which means they grow properly and healthily. Are these plants healthy or unhealthy?
	Know that Summer is full of life and growth with an abundance of fruit and vegetables	Observing closely, using simple equipment	Summer, hatch, strawberry, ripen, grasshopper	Fruit and Vegetables.	Modelling Fruit, Modelling clay, Paper, Pencils, Colouring pencils, Today's Song, Lyric sheet Handout	Which of these pictures do you think was taken during Summer in the UK? True or false: There is more direct sunlight during the Winter in the Northern Hemisphere. Put these events in their proper order. True or false: Summertime is the best time for harvesting fruit and vegetables. In the Summer baby animals are {{growing}} fast and most baby birds will have {{hatched}}, left their {{nests}} and learnt to {{feed}} themselves. Watch out {{grasshoppers}}! Trees are full of {{leaves}} and their branches will have grown.



Unit 3						
Animals	Learn about reproduction and growth in animals	Observing closely, using simple equipment.	flock, ram, orphaned, lamb, sheep	Measuring Height.	Measuring Height Graph paper Self-stick notes Tape measure, Handout	What is a male chicken called? True or false: All hen's eggs have baby chicks inside. Which of these might a farmer raise a lamb or sheep for? (choose two answers) Sort these mammals from those than live longest to those that live for the shortest amount of time (on average). Which of these animals are grown and born in an egg and which are not?
	Understand the difference between herbivores, carnivores, and omnivores	Classifying and indentifying	omnivore, herbivore, carnivore, horse, claw	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. 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.
	Learn about extinct animals	Observing closely, using simple equipment.	dinosaur, brachiosaurus, extinct, Tyrannosaurus rex, library	Fossil Making	Fossil Making, Plaster of Paris, Something to cast (dinosaur shaped), Water, Modelling clay, Small paper cups or trays, Lollipop sticks, Permanent markers, Handout	Which of these statements is true? True or false: Extinct means that there are less than 100 of the animal in the world. Why do you think an animal might become extinct? When there are none of a species of animal left in the world, it is called {{extinct}}. Some animals that are extinct are {{dinosaurs}}, the Dodo and the Woolly Mammoth. There are some animals in the world today which are gradually dying out, these are called {{endangered}} animals. There are many charities who help to {{protect}} these animals. Which of these animals are endangered and which are common?
	Learn about the food chain	2. Using their observations and ideas to suggest answers to questions	food chain, caterpillar, producer, consumer, life cycle,	Food Chain Challenge.	Food Chain Russian Dolls Handout - page 1 printed single sided if you are doing the second task. Card/paper scissors sticky tape coloured pens/pencils glue stick You may prefer to provide the children with animal pictures to cut out instead. Mission Log - Evaluate Handout - page 2 printed single sided if you are doing the second task.Today's song - Habitats Lyrics sheet	What are the organisms called which are in the first stage of the food chain? What is the process called from producer to consumer, with organisms eating each other along the way? A food chain is started by a {{producer}}, which is something which gets its energy from water, light, soil and {{heat}} from the sun. This organism will typically be eaten by a small creature, such as an {{insect}} before the food chain moves up to the consumers. Order these organisms in a food chain from producer to consumer. Sort these organisms into producers and consumers.
	Describe life in the ocean	2. Using their observations and ideas to suggest answers to questions	plankton, Blue whale, valley, mountain, trench	Ocean Life Collage.	How Big is a Blue Whale? (Investigation), Tape Measure, Sports Hall or large room, Metre Rulers, Today's song, Lyrics sheet, Handout	Which of these live in the ocean? How large, in weight, can a blue whale grow to? Order the ocean food chain from producer to consumer. Which of these forms of ocean life can be dangerous to humans? Which of these forms of ocean life is a plant and which is an animal?

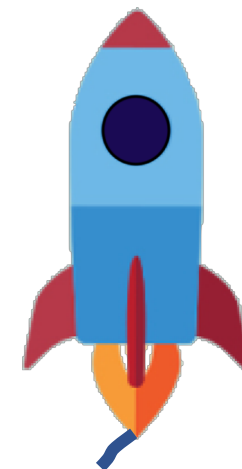


Unit 4						
Our Body	Learn about muscles and skeletons	Identifying and classifying	muscle, stretch, tighten, wink, squeeze			How many muscles are in your face? Which of these have a skeleton? True or false: The leg contains our strongest muscles. {{Muscles}} can do a number of things, including helping our {{posture}}, moving about and also pumping {{blood}} around our body. That is the heart's function. The heart itself is a muscle. Muscles also help move food through our {{digestive}} system. Sort these into muscles and bones in the human body.
	1. Understand the digestive system	1. Observing closely, explaining using models	1. digestive system, stomach, swallow, saliva, gurgling	1. Modelling the Digestive System.	Modelling the Digestive System Orange Juice Water Bananas Sealable sandwich bags Crackers or breakfast biscuits Metal tray Plastic or paper cups Scissors One leg from a pair of tights per group, Handout	What is the fluid in your mouth called which breaks down food into smaller and softer pieces? True or false: All of the food you digest comes out as a waste product. Sort these sentences into the correct order to show the process of digestion. Which of these has their primary function as part of the digestive system and which do not? Where do the most valuable parts of your food go?
	2. Describe how blood is pumped around the body	2. Using their observations and ideas to suggest answers to questions	2. circulatory system, organ, blood vessel, rib cage, cardiology	2. Modelling the	Modelling the Heart A resealable plastic bag Two straws (red and blue) Two pipe cleaners (red and blue) A large red marker A hot glue gun, Song Lyrics sheet, Handout	Which of these statements are true? Choose all that apply. True or false: Your heart beats faster after exercise. What are people who study hearts called? Complete the statement: The heart is at the centre of the {{circulatory}} system and {{pumps}} blood all around the body. The heart will beat more slowly when we are {{resting}} but more quickly if we are doing {{exercise}}. It is important to eat a healthy diet as this helps keep the heart healthy and helps prevent {{disease}}. Which of these helps keep our heart healthy and which could make it unhealthy?
	3. Learn about the nervous system; learn the basic needs of a human	3. Using their observations and ideas to suggest answers to questions	3. brain, nerves, messages, five senses, itch	3. Trick your brain	Optical Illusion, Scissors, Pencils, Sticky tape, Card, Colouring pencils, Lollipop sticks, Handout Draw It! Write It! The Five Senses, A selection of items that the senses detect in some way (bell, something smelly, apple, etc.), Card/paper, Pens, Handout	How are messages sent from your brain to your body and back? Which of these is NOT one of our five senses. Complete the statement: Our nerves help send {{messages}} to and from our brain. They are a little like the branches of a {{tree}} in the way they branch out around the body, but they are much thinner! Nerves help to tell us to do important things, like eat, {{drink}} or go to the toilet! Which of these activities help to keep our brain and mind healthy? There are two types of movement which the nervous system controls. Voluntary is a planned movement, and involuntary which is something we do without thinking. Sort these into 'voluntary' or 'involuntary.'
	4. Know how diseases are cured and learn about the work of Louis Pasteur	4. Performing simple tests, explain a scientific model	4. disease, fever, Louise Pasteur, germ, stethoscope	4. The Glitter Challenge!	The Glitter Challenge! Glitter Handout Today's Song Lyric sheet	If you have a fever, what happens to your body temperature? Which of these is a way an illness can be passed from one person to another? (choose all that apply) True or false: A doctor may listen to your heartbeat with a thermometer. Complete the statement: If you are ill, a doctor might prescribe a {{medicine}} for you to have to kill off the {{germs}} in your body. Doctors can sometimes help prevent disease by giving you an {{injection}} or some tablets. Which of these pictures relates to something that Louis Pasteur helped discover and which don't?
	5. Appreciate the work of Edward Jenner; understand vaccination	5. Describe the scientific method	5. vaccine, Edward Jenner, cowpox, infection, measles	5. Exploring the work of Edward Jenner	Handout	Which of these is the name of an injection given to prevent illness and disease? Which of these diseases can you only get once in a lifetime? Complete the statement: Edward Jenner was an {{Englishman}} who helped to save many lives with {{vaccinations}}. He first tested his idea on a boy called James Phipps and injected him with a tiny amount of {{cowpox}} and smallpox. James became a little unwell but soon recovered. It was then that Jenner realised the body could {{fight}} off small amounts of a disease. True or false: Jenner's injections became so popular that the King asked to be vaccinated by Jenner. Which of these diseases do you have a vaccination to prevent and which do you take medicine for when you have it?
	6. Learn how humans grow by looking at how babies grow into adults	6. Gathering and recording data to help in answering questions	6. growth spurt, child, teenager, adult, elderly	6. Do you have Longer Arms if you're Taller?	Life Cycle and Growth Collage Paper Glue Scissors Magazines / newspapers Colouring pencils / pens, Do you have Longer Arms if you're Taller? Arm length investigation sheet, Handout	At what age, on average, is a human being fully grown? What is the period of growth called between a child and teenager? Complete the statement: During adolescence, there are lots of changes to boys' and girls' {{bodies}}. This includes them growing taller, growing {{hair}} on their bodies and changes in their feelings. Boys and girls grow at different {{rates}}. Although girls tend to start growing earlier, boys are usually {{taller}} as adults. Which of these can happen to humans as they become older? (choose all that apply) Which of these things change as children grow in to adults?

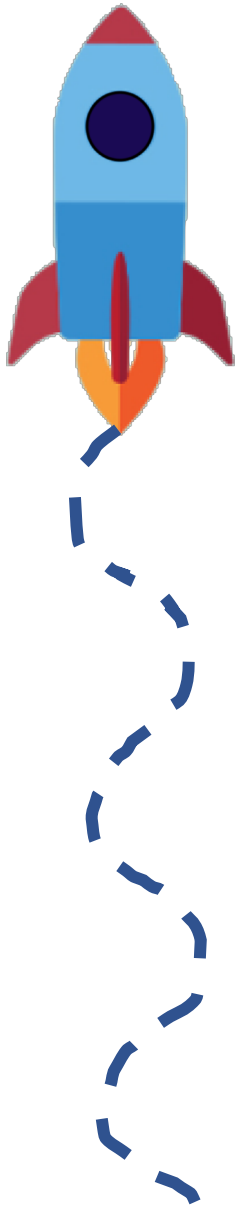


Unit 5						
Home	Understand static electricity; know about the life of Thomas Edison	1. Performing simple tests	static electricity, electricity, light switch, Thomas Edison, power	Statically Charged!	Statically Charged! Balloon, Comb, Tissue paper, Scissors, Handout	Look at this Thomas Edison quotation: "I have not failed, I have just found 10,000 ways it won't work." What was Edison trying to teach us? Why were oil and gas lamps not always the best idea for lighting before the invention of the electric lightbulb? (choose two options) Which of these needs electric light to work? (choose all that apply) True or false: A lightning bolt is caused by static electricity. Watch the expert film with Heather again. Which of these items can generate static electricity?
	Know the basic parts of simple electric circuits	1. Performing simple tests	light bulb, power station, wire, battery, switch	Vinegar Power!	Vinegar Light Circuit and Ice Tray Battery, White or red vinegar, Safety glasses, 5 galvanized nails, 1 LED, 5 pieces of copper, 1 ice tray, Handout	Which of these is the power source in a simple circuit? Why should you never open up or play with a battery? How can a switch affect a circuit? (choose two answers) A connection of electricity between a power source and a device is called a {{circuit}}. A simple circuit needs a power source such as a {{battery}} as well as {{wires}} to allow the electricity to surge to the device. Some circuits have a {{switch}} to turn the power on and off. Which of these circuits would light the bulb?
	Know why electricity is dangerous; know safety rules for electricity	2. Gathering and recording data to help in answering questions	safety, electric shock, danger, electrical pathway, safety rules	Creating a torch	Creating a Torch, Magnet, Insulated copper wire, Tape, LED, 2 alligator clips, Tube, Handout	Which of these is more powerful? Which of these are good safety rules to remember around electricity (choose all that apply) True or false: An electrical circuit must always have a switch. You must be {{careful}} around electricity. It is very {{powerful}} and can cause great {{harm}} if used incorrectly. It is important to remember never to touch electrical items when {{wet}} and also to tidy electric wires away to prevent {{tripping}} over them. Which of these situations are dangerous and which are safe?

Unit 6						
Safety and First Aid	Learn about fainting and shock: First Aid	1. Observing closely, explaining using models	clinical, vomit, faint, shock, CPR	The Recovery Position.	First Aid - Shock and Fainting, Handout, The Recovery Position, Room with floor space	Why does fainting happen? What is the first thing someone should do if they are suffering from shock? One of your friend faints. Put these in order of what you should do to help. What machine can be used to re-establish a rhythmic heartbeat? Which of these would be useful to have with you if someone fainted?
	Learn about foreign objects: First Aid	Sorting and classifying.	rubbing alcohol, perforate, inflamed, foreign, syringe	Sequencing the tasks needed to treat somebody.	Storyboarding CPR, Expert Film, Handout, CPR Demonstrations, Large floor space, Some schools may have a test dummy/body to work with, Handouts, Unit Booklet	What is a 'foreign object'? Which of these is good to do before you remove a foreign object such as a splinter? Why do you need to be careful when helping someone who has a problem with their ears? True or False, if someone gets something in their eye, the best thing to do is rub it. Watch today's expert film with Heather. Which of these objects would you be likely to find in a First Aid box?
	Learn about animal bites and poisoning: First Aid	Observing closely and using simple equipment.	poison, sting, rabies, ingestion, prescription	Dress a wound.	Animal Bites and Poison, Handout page 1, Dress a Wound, Clean water, Gauze, Bandage, Surgical tape, Surgical gloves, How to Treat Bites and Poisons, Handout page 2, First Aid Booklet	What is the injection or medicine called to help someone recover after a snake bite? If you only have a small cut or scratch from an animal, which of these should you do? (tick all that apply) Which of these animal's bites or stings can be poisonous? Which of these should you avoid to prevent poisoning yourself? (tick all that apply) Which of these animals bite and which sting?
	Learn about stroke and spinal injuries: First Aid	4. Using their observations and ideas to suggest answers to questions	spinal injury, spinal cord, stroke, trauma, vital	What is FAST? Creating an information leaflet.	What is FAST? Handout page 1 Have you got the Backbone? - Understanding the Spine Handout page 2 Floor space for demonstrations First Aid Booklet	What is another name for the brain and spinal cord? The word 'FAST' is important to remember to spot if someone is suffering from a stroke. What does this stand for? Which of these can also be signs of a stroke? (choose all that apply) True or False: If you think someone has a spinal injury, the first thing you should do is move them. Watch today's expert film where our paramedic Paul explains how to help someone with a spinal injury. Put these statements in the correct order to show the process of helping someone with a spinal injury.

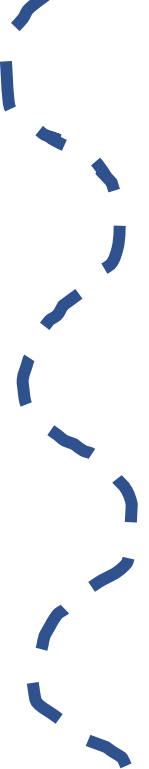
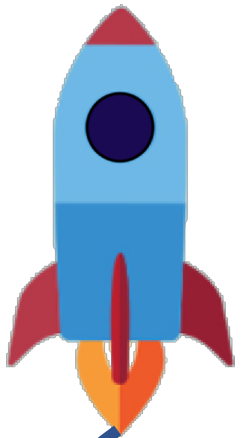


Unit 7						
	1. Know that living things live in environments to which they are suited	1. Performing simple tests	1. polar bear, habitat, grub, woodland, woodpecker	1. Woodlice investigation. 1. Soil experiment.	Soil Experiment Measuring Jug Water An Assortment of Soil Types Spade Plastic bottles cut up to create rings Investigation Sheet. Woodlice Investigation Some woodlice (!) Dish/container Filter Paper Water Cover for container Lyric's sheet, Handout	Which of these is the best definition of the word 'habitat'? Which of these are true about how a polar bear is adapted to its environment? Which of these animals may have its natural habitat in a woodland? Order these items in a food chain, from the top of the food chain (predator) to bottom of food chain (producer). Sort these animals in to those who live in the desert and those who live in the rainforest. It helps to look at the pictures and think whether they would best be suited to the desert or rainforest!
	2. Understand desert, underground and ocean habitats	2. Gathering and recording data to help in answering questions	2. earthworm, desert, lizard, cactus, pond	2. Investigate and build a Habitat.	Habitat Investigation Quadrat – a wire frame 0.25 m x 0.25 m, or 0.5 m x 0.5 m Key to plants – see links Clipboard Pencil Record sheet, Soil Audit Challenge Spade Square foot grid, Song lyrics sheet, Handout, Soil Investigation Sheet	Which of these creatures lives underground? (choose all that apply) Which of these words may describe a desert habitat? Complete the statement: There are many types of water-based habitats, such as ponds, lakes, rivers and {{oceans}}. Oceans have many different {{species}} of sea-life, such as fish and coral. Fish can not {{survive}} outside water, and some animals live under water their whole lives. Others, such as {{amphibians}} like frogs and salamanders, live on land and in the water. Look at these habitat pictures - sort them in to habitats it is most and least easy for humans to survive in. Can you explain your choices? True or false - the camel is best adapted for life living on the beach in a seaside resort.
	Know that most of the Earth is covered by water; understand that oceans have tidal salty water	4. Using their observations and ideas to suggest answers to questions	tide, Pacific Ocean, shore, Indian Ocean, Arctic Ocean	Create a model of the ocean floor.	Making a Model of the Ocean Floor, Glue , Paint, Card , Cardboard box, Coloured paper, Scissors, Handout, Today's Song - Habitats, Lyric sheet, Tropical Fish Handout	Which of these is an Ocean on Earth? Which of these is the best definition of a tide? True or false: The tide is pulled back and forth by the attraction of the Moon and the Sun. The oceans and seas are made of {{salt}} water and have a {{tide}} that flows back and forth. Other types of water features have {{fresh}} water, such as rivers and lakes. Different plants and {{animals}} live in these habitats. Sort these organisms in to those which live in salt water and fresh water.
Our Environment	Learn about currents, understand the landscape of the ocean	4. Using their observations and ideas to suggest answers to questions	ocean, current, Gulf Stream, Atlantic Ocean, Florida	Create a model of the ocean floor.	Making a Model of the Ocean Floor Glue Paint Card Cardboard box Coloured paper Scissors, Handout, Today's song - Habitats Lyric sheet, Gulf Stream Investigation Resource	Which of these makes the oceans move? What is the name of the current which runs across the Atlantic? What effect does the Gulf Stream have on Britain's weather? (choose all that apply) The bottom of the ocean is called the {{seabed}}. Many deepwater animals and plants live here. The seabed can be very deep or, when the sea is {{shallow}}, closer to the surface. If the seabed sticks out of the water, it is called an {{island}}, or where a valley is deep in the sea, it is called a {{trench}}. Which of these is found on the seabed and which of these are carried by the motion of the sea's movement?
	4. Appreciate the dangers to ocean life	4. Using their observations and ideas to suggest answers to questions	4. marine, continent, litter, oil tanker, overfish	4. Create a poster warning about the dangers of rubbish for ocean life.	Resources to make a poster: Paper, Paint, Glue, Magazines, Making a Jellyfish, Elastic bands, 2 Litre Bottles, Blue food colouring, Water, Plastic bags, Scissors, Handout	Which of these animals which humans eat are caught in the sea? (choose all that apply) Which of these statements is true? (choose all that you think are true) Complete the statement: The ocean is home to a large amount of beautiful and {{colourful}} plants and animals. Humans have had a {{damaging}} effect on life in the sea due to {{pollution}}. There are several ways we can help prevent this pollution, such as not throwing away {{plastics}} and be avoiding {{oil}} spills. You have drunk a bottle of water. How could that empty bottle end up polluting the water? Which of these plastic items could you avoid by using a paper version instead, which is much better for our environment?
	6. Appreciate that environments are constantly changing	6. Gathering and recording data to help in answering questions	6. rainforest, moisture, extinct, climate, endangered	6. Cleaning Your Environment.	Cleaning Your Environment Litter pickers Fluorescent bibs Gloves, Today's song - Habitats Lyrics sheet, Handout	In which of these environments would an oak tree thrive best? Which of these definitions of a habitat is correct? Complete the statement: One of the most important {{habitats}} in the world are rainforests. They are tall, dense and {{green}} forests which grow in the areas around the {{equator}}. Rainforest are home to many wonderful animals and {{plants}}. Which of these is a way that humans can badly affect a habitat in the countryside? (choose all that apply) Before and after - which of these environments are unspoilt and which have been changed due to human activity?

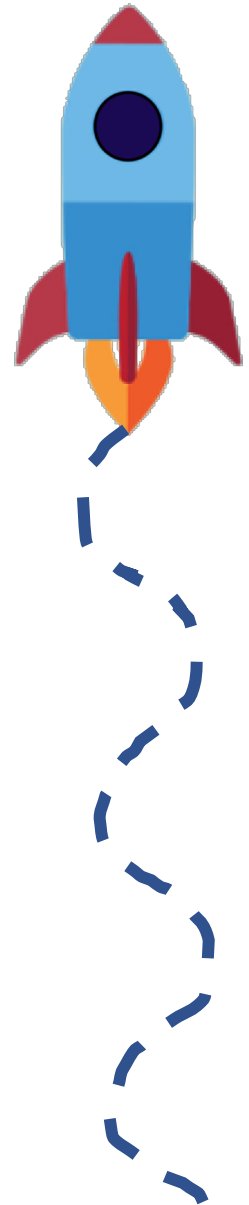


Unit 8

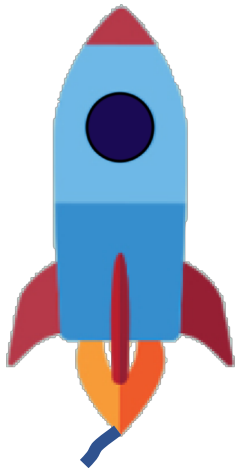
Our Universe	6. Learn about the different phases of the Moon	6. Making observations from scientific models	6. moon, full moon, half moon, crescent moon, astronaut	6. Modeling the moon	Model moon, Handout - page 1	Which of these statements is true? Which of these are phases of the moon (tick all that apply) True or false: There are people and plants on the moon. Complete the statement: The Moon orbits the Earth every {{28 days}} and the cycle is called the {{phases}} of the Moon, during which time, the Moon changes {{shape}}. The Moon isn't somewhere that human beings can {{live}} but several landings have been made on Moon by {{astronauts}}. Which of these is a picture of Moon, and which are not?
	Know the planets in our Solar System	6. Making observations from scientific models	planet, orbit, Solar System, Uranus, Pluto	Making a Lunar Lander	Making a Lunar Lander, 1 piece of stiff paper or cardboard (approximately 4 x 5 in/10 x 13 cm), 1 small paper or plastic cup, 3 index cards (3 x 5 in/8 x 13 cm), 2 regular marshmallows, 10 miniature marshmallows, 3 rubber bands, 8 plastic straws, Scissors, Tape, Handout	How many planets are there in the Solar System? Place the planets in order - with closest to the Sun first and furthest away last. True or False - Venus can sometimes be seen from Earth. Which of these planets has a Moon or several Moons? (choose all that apply) Which of these planets are larger than Earth and which are smaller?
	Recognise constellations	6. Making observations from scientific models	star, constellation, stargazing, The Plough, viewer	Making a Constellation Viewer.	Making a Constellation Viewer, Safety Pin, Glue, Plasticine, Torch, Paper plate, Handout	What are a group of stars called that make a pattern or picture when formed together? Which of these constellations looks like a horse-drawn cart? True or false: The Sun is a star. Which of these are stars made from? Which of these are real star constellations and which are fake (made up)?
	Know about the Earth's orbit and rotation around the Sun	6. Making observations from scientific models	Nicolaus Copernicus, spinning, rotation, day, night	Creating a Colour Spinning Wheel.	Creating a Colour Spinning Wheel, White corrugated cardboard, Pointed tip scissors, Red, blue, and yellow markers, String or yarn, Handout, Adult supervision, Handout	Which of these statements is true? True or false: The Earth takes one month to rotate once. Who said: "The Sun doesn't move, it only looks that way because really the Earth is moving, spinning around like a top"? Which of these shapes best describes how the Earth orbits around the Sun? Order these from which takes the shortest amount of time to the longest amount of time.
	Know what the horizon is and understand the vastness of the Earth	6. Making observations from scientific models	glimpse, horizon, curve, photograph, vast	Making Your Own Earth.	Make Your Own Earth! Balloon / large styrofoam ball, Newspaper, Flour, Water, Bowl, Paint, Paperclip, Sponge, Handouts	Which of these is the best description of the 'horizon'? True or false: Water covers around 3/10 of the Earth's surface. Which of these statements are true? It is difficult to {{imagine}} the size of Earth. When we look at the {{horizon}} it sometimes feels like we are looking at the {{end}} of Earth, but actually this is impossible. We can only see the whole of Earth when it is photographed from {{Space}}. Which of these pictures shows a horizon and which just shows a sunset or sunrise? (be careful!)
	Understand that space travel helps us to learn more about the Earth and Sun	6. Making observations from scientific models	Helen Sharman, Buzz Aldrin, observation, camera, Outer Space	Making a Rocket.	Making a Rocket, 16 oz bottle, Rubber stopper (needs to fit in opening of bottle), Tablespoon, Bicarbonate of soda, Strong tape, Scissors, Three unused pencils, Funnel, White vinegar, Paper towel, Handout, Summative Test	What are scientists who travel to Space called? Where on Earth is the sun at its hottest? Which of these statements is true? (select all that apply) Order these in size - from largest to smallest. Which of these could be used to help observe Earth from Space?



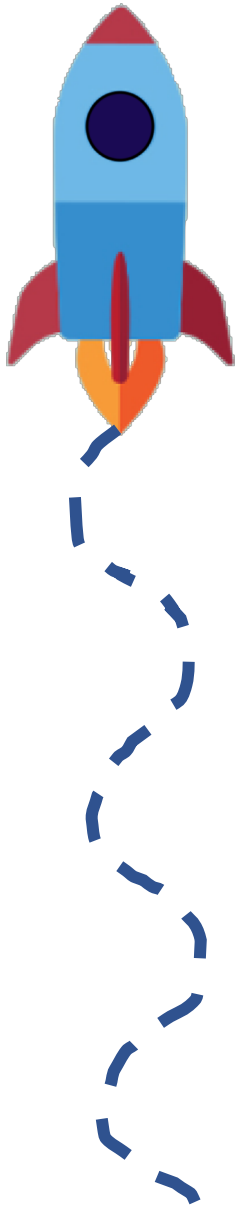
Unit 9						
Rocks	Describe what soils are made of	Setting up simple practical enquiries, comparative and fair tests	peat, clay soil, chalky soil, sandy soil, texture	Soil Types Experiment	Soil Types Experiment 3 or 4 dry soil samples of sandy soil, peaty soil, clay soil, and chalky soil. Water Hand 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?
	Observe rocks, including those used in buildings and gravestones	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	lichen, acid rain, chemical weathering, physical weathering, biological weathering	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?
	Classify different types of gravestone weathering	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	marble, sandstone, limestone, flake, granite	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?
	Learn about compost	Identifying differences, similarities or changes related to simple scientific ideas and processes.	organic, decomposition, compost, landfill, fertiliser	The Great Compost Challenge!	Compost Investigation 6 clear jars At least one set of rubbish with: an apple core a piece of plastic two leaves from outside a piece of bread a piece of tin or aluminium foil a piece of paper Soil, enough to fill six jars (from outside, not store-bought)	True or false: When you throw rubbish in the bin, you are not causing any pollution. {{Composting}} happens when natural, organic waste is {{broken down}} - such as fruit and vegetable skins, plants and {{grass}}. Normally someone controls this process by placing all the decomposing waste in one place, such as a compost pile or bin. Which of these items are examples of organic waste and can be naturally broken down. Which of these items would help make fertile compost and which wouldn't? Can you spot the odd one out?



Unit 10						
Force, Work and Energy	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 loudstone. 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 11						
Light	Know what a periscope is and how it is used	Asking relevant questions and using different types of scientific enquiries to answer them	periscope, submarine, parallel, viewer, enlarge	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.
	Recognise that light from the Sun can be dangerous and that there are ways to protect your eyes	Asking relevant questions and using different types of scientific enquiries to answer them	ultraviolet rays, calcium, sungalsses, sunburn, sun protection factor	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?
	Measure shadows and find out how they are formed and what might cause the shadows to change	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	position, intermediate, sundial, clockwise, indirectly	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?
	Learn about light when taking photographs	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	flash, dim, cast, illuminate, photograph	Create a photographic map of an area outside.	Photographic Map Cameras Printers A3 paper Glue Scissors IT suite if available	The hour before {{sunset}} and the hour before {{sunrise}} are both called {{The Golden Hour}}. The {{light}} at these times of day throws a warm, golden glow on a {{photographer's}} subject. Shadows are {{long}} at these hours of day. Photographers often like to take {{photographs}} at these times of day, because of the pleasing effect of the light. True or false: Shadows created by the Sun can add depth and texture to photographs. Sometimes the lens of a camera can be slightly convex. Why do you think this would be helpful to a photographer? Why would it be more difficult to take a good photograph of someone outside on a bright, sunny day? Find 3 answers. What is the correct spelling of this word, that means 'to light up'.



Unit 12						
Sound	Explore how sound is caused when an object vibrates	1. Setting up simple practical enquiries, comparative and fair tests	1. eardrum, voice box, sound, sound waves, vibrating	1. Exploring sound vibration!	Chicken Cup Paper cups Paperclips or cocktail sticks Wool of various types and/or string of various types Kitchen towels Water Pencils Tape measures, Rice Drum Investigation Plastic cups Elastic bands Rice Cling film Tin containers, Handout	Sound is created by waves moving backwards and forwards. Put these things in the order that they happen when you hear something make a sound. True or false: You cannot hum while holding your nose. Why might someone not be able to hear something when it makes a sound? Can you sort these images into things that block sound and things don't.
	Know that sound travels through solids, liquids, and gases, understand that sound waves are much slower than light waves	2. Asking relevant questions and using different types of scientific enquiries to answer them.	2. echo, volume, speed of sound, telephone, drum	2. Create your own musical bottles then perform a song with your talk partner. Complete the tests on the handout.	How Sounds Travel Investigation A variety of surfaces. Talking Cups 2 paper cups A sharp pencil or sewing needle to help poke holes. String (kite string and fishing lines work well). Paperclips or cocktail sticks. Musical Bottles 6 plastic bottles per group Water Jug, Handout	True or false: Sound moves quicker through air than water. Can you sort these images into examples that prove that light waves move quicker than sound waves. Which of these places would you expect to hear echos? See if you can sort them into places that you would hear echos and places that you wouldn't. If you moved further away from a source that makes sound and light, what do you think would happen to the length of time between the moment that you saw the light and the moment that you heard the sound? Even though sound travels faster through liquids, why do you think that it is hard to hear clearly underwater?
	Learn about the speed of sound and sound intensity, appreciate the speed of Concorde					
	Understand the difference between high and low-pitched sounds	3. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	3. loud, quiet, larynx, vocal chords, high-pitched	3. Creating your sound water whistle.	Sound Water Whistle Straws Scissors Glasses of Water Sound sensor, Rubber Band Band Rubber bands Door/drawer/cupboard handles, Handout	Which of these things makes a high pitched sound and which of them make low pitched sound? Complete the statement: When you sing a high note, your vocal chords vibrate {{very quickly}}, hundreds of times a second. When you sing a {{low note}}, your vocal chords vibrate more slowly. This is called the {{pitch}} of your voice. If you place and hold a ruler half way on a table, pull it down and let it go, it will make a sound. If you move the ruler slightly further onto the table while it is still vibrating, what do you think will happen to the pitch of the sound? Your body makes sound by moving air across your larynx, vibrating your larynx and making sound. Which of these statements are true?
	4. Recognise sounds get fainter as the distance from the sound source increases; understand soundproofing	4. Setting up simple practical enquiries, comparative and fair tests	4. muffle, soundproof, decibel, summon, vuvuzela	4. Sound muffler challenge!	Sound Proofing Fair Test Boxes Sound! (phones with music playing, wind-up music boxes, ticking clocks, music players etc.). Cotton wool Bubble wrap Tissue paper Quilt batting Foil Felt Kitchen towels Woolen scarves Any other material you have that you think you would like to get the children to test, Handout	True or false: Sound, just like light, can move through a vacuum. Complete the statement: All materials are different in terms of letting sound pass through them. {{Hard}} materials such as metals allow sound to pass through them easily. However, softer materials such as foam or {{absorb}} the sound. This makes foam a good material to use to {{sound proof}} rooms. Why would you choose to have carpet in a room instead of a hard floor? Which room is the sound more like to echo? True or false: Dress the windows with plenty of fabric to soften the hard surface of the glass.
	5. To know about insulating your ears against sound	5. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	5. ear protection, transit, frequency, distorted, sensitivity	5. Classify materials to see which are best at insulating sound.	Testing Materials as Ear Defenders Materials for testing (paper, cotton wool, cleaning cloths, dusters, aluminium foil, sandpaper, fabric, wool, etc.). Data loggers to measure sound volume, e.g. Decibel 10th, Handout	Which of these materials do you think would best insulate against sound? Pick three. True or false: Bones and muscles transmit sound. True or false: Different materials transmit sounds better than others. Complete the statement: Unless you wrap your {{whole body}} in many thicknesses of insulating material, some sound will always get through, as bones and muscles {{transmit sound}}. Different materials transmit {{frequencies}} better than others. Which of the places do you think that it would be a good idea to wear hearing protection?
	Explore pleasant and unpleasant sounds	6. Identifying differences, similarities or changes related to simple scientific ideas and processes	6. tinnitus, squeal, soundscape, unpleasant, pleasant	6. Creating a sound story.	Mailk's noisy day: Handout	What are some of the reasons that noise barriers are NOT used near motorways? Pick three. True or false: Noise and sound can affect our health. Which of these sound sources do you think produce sounds that people would find pleasant, and which ones do you think make sound that people would find unpleasant? What is the name of the measurement of sound frequency? 'Hertz' (Hz) is used to measure sound {{frequency}}. Sounds between 2,000 and 5,000 Hz were most unpleasant. This is very high-pitched, and our ears are very sensitive to this.



Unit 13						
Matter	1. Explore the work of John Dunlop; identify and compare the usefulness of certain materials when forces are applied	1. Gathering and recording data	1. force, pushing, properties, John Dunlop, material	1. What's it Made From?	Exploring Materials / Materials Audit Labels, lump of wood, clay, paper, a piece of metal, plastic (bit of plastic bag, bit of a drinks bottle, eraser, etc.), cork, card, glass, fabric, ball of wool, Handout	What did John Boyd Dunlop invent? What does friction do? (choose two options) If you stand on a grape and squash it, what force breaks the grape? Group these items by the type of material - stretchy or rigid? Which of these words could be a property of a material? (choose four answers)
	2. Explore the work of Charles Macintosh; understand how the properties of materials can be changed	2. Performing simple tests	2. Charles Macintosh, penetrate, repel, absorbent, waterproof	2. Test a range of materials to find how well they can be waterproofed.	Orange: Sink or Swim? Orange Bowl Water, Waterproofing Experiment Wax Hairdryer An old canvas shoe Bowl/Jug Water, Handout	True or false: Charles Macintosh invented the first ever rainproof cloth. Which two inventors worked together to produce reliable rainproof sheets and coats. Complete the statement: Macintosh's invention has been very important because it means we can keep ourselves {{dry}}. This has meant we are able to go outside in a wider range of {{weather}} types and protect us from the elements. This, in turn, would stop us from getting too {{cold}}, so waterproofing has been an important invention for our {{health}}. Group these items into waterproof and non-waterproof.
	3. Know about John McAdam's invention, recognise that new materials are constantly being invented	3. Performing simple tests	3. John McAdam, metal, tarmac, maintenance, rubber	3. Change the Properties of Material.	Water Absorbency Test Material Samples: Kitchen towel Paper Greaseproof Paper Tissue Paper Cardboard Wax Bowls and water Pipette or teaspoon, Handout, Investigation Sheet	What can be a problem with a road without tarmac? (Tick all that apply) What did McAdam originally use for his roadbeds? Complete the statement: The best roads we use today are made of McAdam's invention, {{tarmac}}. This combines tar and {{bitumen}} together to create a {{smooth}} and flexible surface. This has made roads safer, cheaper and more {{durable}} which means they last longer. Rubber is a better material to use for knives and forks than metal. Group these pictures into good and bad surfaces for roads. What could be the problems and risks from a bad road surface?
	Investigate solids, liquids, and gases	6. Gathering and recording data to help in answering questions	matter, solid, liquid, gas, air		Ice Melting Item 1: Bottled water (refrigerated) Item 2: Large bowl or container Item 3: Ice Item 4: Rock salt Item 5: Thermometer , Choc Ice! Item 1: Small bowl or dish Item 2:Scoop of ice cream Item 3: Melted chocolate Item 4: Freezer, Handout, Investigation Template sheet	What is everything in the world made from? You can see and touch the matter in an object. What could it be? (select two answers) You can see and touch liquids and solids, but it is not the same for {{gases}}. The air we breathe is a gas, and the {{wind}} we can feel on our face is made from gases. What about when we blow up a {{balloon}}? The balloon itself is a {{solid}} but the air inside it is a gas. Watch today's expert film with Adam Linden before answering the question. What can a metal be at room temperature? Sort these in to solids and liquids. Could any of them change to another state?
	Explore examples of solids, liquids, and gases	6. Gathering and recording data to help in answering questions	state, boil, atom, molecule, pattern	Fizz	How to Make a CO2 Sandwich Safety glasses Measuring cup and spoons Vinegar Bicarbonate of soda Resealable bags Toilet paper, Changing Matter Containers with varied solids inside (marbles, soil, stones) Jug/bowl of water Sponge Magnifying glass, Handout	True or false: The kind of form matter is in is called a 'case of matter.' If you put water (a liquid) into a freezer overnight, what will it become? How can water (liquid) turn into steam (gas)? All matter - solids, liquids and gases - are made up of {{atoms}} and molecules. They are so {{small}} that you can't see them all until there is enough to make up something. Everything around us is made up of a {{pattern}} of atoms and molecules. Imagine you had a block of ice cubes. Order the following statements so that it shows the process for how the solid (ice) will become a liquid (steam)
	4. Investigate squashing, bending, twisting, and stretching	4. Performing simple tests	4. squash, bend, twist, stretch, force	4. Let's make some silly putty to twist, bend, squash and stretch!	Making Silly Putty, 45g cornflour, 60 ml washing up liquid, Changing Shape Venn, Hoops , Sticky notes, 10 objects which can change in shape e.g. paperclip, putty, fabric, etc., Handout 1, Handout 2	Which of these materials are the three strongest for making a model? If you wanted to pull or stretch something, which of these would be best to use? Watch today's expert film with Dr. Sam Rowe. Which words does Sam use to describe metals so they can change shape and form? True or false: All materials can change shape. Which of these objects are easier to stretch and which are easier to squash?
	5. Learn the properties of materials that make them suitable or unsuitable for particular purposes	5. Observing closely, using simple equipment	5. suitable, unsuitable, creative, strong, weak	5. Recycled Mus	Recycled Musical Instruments, Recycled materials such as: Greaseproof paper, Elastic bands, Dried beans, Tin can, Handout	Which of these materials is most suitable to make a table from? Which of these items are best made of metal? True or false: Car tyres are best made from plastic. Complete the statement: Some materials are better for some jobs than others. For example, {{paper}} is really good for writing on or making a paper aeroplane, but it wouldn't be good to {{build}} an actual aeroplane. Rubber is {{stretchy}} and is good for clothing such as gloves and tights, but would be useless for building a {{chair}}. People who make objects are always very careful to {{test}} which material is the best one to use. Watch today's expert film with Ian Guest. Using it, decide which materials would be most suitable to use to build features at Fairhaven Gardens. For those which are unsuitable, can you think why?
	6. Compare the uses of everyday materials in and around your school or home with materials found in other places	6. Gathering and recording data to help in answering questions	6. brick, cement, clear, coloured, man-made	6. Material properties. 6. Inside or out?	Bouncability experiment Four different types of ball, e.g. Rubber balls Wooden balls Ping pong balls Footballs Pom pom balls, Handout Investigation Sheet	Which of these is the material and which is the object made from a material? How can you work out how old a tree is? True or false: Watch today's expert film with Ian Guest, who explains what we can learn from the 'rings' inside a tree. Use this to tick which of the following statements are true. True or false: A greenhouse is best made from transparent glass or clear plastic. Complete the statement: Plastic is a very {{popular}} material to use because it has a range of uses. We use {{twenty}} times the amount we did fifty years ago. However, if we throw away plastic it can {{harm}} wildlife. Therefore, we need to remember to re-use, reduce, {{recycle}}.



Unit 14						
Transport and Communication	Explore scientific news items to help develop your awareness of science	Using their observations and ideas to suggest answers to questions.	5G, smart, data, sensor, nanotechnology	Persuasive writing challenge	Reviewing and Writing a News Article Handout - newspaper article Selection of non-fiction articles	What is unique about the bandages mentioned in today's lesson? What reasons are for the Smart Bandage being useful? (choose all that apply) Look back at today's rocket words. What does the word 'SMART' stand for in 'smart bandage'? The smart bandages are a clever new technology which use {{sensors}} to monitor patient's {{wounds}}. There have been {{trials}} taking place to make the bandage both {{cheaper}} to make as well as in different {{colours}}. Which of these are real scientific inventions and which are fake?
	Learn how to travel	Asking relevant questions and using different types of scientific enquiries to answer them	advantage, schedule, visa, passport, disadvantage	Planning a Dream Holiday.	Planning a Dream Holiday Travel brochures Country Fact files (Handout) Large paper (sugar paper) Pens Scissors Glue, Modes of Transport Handout provided	Which of these are important to think about when planning a travelling trip? Which of these documents would you need when travelling abroad on an aeroplane? True or false: The quickest way to travel abroad is by boat. The most common form of motorised transport for adults is by {{car}}. Cars are becoming more {{expensive}} to run because of the price of {{fuel}}. They are also bad for the environment because of {{pollution}}. Which of these forms of transport are the three best or the environment and which are the three worst? Think: why are the most environmental not always suitable for all journeys?
	Learn about transport and tourism	Asking relevant questions and using different types of scientific enquiries to answer them	hire, numerous, taxi, gondola, tourist	Design Your Own Island.	Design Your Own Island! Handout - Planning the Island Handout - Designing the Island Template Pens Glue Pictures of different tourist spots, Design Your Own Island - 3D! Plaster of Paris water mixing bowl aprons paint Permanent marker pens paper towels	Which of these is the best definition of a tourist? Which of these items are most likely for a tourist buy when they go to a new place? (choose all that apply) True or false: Everyone in the world has been a tourist at some point. For a country to have successful tourism, there must be good {{transport}} links. For example, they must have a busy {{airport}} for people travelling from abroad. They usually have good {{bus}} routes and also many {{taxis}} to help people get to specific places. Which of these places is in Europe and which are not?
	Learn about media used for communicating	Asking relevant questions and using different types of scientific enquiries to answer them	smartphone, character, social media, restrict, media	Tell the world about an exciting new scientific discovery!	Handout	True or false: The internet and WiFi has transformed the way people communicate with each other. Which of these are social media platforms? How old do you have to be before you can use Instagram, Twitter, FaceBook? When you use social media, {{blog}}, vlog, text, whether on a {{computer}} or on a mobile phone, you are {{writing}}, just like you would about things you {{learn}} at school. What other ways are used to communicate news and ideas, other than by social media?
Unit 15						
My Family	Compare generations of families of humans, plants, and animals to understand how characteristics are inherited	Using their observations and ideas to suggest answers to questions.	similarities, resemblance, generation, Grego Medel, characteristics	It's A Dog's Life.	Inheritance Patterns Inheritance Patterns page of the Handout Pens, It's a Dog's Life It's a Dog's Life page on the Handout Pencils	What does 'inherit' mean in biology? Which of these could you inherit from one of your parents? To understand what we inherit, many scientists have conducted {{experiments}} on plants, animals and other organisms. One such scientist was a monk called {{Gregor Mendel}} who investigated inheritance based on {{peas}}. We can inherit such things as our looks, life cycles and diseases from our {{parents}}. True or False - if two crocodiles bred together, they could make an alligator. Split these up into the parents and baby of each species.

