

SCIENCE - LONG TERM CURRICULUM PLAN 2023-24

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery					
<p><i>To start to talk about own immediate environment Use a pull-back toy correctly, turn a sound feature on and off</i></p>	<p>Understand the current season and typical weather, clothing and events</p> <p>To know that objects can move within the environment (wind, water etc.)</p> <p>Explore materials, e.g., mud, puddles, sand, grass and feathers</p> <p>Use toys with buttons, flaps and simple mechanisms and begin to learn how to operate them</p>	<p>Talk about and notice the changes in materials, e.g., ice, snow, mud, chocolate and jelly</p> <p>Use pipes, funnels and other tools to carry/ transport water from one place to another</p> <p>Show an interest in technological toys with knobs, wind-up or pulleys, real objects, such as cameras, and touchscreen devices, such as mobile phones and tablets</p>	<p>To know that animals need things to live, just as humans do</p> <p>Understand the life cycle of an animal - they are born, they grow – using stories</p> <p>Use images, stories and real experiences to develop an understanding of animal mothers and babies, e.g. Sheep / Lamb</p> <p>Begin to understand the need to respect and care for the natural environment and all living things</p> <p>To know that trees, flowers and grass are plants and are living and grow</p> <p>Plant seeds, care for them and know they will grow into a plant. Relate this to life cycle of a plant</p> <p>To know we can help to look after our immediate environment e.g. tidy up, put rubbish in the bin</p> <p>Start to group living things e.g. plants, animals, people</p>	<p>Use all their senses in hands-on exploration of natural materials</p> <p>Explore collections of materials with similar and/or different properties</p> <p>Talk about what they see, using a wide range of vocabulary</p> <p>Explore how known and new objects work, knowing they may be electrical, manual etc</p> <p>Talk about how different forces impact on ourselves / objects, e.g. sails of a ship</p> <p>Talk about different materials using a wider range of vocabulary</p> <p>Know that some materials change and give examples e.g. ice, baking</p> <p>Explore and talk about different forces e.g., push, pull, things you feel, wind, rain, weather</p> <p>To sort different materials</p>	<p>Understand and begin to name the four seasons and typical weather, clothing and events</p>





Reception

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<ul style="list-style-type: none">▪ To talk about different seasons and describe the weather.▪ What is it like in autumn?	<ul style="list-style-type: none">▪ What happens to chocolate when it gets warm?▪ What makes porridge yummy?▪ Which material will make the best cloak for Little Red Riding Hood?	<ul style="list-style-type: none">▪ Keeping teeth healthy. Introducing tooth brushing.▪ What is it like in winter? (Investigate freezing and melting)▪ What materials float and sink?	<ul style="list-style-type: none">▪ How does a tadpole change?▪ Where does a butterfly come from?▪ To investigate and sort minibeasts and insects.▪ What is it like in spring?	<ul style="list-style-type: none">▪ What happens when we plant a seed?▪ How can I grow peas?▪ What is the allotment in our school?▪ What are the main parts of a plant?▪ What do plants look like?	<ul style="list-style-type: none">▪ What is it like in summer?






Year 1						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
N/C Objectives	<p><i>Everyday materials</i></p> <ul style="list-style-type: none"> Distinguish between object & material from which it is made Identify / name variety of everyday materials, inc wood, plastic, glass, metal, water, & rock Describe simple physical properties of variety of everyday materials Compare / group variety of everyday materials on basis of simple physical properties 	<p><i>Seasonal changes</i></p> <ul style="list-style-type: none"> Observe changes across four seasons Observe / describe weather associated with seasons & how day length varies 	<p>Animals, inc humans</p> <ul style="list-style-type: none"> Identify / name variety of common animals inc fish, amphibians, reptiles, birds & mammals Identify / name variety of common animals that are carnivores, herbivores & omnivores Describe / compare structure of variety of common animals (fish, amphibians, reptiles, birds & mammals, inc pets) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 	<p><i>Seasonal changes</i></p> <ul style="list-style-type: none"> Observe changes across four seasons Observe / describe weather associated with seasons & how day length varies 	<p><i>Plants</i></p> <ul style="list-style-type: none"> Identify / name variety of common wild & garden plants, inc deciduous & evergreen trees Identify / describe basic structure of variety of common flowering plants, inc trees <p>Also teach: data handling through science.</p> <ul style="list-style-type: none"> Link to DT (food) 	
Objectives	<p><u>Chemistry - Everyday Materials</u></p> <ol style="list-style-type: none"> What are materials? What are objects made from? What are different materials like? How do materials behave? Let's Investigate - Which material makes the best rain coat? Who is Charles Macintosh? 	<p><u>Biology – Seasonal Change - Autumn and Winter</u></p> <ol style="list-style-type: none"> What are the names of the four seasons? What changes happen in autumn and winter? What is the weather like in autumn and winter? (Take the opportunity to ask “What is the weather like in winter?” when we have snowfall/winter's day.) 	<p><u>Biology - Animals including humans</u></p> <ol style="list-style-type: none"> Do you know what your body parts are called? What are the five senses? Let's Investigate – Can you taste with your nose? Do you know the parts of animals? Which groups do animals belong to? What do different animals eat? Who is Steve Backshall? 	<p><u>Biology – Seasonal Change - Spring and Summer</u></p> <ol style="list-style-type: none"> What changes happen in spring and summer? What do trees look like in the different seasons? Let's Investigate – How much daylight do we get in different seasons? (Create a pictogram.) What is the weather like in spring and summer? 	<p><u>Biology – Plants</u></p> <ol style="list-style-type: none"> What plants can you find outside? (Set up investigation) What are wild plants? What are the parts of a plant and a tree? What are the different types of trees? Let's Investigate – How tall can a bean grow? Who is Katherine Esau? 	

		<p>4. Let's Investigate – How much rain falls in autumn?</p> <p>5. Who is Admiral Robert Fitzroy?</p>		<p>5. Who are Benjamin Green and Franz Greiter?</p>	
Vocabulary	Materials, wood, plastic, glass, metal, water, rock, hard, soft, bendy, smooth.	Spring, Summer, Autumn, Winter, sun, moon, day, night, light, dark, daylight.	Fish, amphibians, reptiles, birds, mammals, carnivores, herbivores, omnivores.	Spring, Summer, Autumn, Winter, sun, moon, day, night, light, dark, daylight.	Wild plants, garden plants, deciduous, evergreen trees, leaves, flowers, petals, fruit, roots, bulb, seed, branches, stem, trunk.
Investigation	<p>Which material makes the best raincoat?</p> <p><i>Focus – Prediction</i></p>	<p>How much rain falls in autumn?</p> <p>Make a rain gauge.</p> <p><i>Focus – Method</i></p> <p>Discuss George James Symons</p>	<p>Can you taste with your nose?</p> <p><i>Focus – Conclusion</i></p>	<p>How much daylight do we get in different seasons?</p> <p><i>Focus – Question</i></p>	<p>How tall can a bean grow?</p> <p>Plant bean seeds in different conditions. Observe this over time.</p> <p><i>Focus – Results</i></p> <p><i>Graph needs linked to Maths curriculum expectations</i></p>
Scientist	<p>Charles Macintosh</p> <p>Scottish chemist and inventor of the modern waterproof raincoat.</p> 	<p>Admiral Robert Fitzroy</p> <p>Pioneering meteorologist and made daily weather predictions (forecasts)</p> 	<p>Steve Backshall</p> <p>British naturalist and presenter</p> 	<p>Benjamin Green and Franz Greiter?</p> <p>Developers of sunscreen and SPF</p>  	


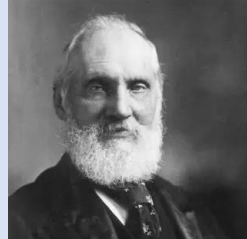
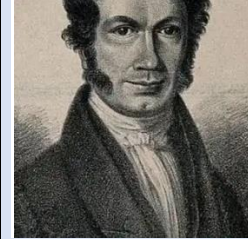
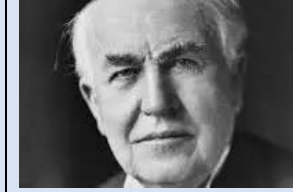

Year 2						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
N/C Objectives	<p><i>Living things & habitats</i></p> <ul style="list-style-type: none"> • Explore / compare differences between things that are living, dead & things that have never been alive • Identify / name variety of plants & animals in their habitats, inc micro-habitats • Describe how animals obtain their food from plants & other animals, using idea of simple food chain, & identify & name different sources of food • Identify most living things live in habitats to which they are suited & describe how different habitats provide for basic needs of different kinds of animals & plants, & how they depend on each other 	<p><i>Uses of everyday materials</i></p> <ul style="list-style-type: none"> • Identify / compare suitability of a variety of everyday materials, inc wood, metal, plastic, glass, brick, rock, paper & cardboard for particular uses. • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting & stretching 	<p><i>Animals, inc humans</i></p> <ul style="list-style-type: none"> • Notice animals, inc humans have offspring which grow into adults. • Find out about/ describe basic needs of animals, inc humans, for survival (water, food & air) • Describe importance for humans of exercise, eating right amounts of different types of food, & hygiene. 		<p><i>Plants</i></p> <ul style="list-style-type: none"> • Observe / describe how seeds & bulbs grow into mature plants • Find out / describe how plants need water, light & suitable temperature to grow & stay healthy 	
Objectives	<p><u>Biology – Living things and their habitats</u></p> <ol style="list-style-type: none"> 1. Is it living, dead or never been alive? 2. What lives in our local habitat? 3. What is a micro-habitat? 4. What are the different world habitats? 5. What is a food chain? 6. Let's Investigate – Woodlouse 	<p><u>Chemistry – Materials and their uses</u></p> <ol style="list-style-type: none"> 1. What are materials used for? 2. How are materials used in and around school? 3. How suitable is a material? 4. Let's investigate- How can materials change shape? 5. Why recycle? 	<p><u>Biology - Animals including humans</u></p> <ol style="list-style-type: none"> 1. How do humans change as they grow? 2. How do animals change as they grow? 3. What do I need to survive? 4. What do humans need to be healthy? 5. Let's Investigate – Are the tallest people 		<p><u>Biology – Plants</u></p> <ol style="list-style-type: none"> 1. Let's investigate: How big will my plant grow if it lives in the _____? (Set up) (Set up planting seeds & bulbs) 2. Which plants live in our local area? 3. What is the life cycle of a plant? 4. Who is Jane Colden? 	

	<p>experiment – Where does a woodlouse like to live?</p> <p>7. Who is Bill Oddie?</p>	<p>6. Who is John McAdam?</p>	<p>the oldest people in our class?</p> <p>6. Who is Louis Pasteur?</p>		<p>5. Let's investigate: How big will my plant grow if it lives in the _____?</p> <p>6. How do seeds and bulbs grow?</p>	
Vocabulary	<p>Living, dead, habitat, microhabitat, food chain.</p>	<p>Suitability, wood, metal, plastic, glass, brick, rock, paper, cardboard, solid, objects, waterproof, squashing, bending, twisting, stretching</p>	<p>Offspring, survival, water, air, food, exercise, hygiene.</p>		<p>Seeds, bulb, water, light, temperature, growth, survival.</p>	
Investigati	<p><i>Which conditions are best for woodlice?</i></p> <p><i>Focus – Prediction & Method</i></p>	<p>How can materials change shape?</p> <p><i>Focus - Question</i></p>	<p><i>Are the tallest people the oldest people in our class?</i></p> <p><i>Focus – Conclusion</i></p>		<p>How do seeds and bulbs grow?</p> <p><i>Focus – Results (Linked to maths curriculum)</i></p>	
Scientist	<p>Bill Oddie Naturalist, conservationist and presenter.</p> 	<p>John McAdam Scottish civil engineer and inventor of 'macadamisation' road building.</p> 	<p>Louis Pasteur Discovered that germs are living things and can be passed through air and touch.</p> 		<p>Jane Colden America's first woman botanist.</p> 	






Year 3						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
N/C Objectives	<p><i>Rocks</i></p> <ul style="list-style-type: none"> • Compare / group together different kinds of rocks based on basis of their appearance & simple physical properties • Describe in simple terms how fossils are formed when things that have lived are trapped within rock • Recognise soils are made from rocks & organic matter 	<p><i>Forces & magnets</i></p> <ul style="list-style-type: none"> • Compare how things move on different surfaces • Notice some forces need contact between two objects, but magnetic forces can act at distance • Observe how magnets attract/repel each other & attract some materials & not others • Compare / group variety of everyday materials on basis of whether they are attracted to magnet, & identify some magnetic materials • Describe magnets as having two poles • Predict whether two magnets will attract/repel each other, depending on which poles are facing 	<p><i>Animals, inc humans</i></p> <ul style="list-style-type: none"> • Identify animals, inc humans, need right types & amount of nutrition & they cannot make their own food; they get nutrition from what they eat • Identify humans & some other animals have skeletons & muscles for support, protection & movement 	<p><i>Light</i></p> <ul style="list-style-type: none"> • Recognise they need light in order to see things & dark is absence of light • Notice light is reflected from surfaces • Recognise light from sun can be dangerous & there are ways to protect their eyes • Recognise shadows are formed when light from a light source is blocked by a solid object • Find patterns in way size of shadows change 	<p><i>Plants</i></p> <ul style="list-style-type: none"> • Identify / describe functions of different parts of flowering plants: roots, stem/trunk, leaves & flowers • Explore requirements of plants for life & growth (air, light, water, nutrients from soil, & room to grow) & how they vary from plant to plant • Investigate way in which water is transported within plants • Explore part that flowers play in life cycle of flowering plants, inc pollination, seed formation & seed dispersal 	
Objectives	<p><u>Chemistry – Rocks</u></p> <ol style="list-style-type: none"> 1. What are the different types of rocks? 2. How can we classify rocks? 3. Let's Investigate – Are all rocks the same? 4. How are fossils formed? 5. Who was Mary Anning? 6. How is soil formed? 	<p><u>Physics – Forces</u></p> <ol style="list-style-type: none"> 1. What are forces? 2. Let's Investigate – Which surface will the car move the fastest on? 3. Which objects are magnetic? 4. How strong are magnets? 5. How do magnetic poles work? 6. Who was Magnes? 	<p><u>Biology - Animals including humans</u></p> <ol style="list-style-type: none"> 1. How do animals get the nutrients they need? 2. What diets do animals have? (omnivore, herbivore, carnivore)? 3. Why do we have a skeleton and what is its function? 4. Why do we have muscles? 	<p><u>Physics - Light and shadows</u></p> <ol style="list-style-type: none"> 1. Why is light important? 2. Which surfaces reflect light? 3. Why can the sun be dangerous? 4. Where do shadows come from? 5. Let's Investigate – <i>How do shadows change?</i> 	<p><u>Biology – Plants</u></p> <ol style="list-style-type: none"> 1. Can I name the parts of a flowering plant and trees? (Set up Let's Investigate) (Set up cactus observation) 2. How does water move around plants? 3. Why are flowers fantastic (including the life cycle of a plant/seeds)? 	

			<p>5. Let's Investigate – Do some people have stronger muscles because they use them more?</p> <p>6. Who was Marie Curie?</p>	<p>6. Who was Percy Shaw?</p>	<p>4. Who is Sir Joseph Banks?</p> <p>5. Let's Investigate – What do plants need to grow well? (Room to grow - cress and/or carrot tops)</p> <p>6. Do all plants need the same to grow well? (Cactus/sand)</p>	
Vocabula	Fossils, organic matter, absorbent, sedimentary, properties.	Magnetic, force, attract, repel, poles, pull, push, contact, friction,	Nutrition, skeleton, muscles, support, protection, movement.	Light, dark, absence, reflect, blocked, solid, shadow.	Air, light, water, soil, nutrients, transported, life cycle, germination, reproduction, pollination, formation, dispersal.	
Investigati	<p>Are all rocks the same?</p> <p><i>Focus - Prediction, Method</i></p>	<p>Which surface will the car move the fastest on?</p> <p><i>Focus - Prediction, Method & Conclusion</i></p>	<p>Do some people have stronger muscles because they use them more?</p> <p><i>Focus – Question, Conclusion</i></p>	<p>How do shadows change?</p> <p><i>Focus – Results, Conclusion (Discuss fair testing)</i></p>	<p>What do plants need to grow well?</p> <p><i>Focus – Question, Results (Discuss fair testing)</i></p>	
Scientist	<p>Mary Anning Fossil collector and palaeontologist.</p> 	<p>Magnets the shepherd Discovery of magnetic material</p> <p>https://www.youtube.com/watch?v=CqIFvFNe1Nk</p> 	<p>Marie Curie Developed use of x-rays.</p> 	<p>Percy Shaw English inventor of the 'cat's eye.'</p> 	<p>Sir Joseph Banks Introduced 80 species of plants.</p> 	




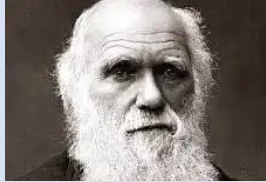
Year 4						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
N/C Objectives	<p><i>Sound</i></p> <ul style="list-style-type: none"> • Identify how sounds are made, associating some of them with something vibrating • Recognise vibrations from sounds travel through medium to ear • Find patterns between pitch of sound & features of object that produced it • Find patterns between volume of sound & strength of vibrations that produced it • Recognise sounds get fainter as distance from sound source increases 	<p><i>States of matter</i></p> <ul style="list-style-type: none"> • Compare / group materials together, according to whether they are solids, liquids or gases • Observe some materials change state when they are heated or cooled, & measure or research temperature at which this happens in degrees Celsius (°C) • Identify part played by evaporation & condensation in water cycle & associate rate of evaporation with temperature 	<p><i>Animals, inc humans</i></p> <ul style="list-style-type: none"> • Describe simple functions of basic parts of digestive system in humans • Identify different types of teeth in humans & their simple functions • Construct / interpret variety of food chains, identifying producers, predators & prey 	<p><i>Electricity</i></p> <ul style="list-style-type: none"> • Identify common appliances that run on electricity • Construct simple series electrical circuit, identifying & naming basic parts, inc cells, wires, bulbs, switches & buzzers • Identify whether lamp will light in simple series circuit, based on whether it is part of complete loop with battery • Recognise switch opens & closes circuit & associate this with whether lamp lights in simple series circuit • Recognise some common conductors & insulators, & associate metals with being good conductors 	<p><i>Living things & habitats</i></p> <ul style="list-style-type: none"> • Recognise living things can be grouped in variety of ways • Explore & use classification keys to help group, identify & name variety of living things in local & wider environment • Recognise environments can change & this can sometimes pose dangers to living things • 	
Objectives	<p><u>Physics – Sound</u></p> <ol style="list-style-type: none"> 1. How are sounds made? 2. How do sounds travel? 3. How can we change the volume of a sound? 4. How can we change the pitch of a sound? 5. Let's Investigate – Which straws make higher and lower pitches and why? 	<p><u>Chemistry - States of matter</u></p> <ol style="list-style-type: none"> 1. What is a solid, liquid and a gas? 2. What are the properties of solids, liquids and gases? (Use this lesson to group/compare materials). 3. How do materials change state? 4. What is the water cycle? 	<p><u>Biology - Animals including humans</u></p> <ol style="list-style-type: none"> 1. What is the digestive system? 2. What happens to food in your mouth and why do we need teeth? 3. Let's Investigate – <i>What happens to teeth in coke?</i> 4. What happens in the stomach and who was William Beaumont? 	<p><u>Physics – Electricity</u></p> <ol style="list-style-type: none"> 1. What are electrical appliances and how do they work? 2. What is an electrical circuit? 3. Let's Investigate - what are conductors and insulators? 4. Let's Investigate – What happens to the bulb if more cells are added? 	<p><u>Biology - Living Things</u></p> <ol style="list-style-type: none"> 1. How can I group living things? 2. What are vertebrates and invertebrates? Do they live in the school grounds? 3. What is a classification key? 4. Let's investigate - <i>How can living things become extinct?</i> 5. How do environmental 	

	<p>(nice additional investigation)</p> <p>6. How can sounds change over distance? Let's Investigate – Can you still hear it? (Non-negotiable!)</p> <p>7. Who was Alexander Graham Bell?</p>	<p>5. Let's investigate – Does temperature affect the rate of evaporation?</p> <p>6. Who was Lord Kelvin of Scotland?</p>	<p>5. Let's Investigate - Food's incredible journey. How can we make a stomach?</p> <p>6. What is a food chain and how do we use them?</p>	<p>5. How does a switch work?</p> <p>6. Who was Thomas Eddison?</p>	<p>changes affect living things?</p> <p>6. Who is Gerald Durrell?</p>	
Vocabulary	Vibration, medium, pitch, volume, wave.	Solids, liquids, gases, state, heated, cooled, temperature, evaporation, condensation	Digestive system, mouth, tongue, oesophagus, stomach, small intestine, large intestine, herbivore, carnivore, canine, incisor, molar.	Appliances, electricity, circuit, cells, wires, bulb, switches, buzzers, series, conductors, insulators.	Classification, habitat, vertebrate, fish, amphibians, reptiles, birds, mammals, invertebrates, environments, producers, predators, prey.	
Investigation	<p>Can you still hear it?</p> <p>Focus – Prediction, method, conclusion</p>	<p>Does temperature affect the rate of evaporation?</p> <p>Focus – Question, prediction, results, conclusion</p>	<p>What happens to teeth in coke?</p> <p>Focus – Method, fair test, conclusion</p>	<p>What happens to the bulb if more cells are added?</p> <p>Focus – All</p>		
	Pictograms, block graphs, tally charts				Bar charts & time graphs	
Scientist	<p>Alexander Graham Bell Invented the telephone.</p> 	<p>Lord Kelvin Determined the temperature of absolute zero.</p> 	<p>William Beaumont Father of gastric physiology.</p> 	<p>Thomas Edison Developed many devices within electric power generation.</p> 	<p>Gerald Durrell Conservationist who worked hard to save many species on Madagascar.</p> 	

Year 5						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
N/C Objectives	<p><i>Properties & changes of materials</i></p> <ul style="list-style-type: none"> • Compare & group everyday materials on basis of properties, inc hardness, solubility, transparency, conductivity (electrical & thermal), & response to magnets • Know some materials dissolve in liquid to form solution, & describe how to recover substance from solution • Use knowledge of solids, liquids & gases to decide how mixtures might be separated, inc filtering, sieving & evaporating 	<p><i>Properties & changes of materials</i></p> <ul style="list-style-type: none"> • Give reasons based on evidence from comparative & fair tests, for particular uses of everyday materials, inc metals, wood & plastic • Explain some changes result in formation of new materials, & this kind of change is not usually reversible, inc changes associated with burning & action of acid on bicarbonate of soda • Demonstrate dissolving, mixing & changes of state are reversible changes 	<p><i>Earth & space</i></p> <ul style="list-style-type: none"> • Describe movement of Earth, & other planets, relative to Sun in solar system • Describe movement of Moon relative to Earth • Describe Sun, Earth & Moon as approximately spherical bodies • Use idea of Earth's rotation to explain day & night & apparent movement of sun across sky 	<p><i>Forces</i></p> <ul style="list-style-type: none"> • Explain unsupported objects fall towards Earth because of force of gravity acting between Earth & falling object • Identify effects of air resistance, water resistance & friction, that act between moving surfaces • Recognise some mechanisms, inc levers, pulleys & gears, allow smaller force to have greater effect 	<p><i>Living things & habitats</i></p> <ul style="list-style-type: none"> • Describe differences in life cycles of mammal, an amphibian, insect & bird Describe life process of reproduction in some plants & animals <p><i>Animals, including humans</i></p> <ul style="list-style-type: none"> • Describe the changes as humans develop to old age 	
Objectives	<p><u>Chemistry – Properties and changes of materials</u></p> <ol style="list-style-type: none"> 1. What are the properties of materials? (Focus on solids liquids and gases initially – recap from Y4). 2. Who is Stephanie Kevlar? 3. What are the properties of materials? (Electrical, magnetic). 4. Let's investigate – Are all materials soluble? 	<p><u>Chemistry – Properties and changes of materials</u></p> <ol style="list-style-type: none"> 1. What is the best material for making black out curtains? 2. Are all changes reversible? 3. How are materials created/changed? (Could we make plastic from milk?) 4. Who is Ruth Benerito? 	<p><u>Physics – Earth and space</u></p> <ol style="list-style-type: none"> 1. What are spherical bodies? 2. What are the planets in our solar system? 3. How has the solar system evolved? (geocentric and 4. Why do we have day and night happen? 5. How does the moon move? 6. Let's Investigate – On which side of the school grounds would you put a wind turbine? 	<p><u>Physics – Forces</u></p> <ol style="list-style-type: none"> 1. What is gravity and how does it work? 2. Let's Investigate: How does a parachute work? 3. What are the effects of water resistance? 4. What is friction and how does it affect moving objects? 5. Let's Investigate - can you design a machine using levers and pulleys to move a heavy load? 6. Who was Sir Isaac Newton? 	<p><u>Biology – Living things and their habitats</u></p> <ol style="list-style-type: none"> 1. What is the life cycle of a plant? 2. Let's Investigate – What happens to a plant cutting if it is place in water? 3. What is the life cycle of a mammal? 4. What are the life cycles of amphibians and insects? 5. What has happened to the plant cutting we placed in water? 	

	5. How can mixed materials be separated?		7. Who is Margaret Hamilton?		6. Who is David Attenborough and why is he well-known? <u>Biology - Animals including humans</u> 1. What does a human timeline look like? 2. Let's Report: Gestation periods and life expectancy.	
Vocabulary	Hardness, solubility, transparency, conductivity, dissolve, substance, solution, filtering, sieving, evaporating, reversible.		Solar system, Earth, moon, sun, spherical bodies, rotation, celestial, orbit, heliocentric, axis.	Gravity, resistance, friction, mechanism, Newton, gears, pulleys, levers.	Mammal, amphibian, insect, bird, reproduction, offspring.	
Investigatio	Are all materials soluble? Focus – Introduce variables and fair testing. Prediction, method, conclusion		<i>Planet Top Trumps</i> Investigate distance from the sun and planet temperature.	How does a parachute work?		
	Tables and line graphs.					
Scientist	Stephanie Kwolek Created Kevlar. 	Ruth Benerito 	Margaret Hamilton Developed flight software for NASA's Apollo Program. 	Isaac Newton Developed theory of absolute gravity. 	David Attenborough Naturalist and tv presenter for nature programs. 	

Year 6						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
N/C Objectives	<p><i>Living things & habitats</i></p> <ul style="list-style-type: none"> Describe how living things are classified into broad groups according to common observable characteristics & based on similarities & differences, inc micro-organisms, plants & animals Give reasons for classifying plants & animals based on specific characteristics 	<p><i>Animals, inc humans</i></p> <ul style="list-style-type: none"> Identify & name main parts of human circulatory system & describe functions of the heart, blood vessels & blood Recognise impact of diet, exercise, drugs & lifestyle on way their bodies function Describe ways in which nutrients & water are transported within animals, inc humans 	<p><i>Electricity</i></p> <ul style="list-style-type: none"> Associate brightness of lamp or volume of buzzer with number & voltage of cells used in circuit. Compare & give reasons for variations in how components function, inc brightness of bulbs, loudness of buzzers & on/off position of switches Use recognised symbols when representing simple circuit in diagram 		<p><i>Evolution & inheritance</i></p> <ul style="list-style-type: none"> Recognise living things have changed over time & that fossils provide information about living things that inhabited Earth millions of years ago Identify how animals & plants are adapted to suit their environment in different ways & that adaptation may lead to evolution Recognise living things produce offspring of same kind, but normally offspring vary & are not identical to parents 	<p><i>Light</i></p> <ul style="list-style-type: none"> Recognise light appears to travel in straight lines Use idea light travels in straight lines to explain objects are seen because they give out or reflect light into eye Explain we see things because light travels from light sources to our eyes or from light sources to objects & then to our eyes Use idea light travels in straight lines to explain why shadows have same shape as objects that cast them
Objectives	<p><u>Biology – Living things and their habitats</u></p> <ol style="list-style-type: none"> What are the characteristics of living things? How do we classify plants? How do we classify animals? Who was Carl Linnaeus? How do we classify micro-organisms? Let's Investigate: What bacteria is in my classroom? Who was Alexander Fleming? 	<p><u>Biology - Animals including humans</u></p> <ol style="list-style-type: none"> What is the human circulatory system? How do the different parts of the circulatory system work? How are water and nutrients transported within animals and humans? Let's Investigate: How does exercise affect our heart rate? How important is a healthy lifestyle (including drugs and alcohol)? Who was Marie Maynard Daly? 	<p><u>Physics – Electricity</u></p> <ol style="list-style-type: none"> How do you make a simple circuit? (Prior learning) How do I draw a scientific diagram of a circuit? What is the effect of different volts in a circuit? What are the major discoveries in electricity? Let's Investigate – Investigate variations in how components function. Who was Alessandro Volta? 		<p><u>Biology – Evolution and inheritance</u></p> <ol style="list-style-type: none"> How are plants adapted to their environment? How are animals adapted to their environments? What is natural selection and how does this lead to evolution? How do adaptations lead to evolution? What characteristics can you inherit? How can fossils help us to explain Who was Charles Darwin? 	<p><u>Physics – Light</u></p> <ol style="list-style-type: none"> How does light travel? Let's Investigate – Which materials make the best reflectors? How do we see? How do shadows change during the day? Why do objects look different in water? How do mirrors work? Let's Investigate – Can I make a rainbow? Who was Isaac Newton?

Vocabulary	Classification, vertebrates, invertebrates, micro-organisms.	Circulatory, heart, blood vessels, veins, arteries, oxygenated, deoxygenated, valve, exercise, respiration, pulse.	Voltage, cells, series circuit, conductors, insulators.		Fossils, inhabited, adaptation, evolution, genetics.	Reflect, sources, shadows.
Investigation	<i>What bacteria is in my classroom?</i>	<i>How does my heart work?</i>	Investigate variations in how components function.		<i>What is the DNA of a strawberry?</i>	<i>Can I make a rainbow?</i>
	Tables and line graphs.		Pie charts & the mean			
Scientist	<p>Alexander Fleming Discovered the world's first antibiotic – Penicillin.</p> 	<p>Marie Maynard Daly Studied how sugar and cholesterol affect the heart and circulatory system.</p> 	<p>Alessandro Volta Inventor of the electric battery.</p> 		<p>Charles Darwin Pioneered the theory of evolution.</p> 	<p>Isaac Newton</p>