St Andrew's C of E Primary School

Curriculum Map for Science

Biology		Chemistry		Physics	
Q. Asking Questions	**I.** Investigate & Research	**P.** Predict	**O.** Observe & Measure (inc. planning & resources)	**R.** Recording (inc. graphs)	**C.** Conclusion (inc patterns & analysis)

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Children know about **similarities and differences** in relation to places, **objects, materials and living things**. They talk about the **features of their own immediate environment and how environments might vary from one another**. They **make observations of animals and plants and explain why some things occur, and talk about changes.**					
EYFS – Nursery	**Why do you love me so much?** -Can the children talk about what they see in the mirror? -Do they look closely at similarities and differences between themselves and others?	Why is Water Wet? - Do the children notice what is happening to the ice over time? - Can they explain what is happening? - Can the children use the tools provided to make bubbles? - Do they notice the different sizes and features of the bubbles?	How do Buildings Stay Up?	**How are Shadows Made?** - Do the children show an interest in playing with the objects? - Can they describe what they see? - Do the children notice shadows made by the objects? - Do they notice how the shadows change shape and position during the day?	**Why can't I have Chocolate for Breakfast?** -Do the children notice the different smells? -Can they talk about the similarities and differences between the smells?	**How High Can I Jump?** -Can the children talk about what happens when the balls are put in the water? -Do they notice similarities and differences between the balls?

EYFS - Reception	Children know about **similarities and differences** in relation to places, **objects, materials and living things**. They talk about the **features of their own immediate environment and how environments might vary from one another**. They **make observations of animals and plants and explain why some things occur, and talk about changes.**					
	Do you want to be friends? -Do the children know what the objects are? -Can the children say how the objects are the same or different? -Can the children explain how to use the objects?	**Will you read me a story?**	**What happens when I fall to sleep?** -Do the children know the names of the animals? -Can the children explain what 'nocturnal' means? -Can the children describe similarities and differences between the animals? -Can the children describe what happens when they look through the telescope or binoculars? -Can they use a turn wheel or similar to focus? -Do the children show an interest in using the toys?	**Who lives in a rock pool?** -Can the children name the objects? -Do the children sort things in different ways according to appropriate criteria? -Do the children explore the objects using their senses of touch and smell? -What are the children's reactions to the seafood? -Do they notice any similarities or differences? -Can the children name common features, such as eyes, mouth, shell, fins, scales and tail? -Do the children use their senses to explore the seaweed? -Can they describe what they can see, touch and smell? Can the children describe how the samples of seaweed are the same or different?	**Why do ladybirds have spots?** -Are the children interested in the snails? -Do they ask questions about them? -Can they name the snail's body parts such as shell and tentacles? -Do the children show an interest in the worms' behaviour? -Do they handle the worms with care? -Can the children name different parts of the flowers? -Can they describe similarities or differences between the flowers? -Do the children experiment with the effects of magnification? -Are the children curious about what might happen? -Are they interested in the video footage? -Do the children comment on changes they see happening over time?	**Are We There Yet?** -Do the children show an interest in a particular type of vehicle? -Are they interested in how it works? -Can they say how the vehicles are the same or different?

KS1 – Year 1	**Materials** **"Marvellous Materials"** -Distinguish between an object and the material from which it is made -Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock -Describe the simple physical properties of a variety of everyday materials -Compare and group together a variety of everyday materials on the basis of their simple physical properties. **Focus Investigation** Fair Testing **Working Scientifically** **I** Fair Testing **P** Predicting **O**. Identify, Classify & Group **C**. Pattern Seeking, ,Compare, Use Scientific Vocab **Seasonal Change** **"Sensing Seasons 1"** -Observe changes across the four seasons -Observe and describe weather associated with	**Seasonal Change** **"Sensing Seasons 2"** -Observe changes across the four seasons -Observe and describe weather associated with the seasons and how day length varies. **Focus Investigation** Observing over time **Working Scientifically** **I**. Observing over time **O**. Observe, Identify, Classify & Group **C**. Compare, Explain, Use Scientific Vocab	**Animals including Humans** **"My Family & Other Animals"** --Identify and name a variety of common animals including fish, amphibians, reptiles, birds and animals. -Identify and name a variety of common animals that are carnivores, herbivores and omnivores. -Describe and compare the structure of a variety of common animals. -Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. **Focus Investigation** Surveys…Pattern Seeking **Working Scientifically** **I**, Pattern Seeking, Grouping & Classifying, Research **O** Observe, Identify, Classify & Group **R** Use charts & Tables **C** Describe, Compare, Explain, Use Scientific Vocab	**Plants** **"Plant Detectives"** -Identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen -Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers. **Focus Investigation** Classifying & Grouping **Working Scientifically** **I**, Grouping & Classifying, Research **O** Use simple equipment, Identify, Classify & Group **R** Gather & Record Data **C** Use Scientific Vocab **Seasonal Change** **"Sensing Seasons 3"** -Observe changes across the four seasons -Observe and describe weather associated with the seasons and how day length varies. **Focus Investigation** Observing over time **Working Scientifically** **I**. Observing over time **O**. Observe, Identify, Classify & Group	**Seasonal Change** **"Sensing Seasons 4"** -Observe changes across the four seasons -Observe and describe weather associated with the seasons and how day length varies. **Focus Investigation** Observing over time **Working Scientifically** **I**. Observing over time **O**. Observe, Identify, Classify & Group **C**. Compare, Explain, Use Scientific Vocab

	the seasons and how day length varies. **Focus Investigation** Observing over time **Working Scientifically** **I.** Observing over time **O.** Observe, Identify, Classify & Group **C.** Compare, Explain, Use Scientific Vocab			**C.** Compare, Explain, Use Scientific Vocab	
KS1 – Year 2	**Living Things & Their Habitats** **"Mini Worlds"** -Explore and compare the differences between things that are living, dead and things that have never been alive. -Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. -Identify and name a variety of plants and animals in their habitats, including micro-habitats. -Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. **Focus Investigation**	**Animals Inc Humans** **"Healthy Me"** -Notice that animals, including humans, have offspring which grow into adults -Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) -Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. **Focus Investigation** Survey -Pattern Seeking, **Working Scientifically** **I.** Pattern Seeking, Collecting Data, Research **O.** Identify, Classify & Group **R.** Presenting Data **C.** Analysis, Use Scientific Vocab	**Use of Everyday Materials** **"Materials Monster"** -Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. -Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. **Focus Investigation** Fair Testing **Working Scientifically** **I.** Comparative Fair Test **P.** Simple predisctions **O.** Identify, Classify & Group **R.** Presenting Data **C.** Analysis, Use Scientific Vocab	**Plants** "The Apprentice Gardener" -Observe and describe how seeds and bulbs grow into mature plants. -Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. **Focus Investigation** Fair Testing, Observation over time **Working Scientifically** **I.** Fair Testing, Observation over time, Collecting Data **O.** Accurate Observations over time **R.** Presenting Data **C**, Analysis, Use Scientific Vocab

	Pattern Seeking, Classifying & Grouping **Working Scientifically** **I.** Pattern Seeking, Classifying & Grouping, Collecting Data, Research **O.** Identify, Classify & Group **R.** Presenting Data **C.** Pattern Seeking, Analysis, Use Scientific Vocab				
KS2 – Year 3	**Light** **"Mirror Mirror"** -Recognise that they need light in order to see things and that dark is the absence of light. -Notice that light is reflected from surfaces. -Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. -Recognise that shadows are formed when the light from a light source is blocked by an opaque object. -Find patterns in the way that the size of shadows change. **Focus Investigation** Pattern Seeking **Working Scientifically** **I.** Pattern Seeking, Collecting Data, Research **O.** Identify, Classify & Group **R.** Present data	**Rocks** **"Earth Rocks"** -Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. -Describe in simple terms how fossils are formed when things that have lived are trapped within rock. -Recognise that soils are made from rocks and organic matter. **Focus Investigation** Classifying & Grouping **Working Scientifically** **Q.** Suggest how to investigate an idea **I.** Classifying & Grouping, Pattern Seeking **O.** Make & record observations using appropriate equipment, Identify, Classify & Group **R.** Present data **C.** Compare, Use Scientific Vocab	**Animals Inc Humans** **"Amazing Bodies"** -Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat…balanced diet -Identify that humans and some animals have skeletons and muscles for support, protection and movement. **Focus Investigation** Pattern Seeking **Working Scientifically** **I.** Pattern Seeking, Research, Collecting data **R.** Labelled diagrams, charts & tables **C.** Compare, Conclude, Use Scientific Vocab	**Forces & Magnets** **"Opposites Attract"** -Notice that some forces need contact between two objects, but magnetic forces can act at a distance. -Observe how magnets attract or repel each other and attract some materials and not others. -Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. -Describe magnets as having two poles. -Predict whether two magnets will attract or repel each other, depending on which poles are facing. **Focus Investigation** Fair Testing **Working Scientifically** **Q.** Suggest ideas for testing **I.** Fair Testing	**Plants** **"How does your Garden grow"** -Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. -Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. -Investigate the way in which water is transported within plants. -Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. **Focus Investigation** Observation over Time **Working Scientifically** **Q.** Suggest how to investigate an idea **I.** Observation over Time, Collecting Data, Research **O.** Observing over time with explanations **C.** Use Scientific Vocab

	C. Analysis of data for patterns, Use Scientific Vocab			**P.** Writing predictions **O.** Identify, Classify & Group, Observe **R.** Presenting Data in a table **C.** Compare, Conclude, Use Scientific Vocab	
KS2 – Year 4	**Electricity** **"Power it Up"** -Identify common appliances that run on electricity. -Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. -Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. -Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. -Recognise some common conductors and insulators, and associate metals with being good conductors. **Focus Investigation** Pattern Seeking, **Working Scientifically** **I.** Pattern Seeking, Research, Collecting Data **P.** Making predictions **O.** Patterns from Observation,	**States of Matter** **"In a State"** -Compare and group materials together, according to whether they are solids, liquids or gases -Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) -Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. **Focus Investigation** Pattern Seeking, Classifying & Grouping **Working Scientifically** **Q.** Questions to be fair tested **I.** Pattern Seeking, Classifying & Grouping Fair Testing, Research, Collecting Data **O.** Observe, Measure, Choose Equipment	**Sound** **"Good Vibrations"** -Identify how sounds are made, associating some of them with something vibrating -Recognise that vibrations from sounds travel through a medium to the ear -Find patterns between the pitch of a sound and features of the object that produced it -Find patterns between the volume of a sound and the strength of the vibrations that produced it -Recognise that sounds get fainter as the distance from the sound source increases. **Focus Investigation** Observation over Time, Fair Testing **Working Scientifically** **I.** Observation over Time, Fair Testing, Research **O.** Observations over time **R.** Present data **C.** Analysis, Conclude, Use Scientific Vocab	**Animals Inc Humans** **"Gnashers and Nosh"** -To describe the simple functions of the basic parts of the digestive system in humans. -To identify the different types of teeth in humans and their simple functions. -To construct and interpret a variety of food chains, identifying producers, predators and prey. **Focus Investigation** Observation over Time, Fair Testing **Working Scientifically** **I.** Observation over Time, Fair Testing, Research **O.** Observations over time **R.** Present data **C.** Analysis, Conclude, Use Scientific Vocab	**Living Things & Their Habitats** "Human Impact" -Recognise that living things can be grouped in a variety of ways. -Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. -Recognise that environments can change and that this can sometimes pose dangers to living things. **Focus Investigation** Grouping & Classifying, Survey **Working Scientifically** **I.** Grouping & Classifying, Pattern Seeking – Survey, Research, Collecting Data **P.** Writing predictions **O.** Observations over time **R.** Present data **C.** Analysis, Use Scientific Vocab SUMMER TERM VISIT / BEGINNING OF TOPIC: Wildside Centre

	Identify, Classify Group **R.** Present data **C.** Analysis, Conclude, Use Scientific Vocab	**R.** Present data**C.** Analysis, Conclude, Use Scientific Vocab			
KS2 – Year 5	**Earth & Space** **"Out of this World"** -To describe the movement of the Earth and other planets relative to the sun in the solar system. -To describe the movement of the moon relative to the Earth. -To describe the sun, Earth and moon as approximately spherical bodies. -To use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. **Focus Investigation** Pattern Seeking , Observing over Time **Working Scientifically** **I.** Pattern Seeking, Observing over Time Research, Collecting Data **O.** Observations over time **R.** Present data & Information **C.** Pattern Seeking, ,Analysis,	**Properties & Changes of Materials** **"Material World"** -Compare and group together everyday materials on the basis of their properties including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets -Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution -Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating -Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic -Demonstrate that dissolving, mixing and changes of state are reversible changes -Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. **Focus Investigation** Fair Testing, Grouping & Classifying **Working Scientifically** **I.** Fair Testing, Grouping & Classifying Research, Collecting Data **P.** Make predictions for the investigation **O.** Identify, Classify & Group, Measure using appropriate equipment. Make repeated measurements **R.** Present data inc Bar Line Graphs **C.** Analysis, Conclusion, Use Scientific Vocab	**Living Things & Their Habitats** **"Circle of Life"** -Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. -Describe the life process of reproduction in some plants and animals. **Focus Investigation** Pattern Seeking , **Working Scientifically** **I.** Pattern Seeking, Research **R.** Present Information **C.** Compare, Use Scientific Vocabulary	**Forces** **"Let's Get Moving"** -Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. -Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. -Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. **Focus Investigation** Pattern Seeking **Working Scientifically** **I.** Pattern Seeking Research, Collecting Data **C.** Pattern Seeking to Compare, Analysis, Use test results to draw conclusions, Use Scientific Vocab **Animals Inc Humans** **"Growing Pains"** Describe the changes as humans develop to old age. **Focus Investigation** Pattern Seeking , Observing over Time **Working Scientifically** **I** Pattern Seeking, Observing over Time Research, Collecting Data **O.** Observations over time **Covered in RSE**

					R. Present data **C.** Pattern Seeking, Analysis,
KS2 – Year 6	**Living Things & Their Habitats** **"Classifying Critters"** -Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. -Give reasons for classifying plants and animals based on specific characteristics. **Focus Investigation** Grouping & Classifying **Working Scientifically** **I.** Pattern Seeking Research, Collecting Data **O.** Identify, Classify & Group **R.** Present information **C.** Pattern Seeking, Analysis, Use Scientific Vocab	**Electricity** **"Electrifying"** -Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. -Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. -Use recognised symbols when representing a simple circuit in a diagram. **Focus Investigation** Fair Testing **Working Scientifically** **I.** Fair Testing Research, Collecting Data **R.** Present data **C.** Analysis, Use Scientific Vocab	**Animals Including Humans** **"Staying Alive"** -Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood -Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function -Describe the ways in which nutrients and water are transported within animals, including humans. **Focus Investigation** Pattern Seeking **Working Scientifically** **I.** Pattern Seeking Research, Collecting Data **O.** Collecting data from observations **R.** Present data **C.** Pattern Seeking, Analysis, Use Scientific Vocab	**Light** **"Let it Shine"** -Recognise that light appears to travel in straight lines -Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye -Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes -Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. **Focus Investigation** Pattern Seeking **Working Scientifically** **I.** Pattern Seeking Research, Collecting Data **O.** Identify, Classify & Group, Observation over time **R.** Present data **C.** Pattern Seeking, Analysis, Use Scientific Vocab	**Evolution & Inheritance** **"We're Evolving"** -Recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago -Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents -Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. **Focus Investigation** Research **Working Scientifically** **I.** Pattern Seeking Research, Collecting Data **O.** Identify, Classify & Group **R.** Present data **C.** Pattern Seeking, Analysis, Use Scientific Vocab