Newnham St Peters C of E Primary School - Science in the 'Curiosity Curriculum' Map

Reception / Year 1 – Year A						
	Autumn		**Spring**		**Summer**	
Curiosity Questions	I wonder what's inside my skin?	I wonder why the weather changes?	I wonder what animals there are in the world?	I wonder why the world around me changes?	I wonder what it feels like?	I wonder how it grows?
Coverage: Unit and key objectives	-Know the names of some body parts. -Know that we have a skeleton. -Explore personal hygiene, including teeth and toileting. -Explore the five senses. -Understand why we need to exercise. **Animals and humans** - Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	-Name and describe different weathers. -Know that weather can be different in different countries. -Observe changes in the local environment during Autumn. **Seasons** -Observe changes across the four seasons. *(Autumn)* -Observe and describe weather associated with the seasons and how day length varies.	-Make observations of different animals and use specific vocabulary to describe them. -Talk about animal homes. **Animals and humans** - Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. - 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.	-Know that there are four seasons. -Name the seasons and discuss features of each. -Observe changes in the local environment during Spring. **Seasons** -Observe changes across the four seasons. *(Spring)* -Observe and describe weather associated with the seasons and how day length varies.	-Explore and describe some different materials using senses. -Know that some things can change, e.g. water into ice, chocolate can be melted, etc. -Explore a variety of materials/objects that float and sink. **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.	-Know that plants grow from a seed. -Begin to name different parts of a plant. - Understand why they need a healthy, balanced diet (link to where food comes from) **Plants** - Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. - Identify and describe the basic structure of a variety of common flowering plants, including trees.
Core texts	Funny bones From head to toe Crocodiles don't brush their teeth Augustus and his smile Look Out! How We Use Our Five Senses!	One year with Kipper Bramley hedge Percy the park keeper Tree – Britta Teckentrup A Busy Year - Leo Lionni Leaf man	Dear Zoo Kidogo, The Littlest Elephant Remarkable Animals	Ferdie's Springtime Blossom The Rabbit Problem When Will It Be Spring? A Year In The City	Whatever Next Itchy Bear Oscar And The Snail Kipper's Rainy Day	Oliver's Vegetables Jasper's beanstalk Ben Plants A Butterfly Garden Sam plants a sunflower Planting A Rainbow
Wow experiences	Walk in our local area Visit from a nurse / doctor / dentist	Trip to Beechenhurst	Trip to a zoo Visit from a variety of pets / animals	Walk around our local area	STEM ambassadors options	Planting our own seeds
Key scientists	Florence Nightingale	Dr Steve Lyons	Steve Backshall		John MacAdam - roads	Alan Titchmarsh

Reception / Year 1 – Year B

	Autumn		Spring		Summer	
Curiosity Questions	I wonder how I can change materials?	I wonder why that lives there?	I wonder why the weather changes?	I wonder what animals and humans need to survive?	I wonder why the world around me changes?	I wonder what plants need to grow and stay healthy?
Coverage: Unit and key objectives	-Know that some things can change, e.g. water into ice, chocolate can be melted, etc. -Explore a variety of materials/objects that float and sink. -Use knowledge of different materials to design a product. **Materials** -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.	-Make observations of different animals and habitats and use specific vocabulary to describe them. **Living things and their habitats** -Explore and compare the differences between things that are living, dead, & things that have never been alive. -Identify that most living things live in habitats to which they are suited & describe how different habitats provide for the basic needs 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.	-Name and describe different weathers. -Know that weather can be different in different countries. -Observe changes in the local environment during Winter. **Seasonal changes** -Observe changes across the four seasons. *(Winter)* -Observe and describe weather associated with the seasons and how day length varies.	-Know how to keep their bodies healthy, e.g. eating healthy food, exercising, screen-time, etc. -Know how to care for personal hygiene, including oral hygiene and toilet hygiene. -Name some baby animals. **Animals and humans** -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.	-Know that there are four seasons. -Name the seasons and discuss features of each. -Observe changes in the local environment during Summer. **Seasonal changes** -Observe changes across the four seasons. *(Summer)* -Observe and describe weather associated with the seasons and how day length varies.	-Compare seeds and bulbs. -Begin to explore what plants need to grow. -Identify and compare common plants (including those grown from bulbs). **Plants** -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.
Core texts	The Three Little Wolves And The Big Bad Pig The Smartest Giant In Town Who Sank The Boat?	Tiddler Commotion in the ocean Blown away The Gruffalo The Utterly Otterleys	Charlie Crow In The Snow The Story Of Snow Secrets of winter Froggy day	Once there were giants Ugly duckling Monkey Puzzle The very hungry caterpillar Tadpole's promise	Percy the park keeper – The rescue party All through the year Bramley hedge A Year In The City	Fran's Flower Eddie's Garden Jim and the beanstalk The Global Garden
Wow experiences	STEM ambassadors options	Trip to Slimbridge	Walks around the local area	Hatch chicks/ducklings Watch the growth of caterpillars Visit a farm to see lambs	Walks around the local area	Planting our own seeds and bulbs
Key scientists		Steve Irwin	Jim Cantore	Robert Winston		Jane Colden

Year 1 / 2 – Year A						
	Autumn		**Spring**		**Summer**	
Curiosity Questions	I wonder what's inside my skin?	I wonder why the weather changes?	I wonder what animals there are in the world?	I wonder why the world around me changes?	I wonder what it feels like?	I wonder how it grows?
Coverage: Unit and key objectives	**Animals and humans** - Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	**Seasons** -Observe changes across the four seasons. *(Autumn)* -Observe and describe weather associated with the seasons and how day length varies.	**Animals and humans** - Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. - 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.	**Seasons** -Observe changes across the four seasons. *(Spring)* -Observe and describe weather associated with the seasons and how day length varies.	**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.	**Plants** - Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. - Identify and describe the basic structure of a variety of common flowering plants, including trees.
Core texts	Funny bones From head to toe Crocodiles don't brush their teeth Augustus and his smile Look Out! How We Use Our Five Senses!	One year with Kipper Bramley hedge Percy the park keeper Tree – Britta Teckentrup A Busy Year - Leo Lionni Leaf man	Dear Zoo Kidogo, The Littlest Elephant Remarkable Animals	Ferdie's Springtime Blossom The Rabbit Problem When Will It Be Spring? A Year In The City My boots in season	Whatever Next Itchy Bear Oscar And The Snail Kipper's Rainy Day	Jasper's beanstalk Ben Plants A Butterfly Garden Sam plants a sunflower A little guide to wild flowers Mama Miti
Wow experiences	Walk around our local area Visit from a nurse / doctor / dentist	Walk around our local area Trip to Beechenhurst	Trip to a zoo Visit from a variety of pets / animals	Walk around our local area	STEM ambassadors options	Planting our own seeds
Key scientists		Holly Green (Meteorologist)	Chris Packham	Inez Fung	Chester Greenwood - Earmuffs	Beatrix Potter

Year 1 / 2 – Year B						
	Autumn		**Spring**		**Summer**	
Curiosity Questions	I wonder how I can change materials?	I wonder why that lives there?	I wonder why the weather changes?	I wonder what animals and humans need to survive?	I wonder why the world around me changes?	I wonder what plants need to grow and stay healthy?
Coverage: Unit and key objectives	**Materials** -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.	**Living things and their habitats** -Explore and compare the differences between things that are living, dead, & things that have never been alive. -Identify that most living things live in habitats to which they are suited & describe how different habitats provide for the basic needs 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.	**Seasonal changes** -Observe changes across the four seasons. *(Winter)* -Observe and describe weather associated with the seasons and how day length varies.	**Animals and humans** -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.	**Seasonal changes** -Observe changes across the four seasons. *(Summer)* -Observe and describe weather associated with the seasons and how day length varies.	**Plants** -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.
Core texts	The Three Little Wolves And The Big Bad Pig The Smartest Giant In Town Who Sank The Boat?	Meerkat Mail Yucky Worms Blown away The Gruffalo The Utterly Otterleys	One snowy night Charlie Crow In The Snow The Story Of Snow My boots in season	Once there were giants Ugly duckling Monkey Puzzle The very hungry caterpillar Tadpole's promise	Percy the park keeper – The rescue party All through the year Bramley hedge A Year In The City	Fran's Flower Eddie's Garden Jim and the beanstalk The Global Garden
Wow experiences	STEM ambassadors options	Trip to Slimbridge	Walks around the local area	Watch the growth of caterpillars Visit a farm to see lambs	Walks around the local area	Planting our own seeds and bulbs
Key scientists	Charles Macintosh	David Attenborough	Liam Dutton	Elizabeth Garrett Anderson		Agnes Arber

Year 2 / 3 – Year C						
	Autumn		**Spring**		**Summer**	
Curiosity Questions	How can I change materials?	I wonder why that lives there?	What is electricity and how does it work?	Where do light and dark come from?	I wonder what animals and humans need to survive?	Why do some metal objects stick together?
Coverage: Unit and key objectives	**Materials / States of matter (Y2 &3)** -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. -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 temp at which this happens in degrees Celsius (°C). -Identify the part played by evaporation and condensation in the water cycle & associate the rate of evaporation with temp.	**Living things and their habitats (Y2 & 3) – Marine focus** -Identify that most living things live in habitats to which they are suited & describe how different habitats provide for the basic needs of animals and plants and how they depend on each other - recognise that environments can change and that this can sometimes pose dangers to living things. -Identify and name a variety of plants and animals in their habitats and group them in different ways. -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. -Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.	**Electricity (Y3)** -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. -Recognise that a switch opens and closes a circuit. -Recognise some common conductors and insulators, and associate metals with being good conductors.	**Light (Y3)** -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. **Create shadow puppets with coloured, translucent inserts.** -Find patterns in the way that the size of shadows change.	**Animals, including humans (Y2) – British animal focus** -Explore and compare the differences between things that are living, dead, & things that have never been alive. *(Living things and habitats)* -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.	**Forces and magnets (Y3)** -Compare how things move on different surfaces. -Notice that some forces need contact between two objects, but magnetic forces can act at a distance. -Observe how magnets attract or repel each other and attract some materials and not others. -Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials -Describe magnets as having two poles. -Predict whether two magnets will attract or repel each other, depending on which poles are facing.
Core texts	Traction Man George's Marvellous medicine	Dear Greenpeace Yum yum Shipwreck reefs Interview with a shark	Electrical wizard – Elizabeth Rusch	Jack And His Amazing Shadows	Emperor's egg The Very Ugly Bug The Growing Story	Magnet Max Iron man
Wow experiences	STEM ambassadors options	Trip to Slimbridge			Hatching tadpoles	
Key scientists	Anders Celsius Daniel Fahrenheit	Rachel Carson Jacques Cousteau	Nikola Tesla	Thomas Young	Sir David Attenborough Yann Le Meur (sports science)	Andre Marie Ampere (Electro-magnetism)

Year 3 / 4 – Year A					
	Autumn		**Spring**		**Summer**
Curiosity Questions	What are rocks and soil?	What are our bodies made of and how can we keep them healthy?	What's that sound?	Why do I have so many teeth? What happens to food when I eat it?	How do plants grow?
Coverage: Unit and key objectives	**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.	**Animals, including humans (Y3)** -Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. -Identify different food groups and explore how they support healthy body function. -Explore the diets of different animals and group them accordingly. -Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	**Sound** -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.	**Animals, including humans (Y4)** -Describe the simple functions of the basic parts of the digestive system in humans. -Identify the different types of teeth in humans and their simple functions. -Construct and interpret a variety of food chains, identifying producers, predators and prey.	**Plants** ***If following a Y2/3 Year C, also include observe and describe how seeds and bulbs grow into mature plants.*** -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.
Core texts	A Pebble In My Pocket A Rock is Lively The Street Beneath My Feet	Professor Astro Cat's Human Body Odyssey The Explorer	The speed of starlight Oscar and the Bat The Sound Collector (Poetry)	A Journey Through the Digestive System Demon dentist The little mole who knew it was none of his business	The Tiny Seed Flight of the honey bee Christopher Nibble
Wow experiences				Visit from a dentist Modelling digestive system	
Key scientists	Mary Anning - Fossil hunter Dr Anjana Khatwa - Geologist	Adelle Davis -Nutritionist Willhelm Röntgen	Alexander Graham Bell	Ivan Pavlov	Joseph Banks - Botanist Ahmed Mumin Warfa - Botanist

Year 3 / 4 – Year B					
	Autumn		**Spring**		**Summer**
Curiosity Questions	Why are solids, liquids and gases different?	I wonder why that lives there?	What is electricity and how does it work?	Where do light and dark come from?	Why do some metal objects stick together?
Coverage: Unit and key objectives	**States of matter** -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 temp 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.	**Living things and their habitats - Terrestrial animal focus** -Recognise that environments can change and that this can sometimes pose dangers to living things. E.g. deforestation, garden ponds, nature reserves. -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. .	**Electricity** -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. -Recognise that a switch opens and closes a circuit. -Recognise some common conductors and insulators, and associate metals with being good conductors.	**Light** -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. **Create a reflection maze.** -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.	**Forces and magnets** -Compare how things move on different surfaces. -Notice that some forces need contact between two objects, but magnetic forces can act at a distance. -Observe how magnets attract or repel each other and attract some materials and not others. -Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. -Describe magnets as having two poles. -Predict whether two magnets will attract or repel each other, depending on which poles are facing.
Core texts	Charlie and the chocolate factory	Wangari's Trees of Peace: A True Story from Africa Tidy	Until I met Dudley	Nature's Light Spectacular	Magnets push, magnets pull Iron man
Wow experiences		Trip to Slimbridge			
Key scientists	Joseph Priestly (focus on oxygen and the water cycle)	Liz Bonnin Cindy Looy - Environmental Change and Extinction	Joseph Swan Thomas Edison	Justus Von Liebig - Mirrors	Hans Christian Oersted

Year 5 / 6 – Year A					
	Autumn		**Spring**		**Summer**
Curiosity Questions	How do humans change as they develop to old age?	How can we demonstrate and make use of the effects of changing components in electrical circuits?	How does the idea that light travels in straight lines help us to explain our observations?	How do the life cycles (including reproduction) of mammals, amphibians, birds and insects differ?	How can we identify and demonstrate the idea that adaptation may lead to evolution?
Coverage: Unit and key objectives	**Animals, including humans (Y5)** -Describe the changes as humans develop to old age.	**Electricity** -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.	**Light** -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.	**Living things & their habitats (Y5)** -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.	**Evolution and Inheritance** -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.
Core texts	Hair In Funny Places	Charging About: The Story of Electricity	The Viewer	Amazing Animal Journeys	Wonder One Smart Fish What Darwin Saw
Wow experiences	Visit from a mother and baby / midwife	Creating purposeful product using subject knowledge	Trip to 'We the curious'	Exploring life cycle of a stick insect	
Key scientists	Alexander Fleming Louis Pasteur Eva Crane	Alessandro Volta Edith Clarke	Ibn al-Haytham Percy Shaw	Jane Goodall Dr. Paula Kahumbu Mangala Mani	Charles Darwin Rosalind Franklin Professor Alice Roberts

Year 5 / 6 – Year B					
	Autumn		**Spring**		**Summer**
Curiosity Questions	How can we change materials and are all changes the same?	Why is our heart so important and how can we keep it healthy?	How have ideas about our solar system changed and are they still changing?	How do machines make life easier for us?	How and why do we classify all living things?
Coverage: Unit and key objectives	**Properties and changes of materials** -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.	**Animals, including humans (Y6)** -Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. -Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. -Describe the ways in which nutrients and water are transported within animals, including humans.	**Earth and Space** -Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. -Describe the movement of the Moon relative to the Earth. -Describe the Sun, Earth and Moon as approximately spherical bodies. -Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	**Forces** -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.	**Living things and their habitats (Y6)** -Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. -Give reasons for classifying plants and animals based on specific characteristics.
Core texts	Itch	Illumanatomy Pig Heart Boy	Ask An Astronaut - Tim Peake The Story Of Space A Galaxy Of Her Own: Amazing stories of women in space Curiosity: The Story of a Mars Rover	Skychasers	Beetle Boy
Wow experiences		Heart dissection Visit from a nutritionist / sports coach	Planetarium visit		
Key scientists	Sir Humphrey Davy Jamie Garcia Becky Schroeder Ruth Benerito	Leonardo Da Vinci Dr. Katherine Dibb Justus von Liebig Sir Richard Doll	Stephen Hawking Ptolemy / Copernicus Neil Armstrong Helen Sharman	Isaac Newton Albert Einstein Galileo Galilei Archimedes of Syracuse	Carl Linneus Libby Hyman