BIS Science Curriculum

Year 1						
Term & Topic	**Learning questions**	**Vocabulary**	**Knowledge**	**Skills**	**Enrichment**	**Global Citizen Links**
Brain Waves Aut 1	**How does science help us to create pathways that help us to remember things?** **How can I use science to make it easier to remember things?** **How do we make new pathways in our brains?** **Where are the different parts of my body?** **What are the different parts of body called?** **What do the different parts of my body look like?** **What does my body help me to do?** **What are the five senses? DO QUIZ**	**Body** **Parts** **Human** **Head** **Neck** **Arms** **Elbows** **Legs** **Knees** **Face** **Ears** **Eyes** **Hair** **Mouth** **Teeth** **Brain** **Remember** **Knowledge** **Skills**	**To know the names of the different body parts.** **To know the location of the different parts of their body.** **To know what the different parts of their body look like.** **To know that their body helps them to do different things.** **To know the names of the five senses.** **To know that our eyes help us to see, our hears help us to hear, our nose helps us to smell, our tongue helps us to taste and our hands help us to feel.**	**To be able to name their different body parts.** **To be able to locate the different parts of their body.** **To be able to explain what the different parts of their body look like.** **To be able to identify and explain what their body allows them to do.** **To be able to name the five senses and identify the body part that is linked to each sense.** **To be able to explain what the five senses are.** **To be able to explain that we can use pictures, actions and songs to help us to remember new knowledge.**	**Self-portrait- link to Art** **Little City in**	

	How is my body going to help me to learn?		**To know our brain helps us to remember new knowledge.** **To know that our brain helps us to learn and remember new skills.**			
Treasure Island Aut 2	How did sailors and pirates find their way around the oceans? MOVE TO HISTORY How do we know the earth is round? What is the weather like in Autumn? (Beginning of the half term) Will my boat float or sink?	**Seasons** **Weather** **Changes** **Patterns** **Autumn** **deciduous trees** **float** **sink** **boat** test	To know that there are four seasons. To know that September, October and November are Autumn months. To know that in Autumn the leaves fall off deciduous trees. To know that the weather gets colder and it rains more in the Autumn.	To be able to perform a simple test. To be able to identify seasons weather patterns in the Autumn.	**Art- seasons tree** **Docklands Museum**	
A Day in the Life Spr 1	What is the weather like in Winter? How are Autumn and Winter different?	Seasons Weather Changes Patterns Winter Deciduous trees Evergreen trees temperature	To know that there are four seasons. To know that December, January and February are Winter months. To know that the weather gets even	To be able to identify seasons weather patterns in the Winter. To identify differences between Autumn and Winter.	**Art- seasons tree**	

			colder in Winter. It may snow. It may be icy and frosty. There are little to no leaves left on deciduous trees. To know that evergreen leaves keep their leaves in Winter.			
Time Travellers Spr 2	What are the names of different materials? Which material is an object made from? How have you sorted objects made from the same materials? What are the properties different materials? What similarities and differences do these materials have? Why are windows made out of glass? What is your prediction of how a material will change after it is buried?	**Materials** **Wood** **Brick** **Rock** **Metal** **Glass** **Plastic** **Rubber** **Fabric** **object**	To know the names of a variety of everyday materials. To know than an object has a name. To know that an object is made from a particular material. To know the names for different properties of materials. To understand that materials have different properties and can be used for different things.	To be able to distinguish between the object and the material that it is made from. To be able to describe the properties of different materials. To be able to group materials based on their properties. To ask questions and think of ways to answer them To make careful observations. To record findings and draw conclusions.	**GFOL investigation.** **Monument & St Paul's Cathedral**	

	What do we use in our daily lives that is made out of plastic? What is the weather like in Spring? How are Spring and Winter different?		To understand that materials can be grouped in different ways. **To know that March, April and May are Spring months.** To know that the weather gets warmer in Spring and new plants start to grow.	To be able to identify seasons weather patterns in Spring. To identify differences between Winter and Spring.		
Green Fingers Sum 1	What are the names of common wild plants? What are the names of common garden plants? What is the difference between deciduous and evergreen trees? What is similar and different about these plants? How have our plants changed over time? What are the different parts of a plant called?	Wild plants Garden plants Deciduous Evergreen Plant Roots Stem Leaves Flower Petals Fruit Roots Bulb Seed Trunk branches	To know the names of common wild plants. To know the names of common garden plants. To know that deciduous trees lose their leaves in the autumn but evergreen trees don't. To know that plants have similarities and differences. To know the names of different parts of flowers and trees.	To be able to name and describe different parts of a plant. To make careful observations. To record findings and explain these clearly.	Grow a plant. Pioneer- Float a boat	

	What are the different parts of a tree called? What senses can we use to make scientific observations? Which senses are most useful for identifying differences between plants? What are the names of the different parts of a plant? What do you know about the life cycle of a sunflower? Plants and flowers are interdependent. What does this mean? What would the Earth be like if all the bees disappeared? In what ways can seeds be dispersed? Do all seeds need the same conditions to grow? What is a fair test in science? What are the most important conditions plants need to grow? Do all plants follow the same life cycle?					

	How can we identify if something is alive, dead or was never alive?					
The Earth: Our Home Sum 2	What are different animals called? How can we group different animals? What are carnivores, herbivore and omnivores? How do food chains work? How can a classification key be used to help identify different groups of animals? How are animals suited to their habitats? What are the important features of different habitats? What micro-habitats are there on our schools grounds? What is the weather like in Summer?	Animals Groups Mammals Fish Birds Reptiles Amphibians Carnivores Herbivores Omnivores Food chains Predators Prey Producer Consumer Habitats Micro-habitats Food Shelter Water Woodland Ocean Polar Rainforest	To know that there are different groups of animals. To know the names of the different animal groups. To know that you can group animals in different ways. To know that: -carnivores only eat meat, herbivores only eat plants and omnivores eat meat and plants To know that habitats are where animals live. To know that habitats provide animals with what they need. To know that microhabitats are small areas of a larger habitat.	To be able to group and classify animals based on their features. To be able to group and classify animals in different ways. To be able to compare the structure of different animals. To compare and identifiy similarities and differences between different habitats. To explain what habitats provide animals with; food, water and shelter To be able to construct a basic food chain To be able to use a classification key	Vauxhall city farm	

	How are Summer and Spring different? How are Summer and Autumn different? How can you classify different groups of animals? How many different types of trees are there? How are the habitats in your local area different to ones in another part of the world? In what ways do plants and animals depend on each other? (Task 6) How do food chains work? (Task 7) What is the difference between a biome and a micro-habitat? (Task 8) How would you explain the difference between organic and inorganic materials? (Task 9) What have you learnt about habitats? (Task 10)			To be able to identify seasons weather patterns in the Summer. To identify differences between Spring and Summer. To identify differences between Autumn and Summer.		
Year 2						
From A to B Aut 1+2	Which variables can you change to make the best helicopter?	Variables Helicopter Test Weight	To know that if we ask a question, we can suggest ways to find out the answer	To be able to ask simple question	Investigation STEM ambassadors	

	Which variables can we change when making a helicopter? OR How can we set up a simple test? Which helicopter takes the longest to fall to the ground and why?	Longest Shortest Slowest Fastest Time Speed Observe	To know that a simple test can help us to answer questions To know that changing variables can impact the outcome of simple tests To understand that performing simple tests helps us to gain new knowledge and answer questions	To be able to set up a simple test To be able to perform a simple test To be able to make simple observations To be able to record their observations To be able to use their recorded observations to answer a question		
Buildings Spr 1	How did someone make the strongest bridge with the same materials? How can we make our bridge the strongest it can be? Which 3D shape is the strongest from your investigations? Why? (Double lesson) Which glue do you predict will have the best stickability? How were your predictions and results the same or different?	Materials Strength Strong Weak Observe Structure 3D shape Question Prediction Test Observations Results Same Different Solid Squash Squeeze Stretch Bend	To know that we can ask questions to investigate To know that a simple test can help us to answer questions To know that the structure of a building or bridge can have an impact on how strong it is To understand that some materials are stronger than others and as a result are suited better for different purposes To understand how to test various properties of materials	To be able to describe properties of materials To be able to compare the properties of materials To be able to identify suitable uses for different everyday materials based on their properties To be able to classify materials based on their properties To understand that some materials are stronger than others and as a result are suited better for different purposes	Local walk DT – build a bridge- straws, paper, tape. CC with Maths DT Pioneer passport- build a den using their knowledge of structures and materials. Test sturdiness, if it's waterproof etc. Review design. Science/ DT cross curricular.	

	How can we change the shape of a solid object? What materials is our school made from? Why? What materials are houses in Belvedere from? Why? What new material has been developed in recent years? Move to Summer 1 Using what I know, how can I make the strongest, sturdiest den? What changes could I make to my den to make it stronger and sturdier and why?	Wood Concrete Steel Brick Paper Cardboard Design Evaluate	To understand how to conduct a simple test To understand that a prediction is an educated guess using what we already know To know what materials building are made from and why	To be able to ask a simple question To be able to perform a simple test To be able to make a prediction about the outcome of a test To be able to record simple observations To be able to use recorded results to explain the outcome of an investigation To be able to use their test outcome to inform their designs		
Live and let live Spr 2	**Animals** What are the differences between a toy dog and a real dog? How is a toy dog similar to a real (living) dog? What are the seven characteristics of living things? Do all pets have the same needs?	Characteristics Needs Living things Living Dead Never-alive Lifecycle Environment Plant Seed Bulb Water Sunlight	To understand that some things are alive and others are not To understand that all animals (pets) have basic needs in order to survive To know the differences between living and non-living things To know the differences between animals and	To be able to identify the seven characteristics of life To be able to classify things into living and non-living e.g. animals, plants, chairs To be able to explain what all living things need in order to survive To be able to describe the lifecycle of a frog	Gardening (in and out of school), planting DT – build a bird feeder (school environment) Tadpoles Plant growth experiment- sunflower and a bulb- Observe the	

	What do all pets need to survive? What is the lifecycle of one animal? What is the lifecycle of a frog? How do I know if something is dead or has never been alive? What changes can we make to our school environment to make it more attractive to living things? **Plants** How do we know that plants are living things? Why do plants make seeds? (Germination) What are the most important conditions plants need to grow and stay healthy? TAKEN FROM Y1 What is the lifecycle of a sunflower? TAKEN FROM Y1 BUT Y2 NC	Suitable Temperature Grow Attractive Observe Record Compare Similarities Differences	plants that are dead and have never been alive To know the seven signs (characteristics) of life To understand that every living thing has a lifecycle To know that plants make seeds to continue the lifecycle To know that germination is when a plant grows from a seed into a seedling To know that plants needs sunlight, water and a suitable temperature to grow and stay healthy To know that all plants have a lifecycle though these may not look exactly the same To know that all plants reproduce	To be able to label parts of a seed and seedling and explain their function To be able to describe the lifecycle of a plant To be able to suggest changes to make the environment more animal and plant friendly (environmental awareness)	changes over time and the similarities and differences	

	Do all plants follow the same life cycle? TAKEN FROM Y1 BUT Y2 NC What changes can we make to our school environment to make it more attractive to plants? What differences did your changes to the school environment make?					
The Magic Toymaker Sum 1	What different materials can you identify? What are the important features of different materials? What forces are needed to control different toys? How do different toys move? What different materials can you identify and what are their properties? Overarching question- Which surface will help our car to travel the fastest? What simple scientific test have you designed?	Move Push Pull Observe compare Materials Identify Recognise Glass Wood Metal Fabric Plastic Plasticine Properties Features Scientific tests Forces Design Control Variables	To understand that toys can move in different ways. To understand how to test various properties of materials To understand how to conduct a fair scientific test To understand how to design and make a car that can travel (DT)	To be able to make and record simple observations. To able to recognise how push and pull forces can control toys To able to sort and classify toys based on how they move. To be able to recognise a range of materials To be able to design and perform a simple scientific test To be able to recognise key features of different materials	Chn to bring in different moving toys to observe and compare Science/DT- build a toy car using wheels and axels. Test which surface will make the car move fastest- linking to properties of materials.	

	What do you need to stay the same to perform a fair scientific test? (heights of the ramps-perform the test) What were the key features of materials that caused some cars to travel further than others? What new material has been developed in recent years? (John Macadam-Tarmac) MOVED FROM SPR 1			To be able to use their knowledge of properties of materials to explain why cars travelled further on different surfaces		
Look and Listen Sum 1+2	Can you hear more if you close your eyes? Why? What is a source of light? How are sounds made? If you bang two objects together, do they always make the same sound? Is it possible to hear things making a noise but not be able to see them? Does the shape of an ear make a difference to how sound is heard?	Source Light Sun Lightbulb Flame Lamp Torch Sound Hear Noise Difference Heard	To understand that there are lots of different sources of light To understand that sounds are made when objects vibrate. To understand that sound travels	To be able to conduct an experiment using the five senses To be able to recognise and explain where light comes To be able to perform a simple test to investigate whether two objects always make the same sound when you bang them together To be able to perform a simple test to investigate whether you can hear things without being able to see them	Links to music Museum (musical instruments) Visitors to the school (choir, African drumming)	

				To be able to explain how sounds are made		