



CURRICULUM MAP (Long term plan)

SUBJECT : _____ Science _____

YEAR GROUP _____ 5 _____

	Cycle 1 Autumn	Cycle 2 Spring	Cycle 3 Summer
Substantive knowledge – Essential knowledge & conceptual understanding of the National Curriculum	Living things and their habitats- life cycles	Forces Earth and Space	Properties and changes of materials Animals including humans- birth-old age
Disciplinary knowledge - what skills are practised?	<ul style="list-style-type: none"> •Communicates findings in written form, displays and uses other forms of presentation. •Uses scientific language to communicate increasingly detailed analysis with some support •Can compare relationships being investigated. • Uses simple models to help describe scientific ideas •Makes generalisations about what that evidence seems to indicate. 	<ul style="list-style-type: none"> •Creates questions for scientific enquiry. •Can plan familiar enquiry types in detail •Selects the most appropriate equipment to use in a range of contexts and enquiries. •Records data and results of increasing complexity using scientific diagrams, classification keys, tables, bar and line graphs and models. •Communicates findings in written form, displays and uses other forms of presentation. •Uses scientific language to communicate increasingly detailed analysis with some support •Can compare relationships being investigated. • Uses simple models to help describe scientific ideas •Makes generalisations about what that evidence seems to indicate. •Uses test results to set up further comparative tests. 	<ul style="list-style-type: none"> •Creates questions for scientific enquiry. •Can plan familiar enquiry types in detail •Selects the most appropriate equipment to use in a range of contexts and enquiries. •Records data and results of increasing complexity using scientific diagrams, classification keys, tables, bar and line graphs and models. •Communicates findings in written form, displays and uses other forms of presentation. •Uses scientific language to communicate increasingly detailed analysis with some support •Can compare relationships being investigated. • Uses simple models to help describe scientific ideas •Makes generalisations about what that evidence seems to indicate. •Uses test results to set up further comparative tests. •Suggests how an enquiry might be improved.

		<ul style="list-style-type: none"> •Suggests how an enquiry might be improved. •Identifies scientific evidence that has been used to support or refute ideas or argument 	<ul style="list-style-type: none"> •Identifies scientific evidence that has been used to support or refute ideas or argument
<p>Key questions (What is the learning about?)</p>	<p>Living things and their habitats</p> <p>Can I explain how you identify something as being alive?</p> <p>Can I carry out an investigation safely?</p> <p>Can I explore the life cycle of mammals?</p> <p>Can I explain the life cycles of birds?</p> <p>Can I discuss the life cycle of an amphibian?</p> <p>Can I describe the life cycle of an insect?</p> <p>Can I compare the life cycles of mammals, birds, amphibians and insects?</p> <p>Can I identify and label the parts of a flower?</p> <p>Can I locate the parts of a flower?</p> <p>Can I explain the life cycle of a plant?</p> <p>Can I explain how asexual plants reproduce?</p> <p>Can I report findings and produce a bar chart based on gestation data?</p>	<p>Forces</p> <p>Can I explore gravity?</p> <p>Can I understand the importance of Sir Isaac Newton?</p> <p>Can I identify forces acting on objects?</p> <p>Can I explore the effect that gravity has on objects?</p> <p>Can I explore air resistance?</p> <p>Can I explore the effects of water resistance?</p> <p>Can I discuss friction?</p> <p>Can I investigate friction?</p> <p>Can I explore simple mechanisms?</p> <p>Can I explore simple gears?</p> <p>Can I create a mechanism?</p> <p>Earth and Space</p> <p>Can I recognise the Earth as a spherical body?</p> <p>Can I describe the movement of the Earth and other planets in the Solar System?</p> <p>Can I research the Solar System?</p> <p>Can I understand the size of the Sun in relation to the planets?</p> <p>Can I explain day and night based on the Earth's rotation?</p> <p>Can I create a line graph of sunshine hours during the year?</p> <p>Can I describe the movement of the Moon in relation to the Earth?</p>	<p>Properties and changes of materials</p> <p>Can I explore materials and identify their properties?</p> <p>Can I explore materials and identify their properties?</p> <p>Can I classify materials based on their properties?</p> <p>Can I investigate absorbency?</p> <p>Can I understand how different materials conduct electricity?</p> <p>Can I discuss and explore thermal conductors and insulators?</p> <p>Can I understand that some materials can dissolve in a liquid?</p> <p>Can I understand that some changes can be reversed?</p> <p>Can I understand that some changes are irreversible?</p> <p>Can I investigate the changes involved in burning?</p> <p>Animals including humans- birth-old age</p> <p>Can I understand that the human life cycle is similar to that of other mammals?</p> <p>Can I describe the stages of human development?</p> <p>Can I learn about foetal development in humans?</p> <p>Can I recognise key milestones in baby and child development?</p> <p>Can I identify physical and mental changes that happen from adulthood to old age?</p>

Assessment	PPC mid topic, based on a scientific skill, marked and then fix it time to improve End of unit assessment Y5 LIVING-THINGS-AND-THEIR-HABITATS-COLOUR.pdf	PPC mid topic, based on a scientific skill, marked and then fix it time to improve End of unit assessment Y5 FORCES-COLOUR.pdf Y5 EARTH-AND-SPACE-COLOUR.pdf	PPC mid topic, based on a scientific skill, marked and then fix it time to improve End of unit assessment Y5 ANIMALS-INCLUDING-HUMANS-COLOUR.pdf Y5 PROPERTIES AND CHANGES OF MATERIALS-COLOUR.pdf
Literacy (L), Numeracy (N), Oracy (O) opportunities	<p>Literacy Children will research Sir David Attenborough and discuss his achievements. They will then use literacy techniques to create a biography of his life.</p> <p>Numeracy use symbols for units, presenting data graphically. Data analysis</p>	<p>Literacy Non Chronological report about the Solar System. The children will research using a variety of sources about the Solar System and create a Non-chronological report using taught literacy skills. They will read a short comprehension on The Planets also. Reading comprehension - Sir Isaac Newton. The children will use retrieval methods to answer questions based on the short extract introducing Sir Isaac Newton and his discoveries.</p> <p>Numeracy use symbols for units, presenting data graphically</p>	<p>Literacy Non-chronological report about old age- The children will be discussing the changes that adults go through as they reach old age. They will discuss any misconceptions and use their knowledge to create a non-chronological report. This will use literacy techniques taught and demonstrate their scientific knowledge.</p> <p>Numeracy use symbols for units, presenting data graphically.</p>
Cross Curricular Opportunities			
SMSC / Character/Careers (C) (personal development)	<p>SMSC -pair & group working, working safely in a science laboratory.</p> <p>Character</p> <p>Integrity : during practical work</p>	<p>SMSC -pair & group working, working safely in a science laboratory.</p> <p>Character</p> <p>Integrity : during practical work</p>	<p>SMSC -pair & group working, working safely in a science laboratory.</p> <p>Character</p> <p>Integrity : during practical work</p> <p>Resilience: using equations & data handling</p>



	<p>Resilience: using equations & data handling</p> <p>Confidence: participation during classroom discussions</p>	<p>Resilience: using equations & data handling</p> <p>Confidence: participation during classroom discussions</p>	<p>Confidence: participation during classroom discussions</p>
Super Curriculum	Butterflies are grown in school and the children get to see a life cycle in action. Opportunities to explore outdoor areas.	Geobus workshop on the solar System Planetarium Visit Moon diary exercise	Investigations linked to real life school scenarios. Paper towel investigation. Children invited to bring photos of them as babies and discuss how they have grown and changed.
Careers	<p>HT 1 Animal-scientist-Hella-Peter.pdf</p> <p>HT 2 Botanist-Emma-Williams.pdf</p>	<p>HT1 Prof-Astrophysics-Haley-Gomez.pdf</p> <p>HT2 Astronomer-Kerem-Osman-Cubuk.pdf</p>	<p>HT1 Senior-Lecturer-in-Materials-Modelling-Dr-Parvez-Alam (1).pdf</p> <p>HT2 Microbiologist Science Communicator - Nazifa Tabassum - v2.pdf</p>
<p>Equality and Diversity</p> <p>Gender</p> <p>Disability</p> <p>Religion</p> <p>Race</p> <p>Sexuality</p>	<p>Diverse representation within text/ videos/website links shared.</p> <p>Display shows a variety scientists of different genders and from different ethnicity</p> <p>Botanist-Emma-Williams.pdf</p>	<p>Diverse representation within text/ videos/website links shared.</p> <p>Display shows a variety scientists of different genders and from different ethnicity</p> <p>Astronomer-Kerem-Osman-Cubuk.pdf</p>	<p>Diverse representation within text/ videos/website links shared.</p> <p>Display shows a variety scientists of different genders and from different ethnicity</p> <p>Microbiologist Science Communicator - Nazifa Tabassum - v2.pdf</p>
Local Community Links			Photos of family members and staff
<p>British Values</p> <p>Democracy</p> <p>The rule of Law</p>	<p>Democracy</p> <p>There are opportunities to debate issues where students can share their opinions and listen to the views of others. For example, genetically modified plants, exploring space and ways to support the elderly. Acceptance and engagement with fundamental British values of democracy • Forces and electricity – link to British technology firms and advancement made in knowledge based on British scientists’ discoveries e.g. Faraday. Many investigations require teamwork, resilience and showing respect to others.</p> <p>Contribute positively to life in Modern Britain</p> <ul style="list-style-type: none"> • The science department have celebrated the influence and contribution to science by female scientists which is deployed on our corridors. • Effects of plastic pollution - looking at materials and biodegradable alternatives; and the effects on other organisms e.g. animals. <p>The Rule of Law</p> <p>Laws protect everyone and no-one is above the law. We should understand the need for rules to make a happy, safe and secure environment and know the consequences when rules are not followed.</p> <p>What does this look like in science?</p>		

<p>Individual Liberty</p>	<ul style="list-style-type: none"> • Students follow laboratory rules for the safety of all. • Students learn about the need for speed limits and seat belts. <p>Individual Liberty We have a freedom of choice and a right to respectfully express our views and beliefs. We can act as we choose within the law. The rights of ourselves and the others around us are protected.</p> <p>What does this look like in science?</p> <ul style="list-style-type: none"> • There are opportunities for students to work independently and make choices in a safe environment when carrying out investigations. • There are opportunities to debate issues where students can share their opinions and listen to the views of others. For example, single use plastic and adult social care.
<p>Mutual Respect and Tolerance of others</p>	<p>Mutual Respect and Tolerance There is equality and fairness for all, regardless of background or religious beliefs. We understand that we do not all share the same beliefs and values. We respect the values, ideas and beliefs of others and do not impose our own onto them.</p> <p>What does this look like in science?</p> <ul style="list-style-type: none"> • Students work together practically in groups which encourages teamwork and respect for others. • There are opportunities to learn about scientific discoveries by a diverse range of people from our culture and other cultures. • Students learn about the continual evolution of scientific ideas which occurs through the acceptance that different people have different ideas about a concept. • There are opportunities to consider conflict between religious beliefs and scientific understanding with respect and acceptance of people's values.