Science LTP Overview

Science will be taught by Topics will run by number of weeks not over half terms

During their studies of different objectives, our children will cover the five types of scientific enquiry: research, pattern seeking, observations over time, identifying and classifying and comparative/fair testing(KS2), so that they enjoy each area, understand the vocabulary and are confident to constantly ask questions and test out their predictions.

Reception	**Marvellous Me** THEME: **Senses and Healthy Choices** Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Describe what they see, hear and feel whilst outside. Manage own basic hygiene and personal needs. Understand the importance of healthy food choices. Know and talk about the different factors that support their overall health and wellbeing: • regular physical activity • healthy eating • toothbrushing • sensible amounts of 'screen time' • having a good sleep routine • being a safe pedestrian 6 weeks	**Materials and Light** THEME: **Changing Materials** Talk about the differences between materials and changes they notice. Explore the natural world around them. Provide children with opportunities to change materials from one state to another. Explore how different materials sink and float. Explore how you can shine light through some materials, but not others. Investigate shadows. Plan and introduce new vocabulary related to the exploration and encourage children to use it. 12 weeks	**Plants and Animals** THEME: **Plant and Animal Life cycle.** Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things. Explore the natural world around them. Describe what they see, hear and feel whilst outside. Help children to care for animals and take part in first-hand scientific explorations of animal life cycles, such as caterpillars or chick eggs. Plan and introduce new vocabulary related to the exploration. Encourage children to use it in their discussions, as they care for living things. 12 weeks	**Forces and How things work** THEME: **Draw children's attention to forces** Explore how things work. Explore and talk about different forces they can feel. Explore the natural world around them. Plan and introduce new vocabulary related to the exploration and encourage children to use it. Provide mechanical equipment for children to play with and investigate. Suggestions: wind-up toys, pulleys, sets of cogs with *p*egs and boards. 7 weeks
	Seasonal Changes and weather THEME: Understand the effect of changing seasons on the natural world around them. Guide children's understanding by draw children's attention to the weather and seasonal features. Provide opportunities for children to note and record the weather. Select texts to share with the children about the changing seasons. Throughout the year, take children outside to observe the natural world and encourage children to observe how animals behave differently as the seasons change. Look for children incorporating their understanding of the seasons and weather in their play.			

<table>
<tr><td>Year 1</td><td>Seasonal changes
THEME: CHANGES IN WEATHER AND LENGTH OF DAY
Summer-Autumn
Similarities and differences between the length of each day, how the weather, fawn, fauna and what people wear changes depending upon the climate.
3weeks
Laura Tobin meteorologist</td><td>Animals including humans
THEME:ANIMALS IDENTIFY AND NAME VARIETY OF COMMON ANIMALS
Identify which animals, fish, amphibians, reptiles, birds and mammals are carnivores, herbivores and omnivores. Describe the structure of each category of animal.
7weeks
Rachel Carson –marine biologist</td><td>Animals including humans
THEME: HUMAN BODY
Label different parts of the body. Explain the 5 senses and how they are used.
7weeks
Leonardo Da Vinci- scientist , anatomy of the body.</td><td>Seasonal changes
THEME: CHANGES IN WEATHER AND LENGTH OF DAY
Autumn - Winter
Similarities and differences between the length of each day, how the weather, fawn, fauna and what people wear changes depending upon the climate.
2 weeks</td><td>Plants
THEME:PLANTS AND TREES
Identify and name common garden plants and trees
7 weeks
Chris Pakham (Naturalist)</td><td>Seasonal changes
THEME: CHANGES IN WEATHER AND LENGTH OF DAY
Winter - Spring
Similarities and differences between the length of each day, how the weather, fawn, fauna and what people wear changes depending upon the climate.
2 weeks</td><td>Materials and their properties
THEME:IDENTIFYING WHAT MATERIAL OBJECTS ARE MADE FROM
Name variety of everyday materials and describe simple properties. Group them together by physical properties.
7 weeks
Tiera Guinn (engineer)</td><td>Seasonal changes
THEME: CHANGES IN WEATHER AND LENGTH OF DAY
Spring-Summer
Similarities and differences between the length of each day, how the weather, fawn, fauna and what people wear changes depending upon the climate.
2 weeks</td></tr>
<tr><td>Year 2</td><td colspan="2">Materials and their properties
THEME: USES AND MANOUVERABILITY OF SOLID MATERIALS
Comparing suitability of different materials for particular uses.
Find out how solid objects can be changed by squashing, bending, twisting and stretching.
10 weeks
Charles Mackintosh</td><td colspan="2">Animals including humans
THEME: IDENTIFY BASIC NEEDS OF ANIMALS AND HUMANS
Describe importance of exercise, healthy diet and hygiene.
Know about human and animal offspring.
9 weeks
Adelle Davis Nutritionist</td><td colspan="2">Living things and their habitats
THEME: KNOW HOW ANIMALS LIVE IN HABITATS TO WHICH THEY ARE SUITED
9 weeks
Jane Goodall Behaviourist</td><td colspan="2">Plants
THEME: WHAT PLANTS NEED TO GROW AND BE HEALTHY- OBSEVE SEEDS AND BULBS
8 weeks
Joseph Dalton Hooker botanist</td></tr>
<tr><td>Year 3</td><td>Rocks and soils
THEME: OBSERVATIONS OF DFFERENT ROCKS AND SOILS
8 weeks
Mary Anning</td><td>Light and dark
THEME: IMPORTANCE OF LIGHT AND HOW A SHADOW IS MADE
7 weeks
Thomas Edison</td><td>Forces and magnets
THEME: MAGNETIC FORCE AND EXAMPLES
In addition, how objects move on different surfaces.
6 weeks</td><td colspan="2">Animals including humans
THEME: IMPORTANCE OF THE SKELETON AND NUTRITION
Nutrition from plants and other animals.
8 weeks</td><td colspan="2">Plants
THEME: STUDY OF FLOWERING PLANTS
• Lifecycle, functions of various parts, importance of nutrients in soil.
8weeks
Mary Seacole herbology and med</td></tr>
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			David A Johnson	Ralph Solecki (Founder of first Neanderthal skelton)	
Year 4	**Electricity** THEME: CONSTRUCTION OF SIMPLE CIRCUITS WITH CHANGING COMPONENTS 7 weeks Nikola Tesla	**Animals including humans** THEME: DIGESTION AND TEETH Plus more advanced food chain – producer, predator and prey. **8 weeks** **William Beaumont**	**Sound** THEME: HOW SOUND IS MADE AND HOW IT CAN BE CHANGED 8 weeks Alexander Graham Bell	**Living things and their habitats** THEME: GROUPING AND CLASSIFYING (KEYS) Plus dangers in changing environment. 7 weeks David Attenborough	**Materials and their properties** THEME: KNOW THE DIFFERENT STATES OF MATTER AND HOW THEY CAN BE CHANGED Group solids, liquids & gases Heating and cooling Evaporation and condensation using water cycle 7 weeks Anders Celsius
Year 5	**Materials and their properties** THEME: SUITABILITY OF MATERIALS BY FOCUSED PROPERTIES Learn that a state can be reversed / recovered / new material created Different methods to separate materials 11 weeks Andre Geim and Konstantin Novoselov Nobel prize for science	THEME: DESCRIBE THE MOVEMENTS OF EARTH, MOON, SUN AND PLANETS Plus, use rotation to explain day and night. 6 weeks Mae Gemison	**Forces** THEME: GRAVITY, AIR AND WATER RESISTANCE AND FRICTION Plus, recognise that mechanisms can allow a small force to have a greater effect. 7 weeks Issac Newton	**Living things and their habitats** THEME: REPRODUCTION AND LIFECYCLES OF DIFFERENT ANIMALS AND PLANTS 7 weeks Diam Fossey	**Animals including humans** THEME: CHANGES AS HUMANS DEVELOP INTO OLD AGE Puberty 6 weeks Dr Patrick Steptoe and Dr Robert Edwards
Year 6	**Evolution** THEME: ADAPTATION In addition - learn that offspring are not always identical to parents 9 weeks Charles Darwin	**Light and dark** THEME: HOW LIGHT TRAVELS THROUGH THE EYE Know it travels in straight lines 6 weeks Ibn al-Haytham	**Animals including humans** THEME: CIRCULATORY SYSTEM AND IMPACT OF LIFESTYLE Plus describe ways nutrients and water are transported in animals and humans 8 weeks William Harvey	**Electricity** THEME: MAKE CHANGES IN CIRCUITS AND EXPLAIN RESULTS Plus drawing simple circuits 5 weeks Andre-Marie Ampere	**Living things and their habitats** THEME: CLASSIFYING BY OBSERVABLE CHARACTERISTICS Give reasons for classification 9 weeks Carl Linnaeus