



Cedars Park Primary School

Science Long Term Plan



Intent

At Cedars Park, we value science as a subject, which stimulates awe and wonder in our everyday lives. We believe science can have a transformative effect on children: helping them to become curious and inspired by the world around them. We believe that a high-quality science education should engage, stimulate and challenge pupils, equipping them with the knowledge and skills to better understand their life, their planet and how these both relate. We encourage children to learn from and be inspired by the work of great scientists, and understand the contribution science has made to society, both past and present. As pupils progress, we support them to be able to pose increasingly complex scientific questions and carry out experiments to work accurately and analytically.

We believe that our curriculum should be relevant, engaging and accessible to all (whatever their starting points, preferred learning style or special educational need). Medium term plans outline both the success criteria and the differentiation strategies for each lesson. The aim is to deliver consistently high quality learning opportunities for all.

Implementation

Teachers plan sequences of lessons across the unit that build on and develop the children's knowledge and skills. Each unit of learning has a strong foundation in new knowledge – linked to prior knowledge – that will support the children to understand increasingly complex scientific phenomena and processes. Scientific vocabulary is mapped and taught rigorously to ensure that children can both recognise, understand and use scientific terminology accurately and confidently. Opportunities to learn outdoors and explore our natural environment are embedded throughout our science curriculum. Where possible, visitors and links to local organisations are utilised to bring the experiences alive and make their relevance apparent.

Carefully selected skills are planned to best match each unit of knowledge and progress, year on year. Opportunities to practise and embed skills are planned for so that they are revisited and refined over time. The knowledge and skills that children will develop throughout each science topic are mapped across each year group and across the school to ensure progression, as is the vocabulary that they will meet.

The school's teaching and curriculum is carefully planned to meet all needs, including those with SEN, with adjustments where appropriate. Children should experience a variety of learning opportunities, with explicit links to their relevance in everyday life where possible. Differentiated texts or resources are utilised where appropriate, with technology supporting their access to wider information and experiences. Additional support may be offered, dependent on learning priorities school-wide e.g. assistance carrying out practical tasks and recording measurements by working alongside a member of the support staff.



Cedars Park Primary School

Science Long Term Plan



Impact

The impact of our science curriculum can clearly be seen in the children’s books. At the beginning of each unit, a detailed medium term plan outlines the main learning objectives that the children will build on and the knowledge that they will gain. After completion of the unit of work, assessments of key concepts and understanding of vocabulary are undertaken. Class teachers use the children’s class learning and assessments, along with observations of their skills when carrying out experiments and investigations, to make a judgement as to whether each child is working towards, at or above the expected level. On a wider level, teachers evaluate trends in learning within each unit taught, monitoring the class-wide achievement of concepts and skills - and amending plans where appropriate to fill gaps in knowledge.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Early Years <i>Year round: gardening mini-allotment and Twinkl 'outdoor explorers' for Welly Wednesday.</i>	<ul style="list-style-type: none"> Seasonal Change My body Celebrating differences/being unique Fruits from around the world. House making (Based on the Three Little Pigs) - material properties. 	<ul style="list-style-type: none"> Seasonal Change . Where does our food come from? Bridge making -material properties/ strength 	<ul style="list-style-type: none"> Seasonal Change How our bodies work - opticians, hospitals, operations and first aid 	<ul style="list-style-type: none"> Seasonal Change Floating and sinking - pirate ships How cars move How steam trains move Planet names and space travel 	<ul style="list-style-type: none"> Seasonal Change Minibeasts Life cycle of a ladybird/butterfly Gardening - seed growth and plant decay. Parts of a flower - stem, roots, leaf & flower 	<ul style="list-style-type: none"> Seasonal Change Jungle life - animals and plants. Land/river animals. Camouflage and endangered animals Recycling
Year 1	Seasonal Changes <ul style="list-style-type: none"> Observe changes across the four seasons. 	Animals including humans <ul style="list-style-type: none"> Identify and name a variety of 	Everyday Materials – <ul style="list-style-type: none"> Distinguish between an object and the material from which 	Animals including humans <ul style="list-style-type: none"> Identify, name, draw and label the basic 	Plants <ul style="list-style-type: none"> Identify and describe the basic structure of a variety of common flowering plants, including 	



Cedars Park Primary School

Science Long Term Plan

	<ul style="list-style-type: none"> ● Observe and describe the weather associated with the seasons. 	<p>common animals.</p> <ul style="list-style-type: none"> ● Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) <p>Seasonal Changes</p> <ul style="list-style-type: none"> ● Observe and describe weather associated with the seasons and how day length varies. 	<p>it is made.</p> <ul style="list-style-type: none"> ● Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. ● Compare and group together a variety of everyday materials on the basis of their simple physical properties. ● Describe the simple physical properties of a variety of everyday materials. 	<p>parts of the human body and say which parts of the body are associated with each sense.</p> <p>Science Week: Connections- Senses</p> <p>Plants</p> <ul style="list-style-type: none"> ● What do plants need to grow? ● Identify and describe the basic structure of a variety of common flowering plants, including trees. 	<p>trees.</p> <ul style="list-style-type: none"> ● Identify and name a variety of common and wild garden plants, including deciduous and evergreen trees. <p>Seasonal Change</p> <ul style="list-style-type: none"> ● Observe changes across the four seasons ● Observe and describe weather associated with the seasons
Year 2	<p>Animals including humans</p> <ul style="list-style-type: none"> ● Growth of offspring (of animals and humans) ● Basic needs of animals, including humans, for survival (water, food and air) ● Importance for humans of exercise, 	<p>Uses of everyday materials</p> <ul style="list-style-type: none"> ● Identify and compare everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses – making a wind proof house ● Changing shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<p>Science Week</p> <p>Using data to compare growth patterns.</p> <p>Plants Observing Plants. To observe closely using simple equipment Recording observations of a variety of plants in</p>	<p>Living things and their habitats</p> <ul style="list-style-type: none"> ● Explore and compare the differences between things that are living, dead, and things that have never been alive. ● What is a habitat? 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> ● Simple food chains - identify and name different sources of food. Food chains in Africa ● Food Webs- How animals depend on each other to survive.



Cedars Park Primary School

Science Long Term Plan



	eating the right amounts of different types of food, and hygiene.			the local environment. I can look closely at plants and trees and Record what I see. Seeds and Bulbs. 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. Parts of a plant/ What plants need to survive.	Types of habitats. living/non living things in different habitats. •Micro habitats	<ul style="list-style-type: none"> Habitats - Animal biomes and adaptations
Year 3 *2022-23 only Spr1 and 2 swapped	Light and Dark <ul style="list-style-type: none"> Reflection Data Processing 	Animals including Humans <ul style="list-style-type: none"> Muscles Bones Nutrition 	Forces and Magnets <ul style="list-style-type: none"> Pushes and Pulls Magnetic Forces 	Rocks <ul style="list-style-type: none"> Soils Fossils 	Plants <ul style="list-style-type: none"> The parts of a plant Functions of plant parts Reproduction 	Plants <ul style="list-style-type: none"> Pollination Dispersal
Year 4	States of Matter <ul style="list-style-type: none"> Sort and describe materials 	Sound <ul style="list-style-type: none"> What happens when sound is 	Sound <ul style="list-style-type: none"> Patterns in volume and vibration 	Digestion <ul style="list-style-type: none"> Function of human 	Living Things <ul style="list-style-type: none"> How animals are similar and 	Electricity <ul style="list-style-type: none"> How electricity is useful

Cedars Park Primary School

Science Long Term Plan

	<ul style="list-style-type: none"> • What is absolute zero? • What happens when materials change state? • Record temperatures on a line graph • How does an insulator affect cooling? • Water cycle 	<ul style="list-style-type: none"> • How does sound change over a distance? • How are sounds measured? • Parts of the ear • How does sound travel? • How does sound insulation work? 	<ul style="list-style-type: none"> • Patterns between pitch of a sound and the object that made it • Sound made by air vibrations 	teeth <ul style="list-style-type: none"> • Animal teeth • Toothpaste • Functions of organs in human digestive system • Where are the digestive organs located? 	different <ul style="list-style-type: none"> • Vertebrate and invertebrate • Why living things live in certain habitats • How animals adapt to different environments • How humans affect the world • Food chains 	<ul style="list-style-type: none"> • How to make a bulb light • Why are bulbs bright or dim? • What are electrical conductors and insulators? • Which materials can be used to make a switch?
Year 5	Properties <ul style="list-style-type: none"> • Testing materials • Dissolving and separating 	Changes <ul style="list-style-type: none"> • Reactions • Reversible and irreversible • Changes of state 	Forces <ul style="list-style-type: none"> • Gravity • Friction forces • Levers and pulleys 	Earth and Space <ul style="list-style-type: none"> • Shape and movement of objects in Solar System • Day and night 	Living things and their habitats <ul style="list-style-type: none"> • Life cycles • Reproductions in animals and plants 	Animals including humans: <ul style="list-style-type: none"> • Human reproduction and growth
Year 6	Light <ul style="list-style-type: none"> • Reflection • Refraction • Shadows 	Electricity <ul style="list-style-type: none"> • Simple circuits • Drawing scientific diagrams of circuits • Investigation into the number of 	Evolution and Inheritance <ul style="list-style-type: none"> • Adaptation and its advantages. • Understand natural selection. • Inheritance 	Evolution and Inheritance <p>Activities related to the impact of Mary Anning and Charles Darwin.</p> <p>Understanding natural</p>	Healthy Bodies <ul style="list-style-type: none"> • Process of digestion. • Circulatory system. • Recognise the impact of exercise and nutrition 	Healthy Bodies <ul style="list-style-type: none"> • Microorganisms • Scientists in history that developed an understanding of bacteria. • Understand what



Cedars Park Primary School

Science Long Term Plan



		<p>bulbs in a circuit and their brightness.</p> <ul style="list-style-type: none">● Investigation into the number of cells in a circuit and the volume of a buzzer.	<ul style="list-style-type: none">● Classification● Keys.	selection		<p>yeast is and how it works.</p> <ul style="list-style-type: none">● Understand what a virus is.
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