Long Term Plan - Science (Key Stage 1 & 2)

Intent:

We aim to give pupils a broad and balanced understanding of the sciences through a wide and varied curriculum. We teach through cross-curricular themes so that learners are more able to apply their knowledge and understanding to a range of contexts and develop the ability to confidently explore and discover the world around them. We provide routine practical experiences to build scientific knowledge and vocabulary throughout the phase, offering a range of science-based enrichment to explicitly tie the curriculum to real life situations.

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Across all year groups scientific knowledge and skills should be learned by working scientifically. Such as asking questions, making observations, making predictions and gathering and recording data.					
Cherry	**Materials and their Properties**	**Living Things and Their Habitats**	**Weather and Seasons**	**Animals Including Humans**	**The Environment**	**Plants**
	Identify, name, describe, classify, compare properties of everyday materials. Identify and compare suitability of some materials	Explore and compare things that are living, dead and have never been alive. Identify that most things live in habitats to which they are suites Identify and anme a variety of plants and animals in their habitats Describe how animals survive within their habitats using food chains.	Observe seasonal changes. Observe and describe weather assosociated with seasons	Identify and name a variety of animals Classify animals into different categories Identify, name, draw and label basic body parts Investigate and describe the basic needs of animals (inc. humans) Describe the importance of a balanced diet	Look at the practical uses of everyday materials. Describe suitability of materials Describe the process of recycling and the importance of it	Identify and name a variety of plants Identify and describe the basic structure Observe and describe how seeds grow Identify and describe how plants stay healthy and grow
Willow	**Plants**	**Living Things: grouping and classification, food chains**	**Light and Seeing**	**Electric Circuits**	**Animals and Humans: muscles and skeletons, keeping healthy (diet and exercise)**	**States Of Matter**
	Identify and describe the functions of different parts of flowering plants Explore the requirements of plants for life and growth Investigate the way in which water is transported within plants. Explore the role of flowers in the life cycle	Recognise that living things can be grouped in a variety of ways. Explore and use classification keys. Recognise that environments can change and that this can sometimes pose dangers to specific habitats. Construct and interpret a variety of food chains, identifying producers, predators and prey. Identify that animals, including humans, need the right types and amounts of nutrition	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 there are ways to protect your eyes Recognise that shadows are formed when a light source is blocked. Find patterns in the way that the size of shadows change.	Identify electric appliances that need electricity Construct a simple series electrical circuit and name its basic parts Identify whether or not a lamp will light in a simple series circuit Recognise some common conductors and insulators Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights	Identify that animals/humans need the right nutrition Construct and interpret food chains Identify that humans and some animals have skeletons and muscles for support, protection and movement. 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.	Group materials: Solids, liquids and gas Observe that some materials change state when they are heated or cooled and measure the temperature Identify the part played by evaporation and condensation in the water cycle Identify the temperature needed for evaporation

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Oak	**Electrical Circuits**	**Forces**	**Living Things**	**Materials and Their Properties**	**Earth and Space**	**Animals and Humans**
	Associate changes to components to the volume of a buzzer or number of volts. Compare and give reason in how components function. Use recognised symbols when representing a circuit.	Explain that unsupported objects fall to the Earth because of gravity. Identify with accuracy the effect of drag forces that act between moving surfaces. Understand how some mechanisms allow a smaller force to have a greater effect.	Describe the differences in the life cycles of a variety of animals. Describe the life process of reproduction in some plants and animals. Describe how living things are classified according characteristics. Give reasons for classifying plants and animals on characteristics.	Compare and group together everyday materials based on evidence from fair tests. Understand how some materials will dissolve in liquid to form a solution and how mixtures might be separated. Give reasons, based on fair tests, for the particular uses of everyday materials. Demonstrate and explain that dissolving, mixing and changes of state are reversible changes an that some result in the formation of new materials which is usually not reversible.	Describe the movement of the Earth, relative to the Sun in the solar system the movement of the Moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies. Describe the Earth's rotation to explain day and night and the movement of the sun across the sky.	Describe the changes as humans develop. Identify and name parts of the human circulatory system and describe their functions. Recognise the importance of a healthy lifestyle on the human body. Describe how nutrients and water are transported within animals and humans.
Maple	**Sound and Hearing**	**Changing Materials**	**Forces**	**Animals Including humans**	**Materials and Their Properties**	**Evolution and Inheritance**
	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.	Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials Demonstrate with a depth of knowledge that dissolving, mixing and changes of state are reversible changes Explain with advancing understanding that some changes result in the formation of new materials, and that this kind of change is not usually reversible.	Explain confidently that unsupported objects fall towards the Earth because of the force of gravity Identify accurately the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces. Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.	Recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions Accurately describe the ways in which nutrients and water are transported within animals, including humans.	Give reasons using advanced vocabulary, based on evidence from comparative and fair tests, for the particular uses of everyday materials Accurately explain that some changes result in the formation of new materials, including changes associated with burning, oxidisation and the action of acid on bicarbonate of soda.	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