Yew Tree Primary School

SCIENCE CURRICULUM OVERVIEW

RESPONSIBILITY:
We are responsible for what we do – if it's to be, it's up to me! We are prepared, organised and recognise consequences of our actions on ourselves and others.

RESPECT:
We are respectful by treating others how we wish to be treated – using manners, being thoughtful, kind and celebrating diversity

COURAGE:
We are brave and we take chances. We develop resilience to keep going even when things are tough. We face our fears and we are not afraid to make mistakes.

AMBITION:
We believe we can achieve in anything that we put our mind to. We aim high, love learning, have a positive 'can do' attitude and aim to be the best!

PRIDE:
We are proud of who we are and where we are from. We believe in our abilities and celebrate our success. We are a family at Yew Tree!

Intent	**Curriculum Aim**	To offer a broad, balanced & inclusive curriculum which acts as a starting point to stimulate awe, wonder & curiosity and which encompasses 'Learning Without Limits' so that children are empowered and able to achieve their full potential.	**What does this mean for Science** **What does this subject area offer our curriculum?** A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. **What are the key features of this subject area?** Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. **What should this subject look like in our curriculum?** Children should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.
	Curriculum Objectives	• To develop the child as a responsible and confident citizen who is prepared to live in an ever-changing and diverse world. • To develop the child as an individual who embraces challenge and makes the most of every opportunity to learn. • To develop the child as a life-long learner who has a range of skills, which ensure a high level of achievement.	

Yew Tree Primary School
Science Key Knowledge Progression

Idea	Aspect	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Biology	**Plants**	Can talk about some of the things they have observed such as plants Plant seeds and care for growing plants Understand the key features of a life cycle of a plant. Describe features of plants and trees.	They make observations of animals and plants and explain why some things occur, and talk about changes. Explore the natural world around the making observations of plants. Begin to name and groups plants and trees.	Identify and name wild and garden plants Identify and name deciduous and /or evergreen trees Identify the structure of plants and trees e.g. roots, trunk, stem, flower and canopy	Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Observe and describe how seeds and bulbs grow into mature plants	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk leaves and flowers Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant Investigate the way in which water is transported within plants Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment		

	Animals including humans	Can talk about some of the things they have observed such as animals Developing an understanding of growth, decay and changes over time. Talk about what they see. Begin to make sense of their own life story and families history. Identify some body parts from pictures (Mestro) Name domestic animals Begin to talk about and name the parts of animals	They make observations of animals and explain why some things occur, and talk about changes. Know and talk about the factors that support their healthy and well-being. Make observations of animals Name some of the different body parts (Maestro) Match animals to their young. Identify common features for groups of animals.	Identify and name common animals including Fish, amphibians, reptiles, birds and mammals Identify and name common animals that are herbivores and omnivores. Name the basic parts of the human body and say which part of the body is associated with each sense.	Notice that animals, including humans, have offspring which grow into adults Find out about and describe the basic needs of animals, including humans, for survival (water, food, air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat Identify that humans and some other 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. Construct and interpret a variety of food chains, identifying producers, predators and prey	Describe the difference in the life cycles of a mammal, an amphibian an insect and a bird. Describe the life process of reproduction in some plants and animals Describe the changes as humans develop to old age.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animal. Give reasons for classifying plants and animals based on specific characteristics Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood (including the pulse and clotting). Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported

	Living things and their habitats	Begin to understand the need to respect and care for the natural environment and all living things. Use all of their senses in exploration of natural materials. Begin to talk about living things in their local environment Say how a living thing has changed over time.	Recognise some environments that are different to the one in which they live They make observations of animals and plants and explain why some things occur, and talk about changes. Observe and describe living things in their environment Explore the natural world around them and give simple descriptions following observations of changes.		Differences between things that are living, dead, and things that have never been alive. Identify and name a variety of plants and animals in their habitats, including microhabitats. Describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain. Name different sources of food.		Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recognise that environments can change constantly changing and that this can sometimes pose dangers to specific habitats		

	Evolution and inheritance								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

Chemistry	**Materials inc. properties and changes of materials**	Can talk about the differences between materials and changes they notice. Explore collections of materials with similar and / or different properties (with support). Talk about how they are similar or different	Children know about similarities and differences in relation to objects, materials and changing states of matter. Recognise the properties of some materials Compare and group materials and objects..	Can name what an object is made from The names of a variety of every day material including wood, plastic, glass, metal, water and rock. Know the simple physical properties of a variety of every day materials.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching			Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials,	

	States of matter						Compare and group materials together, according to whether they are solids, liquids or gases Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature		

	Rocks					Compare and group together different kinds of rocks on the basis of their simple physical properties Recognise that soils are made from rocks and organic matter Describe in simple terms how fossils are formed when things that have lived are trapped within rock			

Physics	**Light**					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 shadows are formed when a light source is blocked by a solid object Find patterns in the way that the size of shadows change Recognise that light from the Sun can be dangerous and that there are ways to protect our eyes			Recognise that light appears to travel in straight lines Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye E xplain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

	Sound						Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sound travel through a medium to the ear Recognise that sounds get fainter as the distance from the sound source increases 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.		

	Electricity		Explore and describe electrical light sources.				Identify common appliances that run on electricity Construct a simple series electrical circuit identifying and naming the basic parts of a simple electrical circuit, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit based on whether or not the lamp is part of a complete loop with a battery Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram

	Forces and Magnets	Explore and talk about different forces that they can feel (floating and sinking)	Describe, predict and sort things that float and sink and talk about the forces they can feel.			Compare how things move on different surfaces. Notice that some forces need contact between two objects but magnetic forces act at a distance. Observe how magnets attract or repel each other and attract some materials and not others Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing		Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effect of air resistance, water resistance and friction that act between moving surfaces. Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.	

	Earth and Space							Describe the movement of the Earth, and other planets relative to the Sun in the solar system Describe the movement of the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately spherical bodies Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	

	Seasonal Changes	Begin to talk about changes that they notice. Talk about the weather as being warm or cold. Say what the daily weather is like.	Understand the effect of the changing seasons on the natural world around them. Notice and begin to describe patterns of weather in summer and winter. Describe what they see hear and feel while they are outside. Describe how the weather changes as the seasons change.	Observe changes across the four seasons Observe and describe weather associated with the seasons and how					