SCIENCE PROGRESSION GRID

A high-quality science curriculum should inspire, enthuse and enable children to find out about the world around them and how it works. Science is the study of nature and how things work, the reasons behind every-day things. It's about making the strange, mysterious, and complicated become concepts that we understand. It is about measuring and testing, and trying to find rules about how things work by testing them fairly. Working scientifically helps develop critical thinking skills, and has many links to other subjects, especially Maths and Design Technology. At Leadgate Primary School, we make Science lessons practical and enjoyable.
The national curriculum for science aims to ensure that all pupils:

- equip children to use themselves as starting points for learning about science, and to build on their enthusiasm and natural sense of wonder about the world.
- develop, through practical work, the skills of observation, prediction, investigation, interpretation, communication, questioning and hypothesising, and increased use of precise measurement skills and ICT.
- encourage and enable pupils to offer their own suggestions, and to be creative in their approach to science, and to gain enjoyment from their scientific work.
- enable children to develop their skills of co-operation through working with others, and to encourage where possible, ways for children to explore science in forms which are relevant and meaningful to them.
- encourage children to collect relevant evidence and to question outcome and to persevere.
- stress the need for personal and group safety by the correct usage and storage of resources.

		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
WORKING SCIENTIFICALLY		Answer 'how' and 'why' questions their experiences in response to events. Develop their own narratives and explanations by connecting ideas or events.	Ask simple questions. Recognise that questions can be answered in different ways. Perform simple tests. Observe closely. Compare things and sort them into groups. Use simple equipment to take measurements. Gather and record simple data in different ways. Talk about what I have found out using scientific language.		Ask questions and use scientific knowledge to answer them. Set up simple fair tests. Make careful observations and take accurate measurements using a range of resource. Gather and record findings using simple scientific language, drawings, labelled diagrams bar charts, and tables. Use results to draw conclusions and make predictions about future investigations. Use straight forward scientific evidence to answer questions.		Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Use test results to make predictions to set up further comparative and fair tests. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identify scientific evidence that has been used to support or refute ideas or arguments.	
BIOLOGY	Plants	Know about similarities and differences in relation to places, objects, materials, living things. Talk about the features of own immediate environment, how environments might vary from one another. Explain why some things occur.	Identify and name a variety of wild and garden plants and describe the basic structure of a variety of common flowering plants, including trees.	Find out what healthy plants need 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 and investigate the way in which water is transported within plants Explore the parts that flowers play in the life cycle of flowering plants.	Construct and interpret a variety of food chains, identifying predators, producers and prey	Describe the life process of reproduction in some plants and animals.	Give reasons for classifying plants and animals based on specific characteristics.

Living things and their habitats	Know about similarities and differences in relation to places, objects, materials and living things. Talk about the features of their own immediate environment and how environments might vary from one another. Make observations of animals and plants and explain why some things occur, and talk about changes.		Explore and compare the differences between things that are living, dead and things that have never been alive. Describe how animals obtain their food using simple food chains. Identify and name a variety of plants and animals in their habitats, how they are suited to them and how they depend on each other.		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 living things	Describe the life processes of reproduction in some plants and animals Describe the differences in life cycles and the life process of reproduction in some plants and animals	Describe how living things are classified into broad groups and give reasons for classifying plants and animals based on specific characteristics
Animals including humans	Know about similarities and differences between themselves and others.	Identify, name, describe and compare the structure of a variety of common animals. Identify, name, draw and label the basic parts of the human body Identify and name a variety of common animals that are carnivores, herbivores and omnivores	Describe the importance for humans to stay healthy. Find out and describe the basic needs of animals including humans for survival Notice that animals, including humans have offspring that grow into adults.	Identify that humans and other animals have skeletons and muscles for support, protection and movement Identify that animals, including humans, need the right types and amount of nutrition, and they cannot make their own food.	Describe the simple functions of the basic parts of the digestive system in humans Identify the different kinds of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying predators, producers and prey	Describe the changes as humans develop into old age Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	Identify and name the main parts of the human circulatory system. Describe the ways in which nutrients/water are transported within animals, including humans Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
Evolution and Inheritance		Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	Identify that most living things live in habitats to which they are suited Notice that animals, including humans, have offspring which grow into adults		Explore and use classification keys to help group, identify and name a variety of living things Recognise that environments can change and that this can sometimes pose dangers to living things.		Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how plants and animals are adapted / leads to evolution. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
Rocks				Describe in simple terms how fossils are formed when things that have lived are trapped within rock			
Seasonal Change		Observe changes across all four season and describe the weather associated with the seasons and how day length varies.	Find out and describe how healthy plants need water, light and a suitable temperature to grow and stay healthy.	Explore the requirements of plants for life and growth and how they vary from plant to plant.	Recognise that environments can change and that this can sometimes pose dangers to living things.	Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	

PHYSICS	Electricity		Describe the simple physical properties of, compare and group together a variety of everyday materials	Identify and compare the suitability of a variety of everyday materials.		Conduct a simple series circuit, identifying and naming its basic parts. Identify whether or not a lamp will light in a simple series circuit. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights up.	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets	Associate the brightness of a bulb or volume of a buzzer with number of voltage of cells used in the circuit. Compare and give reasons for variation in how components function. Use symbols when representing a simple circuit in a diagram.
	Forces and Magnets		Name a variety of everyday materials. Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Identify and compare the suitability of a variety of everyday materials. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel. Describe magnets as having two poles Predict whether two magnets will attract each other or repel each other depending on which poles are facing		Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets	
	Earth and space		Observe and describe weather associated with the seasons and how day length varies.		Recognise that light from the sun can be dangerous and that there are ways to protect their eyes	Recognise that environments can change and that this can sometimes pose dangers to living things. Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	Describe the movement of the Earth, and other planets, relative to the Sun in the Solar System and the movement of the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately spherical bodies Use the idea that the Earth's rotation to explain day and night.	
	Light				Recognise that they need light in order to see things. Notice that light is reflected from surfaces Recognise that shadows are formed when the light from a light source is blocked by a solid object Find patterns in the way that the size of shadows change.			Recognise that light appears to travel in straight line and use this idea that to explain that objects are seen because light travels from light sources to our eyes of from the light sources to objects then brings it to our eyes and to explain why shadows

								have the same shape as the objects cast on them.
	Sound		Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.			Identify how sounds are made. Recognise that vibrations from sounds travel through the inner ear Find patterns between the pitch of a sound and features of the object which has produced it Recognise that sounds get fainter as the distance from the sound source increases		
	Forces			Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others	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. Recognise that some mechanisms allow a smaller force to have a greater effect	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets	
CHEMISTRY	Materials	Know about similarities and differences in relation to places, objects, materials and living things. Talk about the features of their own immediate environment and how environments might vary from one another. Make observations of animals and plants and explain why some things occur, and talk about changes.	Describe the difference between an object and the materials from which it is made. Describe the simple properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple properties.	Identify and compare the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties Recognise that soils are made from rocks and organic matter. 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.		Compare and group together everyday materials. Give reasons for the particular uses of everyday material and know that some materials will dissolve into liquid to form a solution and describe how best to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated. Demonstrate that dissolving, mixing and changes of state are reversible changes and explain that some changes result in the formation of new materials.	
	States of matter		Properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple properties.		Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.	Compare and group materials according to whether they are solids, liquids or gases Observe that some materials change state when they are heated or cooled, Identify the part played by evaporation and condensation in the water cycle.	Explain that some changes result in the formation of new materials, ad that this kind of change is not usually reversible, including changes associated with burning and the action of acid o bicarbonate of soda.	

Rocks		Describe the difference between an object and the materials from which it is made. Describe the simple properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple properties.	Identify and compare the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.			
Forces and magnets		Distinguish between an object and the material from which it is made Identify and name materials. Describe, compare and group together a variety of everyday materials on the basis of their simple physical properties.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	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 or their appearance and simple physical properties Notice that some forces need contact between two objects, but magnetic forces can act at a distance	Recognise some common conductors and insulators, and associate metals with being good conductors	Compare and group together ever, day materials on the basis of their properties including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.	
Electricity		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			Recognise some common conductors and insulators, and associate metals with being good conductors.	Compare and group together ever, day materials on the basis of their properties including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.	