LTP – Science/Understanding of the World

Working Scientifically – KS1 Objectives
ask simple questions and recognise that they can be answered in different ways
observe closely, using simple equipment
perform simple tests
identify and classify
use observations and ideas to suggest answers to questions
gather and record data to help in answering questions
Working Scientifically – LKS2 Objectives
ask relevant questions and use different types of scientific enquiries to answer them
set up simple practical enquiries, comparative and fair tests
make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
gather, record, classify and present data in a variety of ways to help in answering questions
record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
identify differences, similarities or changes related to simple scientific ideas and processes
use straightforward scientific evidence to answer questions or to support their findings
Working Scientifically – UKS2 Objectives
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 a 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

EYFS
Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Explore the natural world around them. Describe what they see, hear and feel whilst outside. Recognise some environments that are different from the one in which they live. Understand the effect of changing seasons on the natural world around them. Explore the natural world around them, making observations and drawing pictures of animals and plants. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (Weather link).

T1	Y1	Y2	Y3	Y4	Y5	Y6
Science Area	**Paws, Claws, Whiskers & Wings** **Animals Including Humans - birds & mammals**	**Fire Fire** **Everyday Materials**	**Set in Stone** **Rocks**	**What did the Romans ever do for us?** **Electricity**	**Hola** **Living Things & Their Habitats**	**Blitz & Pieces** **Light**
Objectives	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish,	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 different kinds of rocks on the basis of their appearance and simple physical properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soils are made from rocks and organic matter.	Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, based on whether or	Describe the differences 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 (human reproduction). Describe the Sun, Earth and Moon as	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. Explain that we see things because light travels from light sources to our eyes or from light sources to

	amphibians, reptiles, birds and mammals, including pets)			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.	approximately spherical bodies.	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.
T2	Y1	Y2	Y3	Y4	Y5	Y6
Science Area	**Flying High** **Everyday Materials**	**Into the Night** **Living Things & Habitats**	**Funny Bones** **Animals including Humans - skeletons**	**Growling Guts** **Animals including Humans - The Digestive System**	**Out of This World** **Earth & Space**	**Power Surge** **Electricity**
Objectives	Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Describe the simple physical properties of a variety of everyday materials	Explore and compare the differences between things that are living, dead, and things that have never been Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on	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 & prey.	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. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	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.

	Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Identify and name a variety of plants and animals in their habitats, including micro-habitats each Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.				
T3	Y1	Y2	Y3	Y4	Y5	Y6
Science Area	**Come Rain or Shine -** **Seasonal Changes**	**How does your garden grow?** **Plants**	**Mighty Metals** **Forces & Magnets**	**Magnificent Mayans** **Living Things & Their Habitats - Classification**	**How Horrid was Henry VIII?** **Forces**	**Changing World** **Evolution & Inheritance**
Science Area	Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies.	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 plants	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 Compare and group together a variety of everyday materials on	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 and that this can sometimes pose	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller	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

			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.	dangers to living things.	force to have a greater effect.	to suit their environment in different ways and that adaptation may lead to evolution.
T4	Y1	Y2	Y3	Y4	Y5	Y6
Science Area	**Amazing Adventures** **Plants**	**To Infinity & Beyond** **Animals Including Humans - offspring**	**Raging Rivers, Crashing Coasts** **Light**	**Extreme Earth** **Sound**	**What A State!** **Properties & Changes of Materials**	**Blood Heart** **Animals Including Humans**
Objectives	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees.	Notice that animals, including humans, have offspring which grow into adults	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 that there are ways to protect their eyes Recognise that shadows are formed when the light from a light source is blocked by a solid object	Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. 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.	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. 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	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. 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 within animals, including humans.

			Find patterns in the way that the size of shadows change.	Recognise that sounds get fainter as the distance from the sound source increases.	separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	
T5	Y1	Y2	Y3	Y4	Y5	Y6
Science Area	**Aye Aye Captain** **Everyday Materials - Investigation**	**Carnival Time** **Animals, including humans - healthy diets**	**From Bean to Bar** **Plants**	**Powerful Potions** **States of Matter**	**Tomb Raiders**	**Art Attack** **Living Things & Their Habitats**

					Forces - Investigations	
Objectives	Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock 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.	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	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 part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	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. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects 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.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.
T6	Y1	Y2	Y3	Y4	Y5	Y6
Science Area	**Oh I do like to be beside the seaside** **Animals Including Humans - fish, amphibians & reptiles**	**Bird's Eye View** **Living Things & Their Habitats - Plants**	**Who Let the Gods Out?** **Animals, including humans - keeping healthy (linked to RSE)**	**Raided, Invaded & Stayed** **Electricity - Investigation**	**Frozen** **Animals Including Humans**	**Light, Camera, Action** **Sound & Electricity – Investigation & Application**
Objectives	Identify, name, draw and label the basic parts of the human	Explore and compare the differences between things that	identify that animals, including humans, need the right types	Identify common appliances that run on electricity	Describe the changes as humans develop to old age.	Associate the brightness of a lamp or the volume of a buzzer

	body and say which part of the body is associated with each sense.	are living, dead, and things that have never been Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on Identify and name a variety of plants and animals in their habitats, including micro-habitats each	and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat	Construct a simple series electrical circuit, identifying and naming its basic parts, 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.		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