Wingrove Primary School **Science Skills and Knowledge Map**

Topic	KS1	LKS2	UKS2
Animals including humans (including Y6 Evolution and inheritance)	**Y1** Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.		
	Y1 Identify and name a variety of common animals that are carnivores, herbivores and omnivores. **Y2 – Living things and their habitats** 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.	**Y4** Construct and interpret a variety of food chains, identifying producers, predators and prey.	
	Y1 *Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). *Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. **Y2** *Notice that animals, including humans, have offspring which grow into adults.	**Y3** *Identify that humans and some other animals have skeletons and muscles for support, protection and movement. **Y4** *Describe the simple functions of the basic parts of the digestive systems in humans. *Identify the different types of teeth in humans and their simple functions.	**Y6** * Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. * Describe the ways in which nutrients and water are transported within animals including humans. **Y5** Describe the changes as humans develop to old age. **Y6 (Evolution and inheritance)** Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. **Y5 (Living things and their habitats)** Describe the difference in the life cycles of a mammal, an amphibian, an insect and a bird.
	Y2 *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.	**Y3** *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.	**Y6** *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.

		Y3 Rocks Describe in simple terms how fossils are formed when thigs that have lived are trapped within rock.	**Y6 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. *Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Plants	**Y1** *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.	**Y3** *Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. *Investigate the way in which water is transported within plants.	
	Y2 *Observe and describe how seeds and bulbs grown into mature plants. *Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	**Y3** *Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. *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.	**Y5 Living things and their habitats** Describe the life process of reproduction in some plants and animals.
Living things and their habitats	**Y2** *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 each other. *Identify and name a variety of plants and animals in their habitats, including microhabitats. *Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identity and name different sources of food.	**Y4** *Recognise that environments can change and that this can sometimes pose dangers to living things **Y4: Animals including humans:**	

		*Construct and interpret a variety of food chains, identifying producers, predators and prey)	
		Y4 *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.	**Y6** *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.
	Y2 – Animals including Humans: *Notice that animals, including humans, have offspring which grow into adults. *Explore and compare the differences between things that are living, dead, and things that have never been alive.		**Y5:** *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.
Materials **Y1 – Everyday materials** **Y2 – Uses of everyday materials** **Y3 – Rocks** **Y4 – State of matter** **Y5 – Properties and changes of materials**	**Y1 (everyday materials):** *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. **Y2 Uses of everyday 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.		**Y5 Properties and changes of materials:** *Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.

	Y1 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.	**Y3 Rocks** Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. **Y4 States of matter** Compare and group materials together, according to whether they are solids, liquids or gases.	**Y5 Properties and changes of materials** *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.
	Y2 Uses of everyday materials: Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**Y4 States of matter** *Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. *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).	**Y5 Properties and changes of materials** *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. *Demonstrate that dissolving, mixing and changes of state are reversible changes. *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.
		Y3 Rocks * 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.	**Y6 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).
Forces and magnets Y3 **Forces Y5**		**Y3 Forces and magnets** *Compare how things move on different surfaces. *Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance. *Observe how magnets attract or repel each other and attract some materials and not others.	**Y5 Forces** *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.

		*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 2 poles. *Predict whether 2 magnets will attract or repel each other, depending on which poles are facing.	*Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.
Electricity **Y4 and Y6**		**Y4** *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 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.	**Y6** *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.
Light **Y3 and Y6**		**Y3 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 light from the sun can be dangerous and that there are ways to protect their eyes.	**Y6** *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 objects and then to our eyes
		*Recognise that shadows are formed when the light from a light source is blocked by an opaque object. *Find patterns in the way that the size of shadows change.	*Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Sound **Y4**		**Y4** *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. *Recognise that sounds get fainter as the distance from the sound source increases.	
Seasonal changes Y1 **Earth and Space Y5**	**Y1:** *Observe changes across the 4 seasons. *Observe and describe weather associated with the seasons and how day length varies.		**Y5:** *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.

Working scientifically skills progression grid

KS1	LKS2	UKS2
• asking simple questions and recognising that they can beanswered in different ways	• asking relevant questions and using differenttypes of scientific enquiries to answer them	• planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
• performing simple tests	• setting up simple practical enquiries,comparative and fair tests	• using test results to make predictions to set up further comparative and fair tests
• observing closely, using simple equipment	• making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	• taking measurements, using a range ofscientific equipment, with increasing accuracy and precision, taking repeatreadings when appropriate
• using their observations and ideas tosuggest answers to questions • gathering and recording data tohelp in answering questions	• gathering, recording, classifying and presentingdata in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys,bar charts, and tables	• recording data and results of increasingcomplexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

	• reporting on findings from enquiries, includingoral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, makepredictions for new values, suggest improvements and raise further questions	• reporting and presenting findings from enquiries, including conclusions, causalrelationships and explanations of and adegree of trust in results, in oral and written forms such as displays and other presentations
• identifying and classifying	• identifying differences, similarities or changes related to simple scientific ideas and processes	• identifying scientific evidence that hasbeen used to support or refute ideas orarguments

EYFS *Understanding the World* and KS1 *Science* knowledge progression grid

***EYFS new curriculum 2021**

Birth to Three Understanding the World	Three to Four Year Olds	Children in Reception	Early Learning Goals	KS1
*Make connections between the features of their family and other families. *Notice differences between people.		*Talk about members of their immediate family and community. *Name and describe people who are familiar to them. *Describe what they see, hear and feel whilst outside.		*Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. **Y1 Animals including humans** *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 and air) **Y2 Animals including humans**
*Explore and respond to different natural phenomena in their setting and on trips. **Materials** *Explore materials with different properties. *Explore natural materials, indoors and outside.	*Use all their senses in hands on exploration of natural materials. *Explore collections of materials with similar and/or different properties. *Talk about what they see, using a wide vocabulary. *Explore how things work. *Plant seeds and care for growing plants. *Understand the key features of the life cycle of a plant and an animal. *Begin to understand the need to respect and care for the natural environment and all living things. *Explore and talk about different forces they can feel.	*Explore the natural world around them. *Recognise some environments that are different to the one in which they live. *Understand the effect of changing seasons on the natural world around them.	*Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps. *Explore the natural world around them, making observations and drawing pictures of animals and plants. *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. *Understand some important processes and changes in the natural world around them, including the	*Identify and name a variety of common animals including fish, amphibians, reptiles,birds and mammals. **Y1 Animals including humans** *Identify and name a variety of common animals that are carnivores, herbivores and omnivores. **Y1 Animals including humans** *Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. **Y1 Plants** *Explore and compare the differences between things that are living, dead, and things that have never been alive. **Y2 Living Things and their Habitats** *Identify and name a variety of common animals including fish, amphibians, reptiles,birds and

	Materials Talk about the differences between materials and changes they notice.		seasons and changing states of matter.	mammals. **Y1 Animals including humans** *Identify and name a variety of common animals that are carnivores, herbivores and omnivores. **Y1 Animals including humans** *Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. **Y1 Plants** *Explore and compare the differences between things that are living, dead, and things that have never been alive. **Y2 Living Things and their Habitats** *Observe changes across the four seasons. *Observe and describe weather associated with the seasons and how day length varies. **Y1 Seasonal Changes** *Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. **Y2 Use of Everyday Materials**
PD Learn to use the toilet with help, and then independently.	**PD** *Be increasingly independent in meeting their own care needs, eg brushing teeth, using the toilet, washing and drying hands thoroughly. *Make healthy choices about food, drink, activity and toothbrushing.	**PD** *Know and talk about the different factors that support their overall health and wellbeing: regular physical activity, healthy eating, toothbrushing, sensible amounts of 'screen time,' having a good sleep routine, being a safe pedestrian. Further develop the skills they need to manage the school day successfully, ie. personal hygiene.		*Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. **Y2 Animals including Humans**