Science Knowledge Progression Grid:

Topic	KS1	LKS2	UKS2
Animals Including humans (Incl. 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 ofcommon 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 ofa simple food chain, and identify and name different sources of food)*	Y4 • construct and interpret a varietyof food chains, identifying producers, predators and prey	
	Y1 • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds andmammals including pets) • identify, name, draw and label the basic parts of the human body and say which part of thebody is associated with each sense	Y3: • identify that humans and some other animals have skeletons and muscles for support, protection and movement Y4: • describe the simple functions ofthe basic parts of the digestive system 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 andblood • describe the ways in which nutrients and water are transported within animals, including humans

	Y2: ● notice that animals, including humans, have offspring which grow into adults		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 differences 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 typesof 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 things that have lived are trapped within rock)*	Y6 (Evolution and inheritance) ● recognise that living thingshave 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 suittheir 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		
	Y1: • 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 grow into mature plants	Y3: • explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	*(Y5 – living things and their habitats* • *describe the life process of reproduction in some plantsand animals)*
	Y2: • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	Y3 • 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	

Living thingsand 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	Y4 • recognise that environments can change and that this can sometimes pose dangers to living things		
	• 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 identify and name different sources of food	(*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 andbased on similarities and differences, including micro-organisms, plants and animals	
				• give reasons for classifying plants and animals based onspecific characteristics
(Y2 – Animals including Humans: • *notice that animals, including humans, have offspring which grow into adults)* Y2: • explore and compare the differences between things that are living, dead, and things that have never been alive			**Y5:** • describe the differences in thelife cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plantsand animals	

Materials: **- Everyday materials (Y1),** **- Uses of everyday materials (Y2),** **- Rocks (y3),** **- States of matter (y4),** **- Properties& changes of materials (Y5)**	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 ofmaterials: • 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 togethera variety of everyday materialson 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 ofmaterials: • compare and group together everyday materialson the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
		Y4 (states of matter) • identify the part played by evaporation and condensationin the water cycle and associate the rate of evaporation with temperature	

	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): ● observe that some materials change state when they are heated or cooled, and measureor research the temperature at which this happens in degrees Celsius (°C)	Y5 <u>Properties and changes ofmaterials:</u> ● explain that some changes result in the formation of new materials, and that thiskind 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 forma solution, and describe how to recover a substancefrom 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 andmagnets (y3) **Forces(y 5)**		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	<u>Y5 (forces)</u> • explain that unsupported objects fall towards the Earth because of the forceof 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 onthe basis of whether they are attracted to a magnet, and identify some magnetic materials • describe magnets as having 2 poles	• recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect
		• predict whether 2 magnets will attract or repel each other, depending on which poles are facing	

Electricity(y4 and 6)		Y4 • identify common appliances that run on electricity	
		Y4: • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers	Y6 • associate the brightness of a lamp or the volume of a buzzer with the number andvoltage of cells used in the circuit
		• 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	• compare and give reasonsfor 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 simplecircuit in a diagram
		• recognise some common conductors and insulators, and associate metals with being good conductors	

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<tr>
<td rowspan="3"><u>Light</u>
<u>(y3 and y6)</u></td>
<td rowspan="3"></td>
<td><u>Y3 (light):</u>
• 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</td>
<td><u>Y6 (light):</u>
• recognise that light appearsto travel in straight lines.
• use the idea that light travels in straight lines to explain that objects are seen because they give outor 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</td>
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<tr>
<td>• recognise that shadows are formed when the light from a light source is blocked by an opaque object</td>
<td rowspan="2">• use the idea that light travels in straight lines to explain why shadows havethe same shape as the objects that cast them</td>
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<td>• find patterns in the way that the size of shadows change</td>
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Sound (y4)		Y4 (sound): • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a mediumto the ear • find patterns between the pitchof 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 thesound source increases	
Seasonalchanges(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

SENNEN PRIMARY SCHOOL

Working Scientifically Skills Progression Grid:

KS1	LKS2	UKS2
• asking simple questions and recognising that they can be answered in different ways	• asking relevant questions and using different types 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 toset 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 thermometersand data loggers	• taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
• using their observations and ideas to suggest answers to questions • gathering and recording data to help 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 increasing complexity 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, make predictions for new values, suggest improvements and raise further questions	• reporting and presenting 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
• identifying and classifying	• identifying differences, similarities or changes related to simple scientific ideas and processes	• identifying scientific evidence that has been used to support or refute ideas or arguments
	• using straightforward scientific evidence to answer questions or to support their findings.	

EYFS-KS1 science knowledge progression grid:

EYFS Focus (Nursery)	EYFS (Reception)	KS1 Focus
· Learns that they have similarities and differences that connect them to, and distinguish them from, others (**22-36mths,UtW People and Communities)** · Knows some of the things that make them unique (**30-50 mths, UtW People and Communities)**	· Can talk about some of the similarities and differences in relation to friends or family **(30-50mths, UtW People and Communities)** · Know about similarities and differences between themselves and others, and among families, communities and traditions (**ELG, UtW People and Communities)**	· Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense (Y**1 Animalsincluding 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)**
· Notices detailed features of objects in their environment **(22-36 mths, UtW The World**) · Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world (**30-50mths, UtW The World)** · Show care and concern for living things and the environment (**30-50mths, UtW The World)**	· Can talk about some of the things they have observed, such as plants, animals, natural and found objects (**30-50mths, UtW The World)** · Developing an understanding of growth, decay and changes over time (**30-50mths, UtW The World)** · Talk about the features of their own environment and how environments might vary from one another **(ELG, UtW The World)** · Make observations of animals and plants and explain why some things occur and talk about changes (**ELG UtW The World**)	· 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)**

· Talk about why things happen and how things work (**30-50mths, UtW The World)**	· Know similarities and differences in relation to places, objects, materials and living things (**30-50mths, UtW The World**) · Look closely at similarities, differences, patterns and change (**40-60mths UtW The World)**	· 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 EverydayMaterials**)
· Observes the effect of exercise on their bodies (**30-50mths, PD (Health andSelf-care)**	· Eats a range of healthy foodstuffs and understands the need for variety in food (**40-60 mths, PD (Health and Self-Care**) · Know the importance for good health of physical exercise and a healthy diet and talk about ways to keep healthy and safe (**ELG PD (Health and Self-care**)	· Describe the importance for humans of exercise, eating the right amounts of differenttypes of food, and hygiene (**Y2 Animals including Humans)**