Wooden Hill Primary School

Science Curriculum Map and Progression of Skills

	A1	A2	Sp1	Sp2	Su1	Su2
	Marvellous Me!	**Out of this world**	**Time Travellers**		**Roaming through the Rainforest**	**Animal Kingdom**
Year 1	**Animals including humans (part 1)** **Human body parts** identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	**Seasonal changes – Autumn** observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies. Change over time: **TAPS Seasonal Change** WS: Recording observations to answer questions **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 describe the simple physical properties of a	**Seasonal changes - Winter** observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies. Change over time: **TAPS Seasonal Change** WS: Recording observations to answer questions **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 describe the simple physical properties of a	**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 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. Focus on toys Comparative: Which material could make a waterproof hat for the teddy? WS: Answering questions using their data collected.	**Plants** Are all plants green? identify and name a variety of common wild and garden plants, including deciduous and evergreen trees How do plants grow? Do all plants need water? identify and describe the basic structure of a variety of common flowering plants, including trees. Identify and name the roots, trunk, branches and leaves of trees. Key Investigations Comparative: Which tree has the biggest leaves? WS: Collecting data to answer questions Identify and classify: How can we sort the leaves we have collected?	**Animals including humans (part 2)** **Animals** 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 Do all animals hunt? describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) **Seasonal changes – Summer** observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies. Key Investigations

		variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties. Focus on clothing linked to space suits Comparative: **TAPS Ways to test reflectiveness** WS: Recognise that question can be answered in different ways. Identify and classify: Which plastic could I use to make a tool belt? (flexibility) Comparative: Which material could make a good space nappy? (absorbant) WS: Perform a simple test to answer a question.	variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties. Comparative: **TAPS Bridge Testers** WS: Collecting data to answer questions	Pattern seeking: Which materials are most toys made from? WS: Collecting data to answer questions **Seasonal changes – Spring** observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies. Observation over time: **TAPS Seasonal Change** WS: Recording observations to answer questions	WS: identify and classify (noticing similarities and differences) Observation over time: How does a __ change each week/over the year? Pattern seeking: Is there a pattern in where we find ___ growing in the school grounds? **TAPS Leaf Looking** WS: Observing closely using simple equipment	Comparative: Is our sense of smell better when we cannot see? Identify and classify: **TAPS Animal Classification** WS: identify and classify (noticing similarities and differences) Research: Do all animals have the same sense as humans? Observation over time: **TAPS Seasonal Change** WS: Recording observations to answer questions

	London's Burning	Healthy Bodies	Spice of Life	Imagination Island	The Secret Garden	Beside the Seaside
Year 2	**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 find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. How do the habitats around the school change over the year? Identify and classify: Which materials float and which sink? WS: identify and classify (noticing similarities and differences) Comparing: **TAPS Waterproof** WS: ask simple questions and recognise that they can be answered in different ways **TAPS Rocket Mice**	**Animals including humans** Do all animals live and grow in the same way? notice that animals, including humans, have offspring which grow into adults Know the basic stages of life cycles of some animals and humans. All animals eventually die. Mature animals can produce offspring. 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. Exercise is important for animals to keep them healthy and help them to survive. How do the habitats around the school change over the year? Key Investigations Comparative: Do amphibians, insects and	How do the habitats around the school change over the year?	**Living things and their habitats** explore and compare the differences between things that are living, dead, and things that have never been alive 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 How do the seasons affect animals and plants? What animals and plants live around the school? identify and name a variety of plants and animals in their habitats, including microhabitats How do the habitats around the school change over the year? Which animals hunt and which animals are hunted? describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify	**Plants** observe and describe how seeds and bulbs grow into mature plants What is different between freshly cut and planted plants? Do plants flower all year round? find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Key Investigations Comparative: **TAPS** Comparing plant growth in different conditions WS: observe closely using simple equipment Observation over time: What happens to a seed after it has been planted? Pattern seeking: Do bigger seeds grow into bigger plants? Research: How does a cactus survive in a desert with no water?	**Living things and their habitats** explore and compare the differences between things that are living, dead, and things that have never been alive 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 How do the seasons affect animals and plants? What animals and plants live around the school? identify and name a variety of plants and animals in their habitats, including microhabitats How do the habitats around the school change over the year? Which animals hunt and which animals are hunted? describe how animals obtain their food from plants and other animals, using the idea of a simple

	WS: perform simple tests and use results to answer questions.	mammals have the same life cycles? Identify and classify: Which offspring belongs to which animal? Observation over time: How does a tadpole change over time? How much food and drink do I have during a week? Pattern seeking: **TAPS Comparing hand spans** WS: Using observations to answer questions.		and name different sources of food. Key Investigations Comparative: Identify and classify: **TAPS: Sorting living and non-living** WS: identify and classify (noticing similarities and differences) How can groups these plants and animals based on what habitat you will find them in? Observation over time: How do the animals and plants that can be found around the school change over the year? WS: ask simple questions and recognise that they can be answered in different ways Pattern seeking: **TAPS Woodlice habitat** WS: Gathering and recording data to answer questions Research: How do the animals and plants in ___ differ to those in Britain?		food chain, and identify and name different sources of food. Investigations Comparative: Identify and classify: **TAPS: Sorting living and non-living** WS: identify and classify (noticing similarities and differences) How can groups these plants and animals based on what habitat you will find them in? Observation over time: How do the animals and plants that can be found around the school change over the year? WS: ask simple questions and recognise that they can be answered in different ways Pattern seeking: **TAPS Woodlice habitat** WS: Gathering and recording data to answer questions Research: How do the animals and plants in ___ differ to those in Britain?

Year 3	**Rock of Ages**	**The Auroras**	**Gladiators**	**Moving to thrive**	**Work like an Egyptian**	**Jurassic World**
	Rocks and soils 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 Key Investigations Comparative: How does adding different amounts of sand to soil affect how quickly water drains through it? WS: Recording data in a table. **TAPS: Reporting on Rocks** WS: reporting on findings from enquiries, including oral and written explanations, displays or presentations	**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 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. Key Investigations Comparative: How does the distance between the shadow puppet and the screen affect the size of the shadow? WS: using results recorded in a simple	**Forces and Magnets** 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 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. Key Investigations Comparative:	**Plants** identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Know that plants are producers- they make their own food. 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. Key Investigations Comparative: How does the length of the carnation stem affect how long it takes for		**Animals including humans** 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. Know the importance of a balanced diet (PSHE linked) Why do we need a skeleton? Are all skeletons the same? Can something survive without a skeleton? identify that humans and some other animals have skeletons and muscles for support, protection and movement. Muscles are connected to bones and move them when they contract. Moveable joins connect bones. Rocks (Fossils)

	of results and conclusions Identify and classify: Use an identification key to name the different rocks. (sweet lesson) WS: making systematic and careful observation recording findings using simple scientific language and simple drawings Pattern seeking: Do the properties of rocks change with the type of rock? Research: Who was Mary Anning and what did she discover?	table to draw simple conclusions. Identify and classify: Sorting objects into translucent, transparent and opaque. WS: Taking accurate measurements using a range of equipment – dataloggers (lux) Pattern Seeking: **TAPS Can everything make a shadow?** WS: gathering, recording, classifying and presenting data in a variety of ways to help in answering questions Research: How does the sun make light?	**TAPS Testing the Strength of Magnets** WS: Set up simple practical enquiries and fair tests. **TAPS Shoe Grip** WS: Taking accurate measurements using a range of equipment – Newton metres. Identify and classify: Which materials are magnetic? Pattern seeking: What happens when magnets are pushed together? Exploring NN/SN etc WS: recording findings using simple scientific language, drawings, labelled diagrams.	food colouring to dye the petals? WS: Set up simple practical enquiries and fair tests. Identify and classify: How can we group the seeds? Observation over time: How do flowers in a vase change over time? Pattern seeking: What colour flowers do insects prefer? WS: Recording data in a bar chart Research: How are different seeds dispersed? WS: identifying differences, similarities or changes related to simple scientific ideas and processes		describe in simple terms how fossils are formed when things that have lived are trapped within rock Recap only Key Investigations Comparative: Identify and classify: How can we compare/ sort different animals' skeletons? Observation over time: How does a human skeleton change from birth to death? Pattern seeking: **TAPS Investigating the human skeleton** WS: Asking relevant questions and setting up different types of scientific enquiries to answer them Research: What types of animals have endo and exo skeletons?
Year 4	**Invaders and Settlers**	**Extreme Earth**	**The Marvellous Mayans**	**Planet Protectors**	**The Groovy Greeks**	**Legendary London**
	Sound identify how sounds are made, associating some of them with something vibrating	**States of matter** compare and group materials together, according to whether they are solids, liquids or gases	**States of matter** – chocolate observe that some materials change state when they are heated or cooled, and measure or research the	**Living things and their habitats** recognise that living things can be grouped in a variety of ways	**Animals including humans** identify the different types of teeth in humans and their simple functions	**Electricity** identify common appliances that run on electricity

	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. Key Investigations Comparative: Which material is the best sound insulator? WS: reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions (model of mouth) Pattern seeking: **TAPS Investigating pitch** WS: asking relevant questions and using different types of scientific enquiries to answer them	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. Key Investigations Comparative: How does the mass of a block of ice affect how long it takes to melt? WS: Set up simple practical enquiries and fair tests. Identify and classify: Group objects into solids, liquids and gasses. Observation over time: What do you notice when you put a small amount of water into a clear bag and put it on the window sill? (Model of water cycle) **TAPS Making Ice cream** Ws: making systematic and careful observations and recording appropriately.	temperature at which this happens in degrees Celsius (°C) **TAPS: Measuring temperature** WS: Taking accurate measurements using standard units including a range of equipment including thermometers and data loggers.	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 dangers to living things. Key Investigations Comparative: Does the amount of light affect how much woodlice move? WS: Recording results in a table Identify and classify: Creating classification keys from found animals/ plants. E.g pond dipping or on a walk Pattern seeking: How does the use of insecticides affect bee population? Research: What affect does chopping down rainforests have?	construct and interpret a variety of food chains, identifying producers, predators and prey. Different food chains can be found in different environments (link to last half term) Describe the simple functions of the basic parts of the digestive system in humans. Key Investigations Identify and classify: How can we organise teeth into groups? WS: reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions (model of mouth) Observation over time: **TAPS: Teeth in liquids** WS: using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Pattern seeking: Do carnivores and herbivores' teeth look the same?	construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers An electrical source pushes electricity around a 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 recognise some common conductors and insulators, and associate metals with being good conductors. Electrical safety Why are wires insulated with plastic? Key Investigations Identify and Classify: Building and testing circuits predicting which will work and building their own to test WS: recording findings using simple scientific language, drawings,

	TAPS String telephones WS: identifying differences, similarities or changes related to simple scientific ideas and processes				WS: using straightforward scientific evidence to answer questions or to support their findings. Research:	labelled diagrams, keys, bar charts, and tables (drawing accurate circuit diagrams) Pattern Seeking: **TAPS Does it conduct electricity?** WS: reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions (model of mouth) Observation over time: How can you group electrical devices based on their source of electricity?
Year 5	**Terrible Tudors**	**Neighbours – Near and Far**	**Natural Disasters**	**Life in the Trenches**	**Crime and Punishment through the ages**	**Africa – Benin**
	Properties and Changes of Material 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** 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	**Properties and Changes of Material** know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution	**Forces and Magnets** 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,	**Living things and their habitats** 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.	**Animals including humans** describe the changes as humans develop to old age. Different animals mature at different rates and live to different ages. Puberty is something we all go through. Key Investigations Comparative:

	give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic Key Investigations Comparative: Which material is the best for __? Identify and classify? How can you group materials using their properties? Observation over time: Pattern seeking: Research:	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. Key Investigations Comparative: How does the length of daylight hours change over the year? Observation over time: How does the length of a shadow change during the day? Pattern seeking: **TAPS Craters** WS: recording data in a table and graph. Is the a link between the size of a planet and how long it takes to orbit the sun? Research: How has our understanding of the solar system changed over time?	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. Key Investigations Comparative: **TAPS Dissolving** WS: planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Identify and classify: Are these reaction reversible or irreversible? Observation over time: What happens to a glass of salty water over time? (crystals) Pattern seeking: What do you notice about irreversible reactions? Research:	that act between moving surfaces recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Key Investigations Comparative: **TAPS Spinners** WS: taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate **TAPS Aquadynamics** WS: reporting and presenting findings from enquiries, explanations of and a degree of trust in results Identify and classify: Can you draw diagrams and label the forces acting on an object? WS: recording data and results of increasing complexity using scientific diagrams and labels Pattern seeking: **TAPS Marble Run** WS: using test results to make predictions to set	Some organisms reproduce sexually which results in variation. Some organisms produce asexually which creates clones. Key Investigations Comparative: How does the level of salt affect how quickly brine shrimp hatch? Identify and classify: Compare and classify animals based on similarities and differences in their life cycle. Observation over time: How do brine shrimp change over their life time? Pattern seeking: Is there a relationship between the number of petals and the number of stamen? Research: Life cycles of different animals.	Identify and classify: Can you identify the different stages of a human life? Observation over time: How do embyros change over time? Pattern seeking: Is there a relationship between an animal's size and its gestation period? Research: Why do people get white hair when they get older?

			What are smart materials and how can they help us?	up further comparative and fair tests How can the position of the fulcrum affect the force needed for the lever to lift a weight? Research: Isaac Newton WS: identifying scientific evidence that has been used to support or refute ideas or arguments		
Year 6	**Sail away with me**	**Bombs, Battles and Bravery**	**Evolutionary Tail**		**Down Under**	**Moving on up!**
	Electricity 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. Key Investigations	**Light** 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 use the idea that light travels in straight lines to	**Living things and their habitats** 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 Research and pattern seeking: **TAPS Invertebrate Research**	**Evolution and inheritance** What was Darwin's theory and why wasn't it initially accepted? 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 life cycles have changed over time to help organisms survive until adulthood. recognise that living things produce offspring of the same kind, but normally offspring vary		**Animals including humans** identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood muscles need oxygen to release energy from food 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.

	Comparative: **TAPS Bulb Brightness** WS: Plan a scientific enquiry to answer a question, recognising and controlling variables. Research: How has use of electricity changed over time?	explain why shadows have the same shape as the objects that cast them. Key Investigations Comparative: How does the angle that a light ray hits a plane mirror affect the angle at which it reflects off the surface? **TAPS Investigating shadows** WS: Take accurate measurements and record data on a graph. **TAPS Raising and sorting light questions** WS: Identify different types of scientific enquiries to answer their own questions.	WS: Report and present findings.	and are not identical to their parents How do animals become extinct? identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. Key Investigations Comparative: What is the most common eye/hair colour in the class? Identify and classify: How can you classify observations into evidence for evolution? (apes, human, Neanderthals skeletons eg) Change over time How has the skeleton of a ___ e.g horse changed over time? Why? Pattern Seeking: Is there a pattern between the size and shape of a bird's beak and the food it eats? **TAPS Fossil habitats** WS: Use scientific evidence to support and refute ideas.		Key Investigations Comparative: Which type of exercise has the greatest affect on our hear rate? Identify and classify: Which organs make up the circulatory system and where are they found? Pattern Seeking: **TAPS Heart Rate Poses** WS: Use test results to make predictions and set up further comparative tests.

				Research: What happened when Charles Darwin visited the Galapagos islands?		