Year 3 working scientifically			
Planning	Obtaining and presenting evidence	Considering evidence and evaluating	Types of investigations
Can they use different ideas and suggest how to find something out? Can they make and record a prediction before testing? Can they plan a fair test and explain why it was fair? Can they set up a simple fair test to make comparisons? Can they explain why they need to collect information to answer a question?	Can they take accurate measurements using different equipment and units of measure? Can they record their observations in different ways? - labelled diagrams, charts etc. Can they describe what they have found using scientific language?	Can they explain what they have found out and use their measurements to say whether it helps to answer their question?	Children should have the opportunity to investigate Observing changes over different periods of time Noticing patterns Grouping and classifying Carrying out comparative and fair tests Finding things out using secondary resources
Year 4 working scientifically			
Can they plan and set up a fair test and isolate variables, explaining why it was fair and which variables have been isolated? Can they suggest improvements and predictions? Can they ask their own questions? Can they decide which information needs to be collected and decide what	Can they take measurements using different equipment and units of measure and record what they have found in a range of ways? Can they use a range scientific equipment's to take accurate measurements or readings? Can they explain their findings in different ways (display, presentation,	Can they find any patterns in their evidence or measurements? Can they evaluate and communicate their methods and findings? Can they make a prediction based on something they have found out? Can they ask further questions based on their data and observations? Can they evaluate what they have	Observing changes over different periods of time Noticing patterns Grouping and classifying Carrying out comparative and fair tests Finding things out using secondary resources.

the best way to collect it is? Can they use their findings to draw a simple conclusion?	writing)? Can they record data using diagrams, labels, classification keys, tables, scatter graphs, bar graphs and line graphs?	found using scientific language, drawings, labelled diagrams, bar charts and tables? Can they identify differences, similarities or changes related to simple scientific ideas or processes?	
Year 5 working scientifically			
Can they explore different ways to test an idea, choose the best way and give reasons? Can they vary one factor whilst keeping the others the same in an experiment? Can they use information to help make a prediction? Can they explain, in simple terms, a scientific idea and what evidence supports it?	Can they decide which units of measurement they need to use? Can they explain why a measurement needs to be repeated?	Can they find a pattern from their data and explain what it shows? Can they link what they have found out to other science? Can they suggest how to improve their work and say why they think this?	
Year 6 working scientifically			
Can they explore different ways to test an idea, choose the best way, and give reasons? Can they identify the key factors when planning a fair test? Can they vary one factor whilst keeping	Can they explain why they have chosen specific equipment? (Including ICT based equipment) Can they decide which units of measurement they need to use?	Can they find a pattern from their data and explain what it shows? Can they use a graph to answer scientific questions? Can they link what they have found out	Children should have the opportunity to investigate through: Recognising and controlling variables accurately and fairly, including changes over different periods of time Noticing patterns, groupings and

the others the same in an experiment? Can they explain why they do this? Can they use information to make a prediction and give reasons for it? Can they use test results to make further predictions and set up further comparative tests? Can they explain, in simple terms, a scientific idea and what evidence supports it?	Can they make precise measurements? Can they explain why a measurement needs to be repeated? Can they record their measurements in different ways? (including bar charts, tables and line graphs) Can they read and record measurements systematically using a range of scientific equipment with increasing accuracy and precision? Can they present a report of their findings through writing, display and presentation?	to other science? Can they suggest how to improve their work and say why they think this? Can they record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models? Can they draw conclusions from their work? Can they report findings from investigations through written explanations and conclusions using appropriate scientific language?	classifying Carrying out comparative and fair tests Finding things out using a wide range of secondary sources.

Wrockwardine Wood CE Junior School

Science Progression Document

Throughout our science curriculum we utilise and build on the children's previous substantive knowledge. The national curriculum presents this through a variety of topics which are taught in a progressive two-year cycle across the lower and upper key stages. Disciplinary knowledge and skills are taught alongside the substantive knowledge in each unit to ensure that scientific skills are embedded across the science curriculum. The progression of these skills is organised into 4 key areas: planning, obtaining and presenting evidence, considering evidence and evaluating and types of investigations.

Our science curriculum reflects teachers' careful thought about what is to be taught, the rationale for it, the sequencing of learning and the relationships between the substantive and disciplinary skills. With this in place, pupils know, remember and are able to do more.

Topic	Year 3	Year 4	Year 5	Year 6
Animals Including Humans	I know 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. I know that humans and some other animals have skeletons and muscles for support, protection and movement. I know that humans and some other animals have skeletons and muscles for support, protection and movement. **Key Vocabulary**: Movement, Muscles, Bones, Skull, Nutrition,	I know the simple functions of the basic parts of the digestive system in humans I know the different types of teeth in humans and their simple functions I can construct and interpret a variety of food chains, identifying producers, predators and prey **Key Vocabulary**: Mouth, Tongue, Teeth, Oesophagus, Stomach, Small	I know the changes as humans develop to old age **Key Vocabulary**: Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty	I know the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood I know the impact of diet, exercise, drugs and lifestyle on the way their bodies function I know the ways in which nutrients and water are transported within animals,

	Skeletons	Intestine, Large Intestine, Herbivore, Carnivore, Canine, Incisor, Molar		including humans **Key Vocabulary: c**irculatory, Heart, Blood Vessels, Veins, Arteries, Oxygenated, Deoxygenated, Valve, Exercise, Respiration
Forces and Magnets	I can compare how things move on different surfaces. I know that some forces need contact between 2 objects, but magnetic forces can act at a distance. I can observe how magnets attract or repel each other and attract some materials and not others. I can 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 I know magnets have 2 poles. I can predict whether 2 magnets will attract or repel each other, depending on which poles are facing. **Key Vocabulary**: Magnetic, Force, Contact, Attract, Repel, Friction, Poles, Push, Pull		I know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces I know that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. **Key Vocabulary: A**ir resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys	
Properties and states of matter		I can compare and group materials together, according to whether they are solids, liquids or gases I know 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)	I can 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	

		I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature Key Vocabulary: solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating	recover a substance from a solution I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic I know 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. an demonstrate that dissolving, mixing and changes of state are reversible changes **Key Vocabulary**: hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing	
Rocks **And evolution and**	I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. I know in simple terms how fossils are formed when things that have lived are trapped within rock.			recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago

inheritance	I know that soils are made from rocks and organic matter. **Key Vocabulary: f**fossils, Soils, Sandstone, Granite, Marble, Pumice, Crystals, Absorbent			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 to suit their environment in different ways and that adaptation may lead to evolution **Key vocabulary:** Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetic
Living Things and their Habitats		I know that living things can be grouped in a variety of ways I can 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 Vocabulary**: Vertebrates, Fish, Amphibians, Reptiles, Birds, Mammals, Invertebrates, Snails, Slugs, Worms, Spiders, Insects, Environment, Habitats	I know 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 **Key Vocabulary: m**ammal, Reproduction, Insect, Amphibian, Bird, Offspring	I know 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 **Key Vocabulary:** Classification, Vertebrates, Invertebrates, Micro-organisms, Amphibians, Reptiles, Mammals, Insects
Plants	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. **Key Vocabulary:** air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, Flower			
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 an opaque object. find patterns in the way that the size of shadows changes. **Key Vocabulary:** light, Shadows, Mirror, Reflective, Dark, Reflection			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 explain why shadows have the same shape as the objects that cast them.

				Key Vocabulary: refraction, Reflection, Light, Spectrum, Rainbow, Colour,
Sound		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 **Key vocabulary:** Volume, Vibration, Wave, Pitch, Tone, Speaker		
Electricity		I know common appliances that run on electricity I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers I know whether or not a lamp will light in a simple series circuit, based on whether or not the lamp		I can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit I can compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers

		is part of a complete loop with a battery I know that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit I know some common conductors and insulators, and associate metals with being good conductors **Key vocabulary: c**ells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators.		and the on/off position of switches I can use recognised symbols when representing a simple circuit in a diagram. **Key vocabulary: c**ells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell
Earth and Space			I know the movement of the Earth, and other planets, relative to the Sun in the solar system I know the movement of the Moon relative to the Earth I know the Sun, Earth and Moon as approximately spherical bodies I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky **Key Vocabulary: E**arth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation	