RAEDWALD ACADEMY TRUST

Long Term Plan and progression outline:

Science Key Stage Two

KS1/ Year 2					
Lower Key	**Year 3**	**Plants**	**Animals, including Humans**		**Light**

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Stage 2	**Taught content: Knowledge/Skills**	• 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	• 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		•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 shadows are formed when the light from a light source is blocked by an opaque object

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		• explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.			• find patterns in the way that the size of shadows change

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	Year 4	Living Things and Their Habitats	Animals, including Humans	States of Matter	Sound	Electricity
	Taught content: Knowledge/Skills	• 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	• 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,	• 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 (°C) • identify the part played by evaporation and condensation in the water cycle and associate	• 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	• 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

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			predators and prey	the rate of evaporation with temperature	• recognise that sounds get fainter as the distance from the sound source increases	

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	Science – Programme of Study KEY STAGE 2				
Upper Key Stage 2	**Year 5**	**Living Things and Their Habitats**	**Animals, including Humans (Y5)**	**Properties and Changes of Materials**	**Forces and Magnets**
	Taught content: Knowledge/Skills	• 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	• describe the changes as humans develop to old age	• 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	• 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

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				and gases to decide how mixtures might be 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	

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				change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda		
	Year 6	**Living Things and Their Habitats**	**Animals, including Humans (Y6)**	**Electricity**		
	Taught content: Knowledge/Skills	• 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	• 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	• 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		

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		• give reasons for classifying plants and animals based on specific characteristics	• describe the ways in which nutrients and water are transported within animals, including humans	on/off position of switches • use recognised symbols when representing a simple circuit in a diagram		
Working Scientifically						
• planning different types of scientific enquiries to answer questions, including recognising and controlling variables where data and results of increasing complexity using scientific diagrams and labels, classification keys, necessary • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Recording tables, scatter graphs, bar and line graphs • Using test results to make predictions to set up further comparative and fair tests • 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 scientific evidence that has been used to support or refute ideas or arguments						