

The Carey Federation – Science Curriculum Progression.

	Year 1 and 2	Year 3 and 4	Year 5 & 6
Implementation Working Scientifically Ideas	<ul style="list-style-type: none"> • Explore the world around and raise simple questions • Start to ask questions without prompts. • begins to respond to suggestions and observations with own ideas. 	Can... <ul style="list-style-type: none"> • Raise their own relevant questions about the world around them • use a range of scientific experiences including different types of science enquiries to answer questions • Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions 	<ul style="list-style-type: none"> • Use their science experiences to explore ideas and raise different kinds of questions • Talk about how scientific ideas have developed over time • Make links between concepts
Implementation Working Scientifically Ideas	<ul style="list-style-type: none"> • takes part in a variety of practical activities • Begins to recognise different ways to answer scientific questions • Can carry out simple tests • Can follow instructions safely • Can ask people questions and use simple secondary sources to find answers • Can use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data. 	Can... <ul style="list-style-type: none"> • Set up simple practical enquiries, comparative and fair test • Recognise when a simple fair test is necessary and help to decide how to set it up • Talk about criteria for grouping, sorting and classifying. + use simple keys <ul style="list-style-type: none"> • Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations • Carry out fair tests with some help, recognising and explaining what makes them fair. 	<ul style="list-style-type: none"> • Decide on an appropriate approach, including using a fair test to answer a question. • Select suitable equipment and information from that provided. • Select and use methods that are adequate for the task. • Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment • Following instructions, taking action to control obvious risks to themselves. • Select and use methods to obtain data systematically. • Recognise hazard symbols and make, and act on, simple suggestions to control obvious risks to themselves and others

Vocabulary			
Implementation Working Scientifically Observations	<ul style="list-style-type: none"> • Begins to notice patterns and relationships • Can use simple features to compare objects, materials and living things and decide how to sort and group them (identifying and classifying) + Give reasons for grouping. • Observe closely using simple equipment +Observe changes over time (seasons, weather, temperature).	Can... <ul style="list-style-type: none"> • Make systematic and careful observations • Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used • Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them • Take accurate measurements using standard units learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately • Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys. + make decisions about how to analyse the data collected	<ul style="list-style-type: none"> • Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Make a series of observations and measurements and vary one factor while keeping others the same. • Record observations, to support comparisons and measurements using tables and bar charts and begin to plot points to form simple graphs.
Implementation Working Scientifically Explaining	<ul style="list-style-type: none"> • Record and discuss simple data • Use observations and ideas to suggest answers to questions • Talk about what they have found out and how they found it out • Use drawings and charts to show findings • With guidance, use scientific language to explain their findings 	<ul style="list-style-type: none"> • With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions • Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions 	<ul style="list-style-type: none"> • communicate conclusions using appropriate scientific language • Identify scientific evidence that has been used to support or refute ideas or arguments • Interpret data containing positive and negative numbers. • Begin to relate conclusions to patterns in data, including graphs, and to scientific knowledge and understanding. • Analyse findings to draw scientific

			<p>conclusions that are consistent with the evidence.</p> <ul style="list-style-type: none"> • communicate findings using scientific and mathematical conventions and terminology
<p>Implementation</p> <p>Working Scientifically</p> <p>Evaluating</p>	<ul style="list-style-type: none"> • Can make simple predictions and say whether what happened was what they expected. 	<ul style="list-style-type: none"> • With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done. • Suggest improvements to their work. 	<ul style="list-style-type: none"> • Suggest improvements to work, giving reasons. • I evaluate my working methods to make practical suggestions for improvements. • I reflect on my results and consider whether they are valid
<p>Implementation</p> <p>Biology</p> <p>Plants</p>	<ul style="list-style-type: none"> • Can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • Can identify and describe the basic structure of a variety of common flowering plants, including trees. • Can observe and describe how seeds and bulbs grow into mature plants • Can understand and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<ul style="list-style-type: none"> • 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. 	
<p>Vocabulary</p>			
<p>Implementation</p> <p>Biology</p> <p>Animals Including Humans</p>	<p>Y1</p> <ul style="list-style-type: none"> • Can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • Can identify and name a variety of common animals that are carnivores, herbivores and omnivores 	<p>Y3</p> <ul style="list-style-type: none"> • 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 	<p>Y5</p> <ul style="list-style-type: none"> • describe the changes as humans develop to old age. <p>Y6</p> <ul style="list-style-type: none"> • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels

	<ul style="list-style-type: none"> • Can describe the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • Begins to compare the structure of a variety of common animals. • Can identify, name and draw the basic parts of the human body. • Can label the basic parts of the human body. • Can say which part of the body is associated with each sense. <p>Y2</p> <ul style="list-style-type: none"> • Understand that animals, including humans, have offspring which grow into adults • Can describe the basic needs of animals, including humans, for survival (water, food and air) • Can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 	<p>animals have skeletons and muscles for support, protection and movement.</p> <p>Y4</p> <ul style="list-style-type: none"> • 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, predators and prey 	<p>and blood</p> <ul style="list-style-type: none"> • 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.
Vocabulary	ideas, design, purpose, describe, materials, tools, techniques,	ideas, plan, materials, components, tools, techniques, sketches, labels,	designers, model, prototype, design, plans, computer aided design, problems, solutions, discussion
Implementation Biology Living things and their habitats	<p>Y2</p> <ul style="list-style-type: none"> • Can explore and begin to compare the differences between things that are living, dead, and things that have never been alive • Can understand that most living things live in habitats best suited for their needs. • Can describe how different habitats 	<p>Y4</p> <ul style="list-style-type: none"> • 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 	<p>Y5</p> <ul style="list-style-type: none"> • 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. <p>Y6</p> <ul style="list-style-type: none"> • describe how living things are classified

	<p>provide for the basic needs of different kinds of animals and plants.</p> <ul style="list-style-type: none"> • Can identify and name a variety of plants and animals in their habitats, including microhabitats. • Can describe how animals obtain their food from plants and other animals, understanding simple food chains. • Can identify and name different sources of food. 	<p>and that this can sometimes pose dangers to living things</p>	<p>into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</p> <ul style="list-style-type: none"> • give reasons for classifying plants and animals based on specific characteristics. <p>Y6</p> <ul style="list-style-type: none"> • recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • 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.
<p>Implementation Chemistry Materials</p>	<p>Y1</p> <ul style="list-style-type: none"> • 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. <p>Y2</p> <ul style="list-style-type: none"> • identify and compare the suitability of a variety of everyday materials, including 	<p>Y3</p> <ul style="list-style-type: none"> • 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. <p>Y4</p> <ul style="list-style-type: none"> • compare and group materials together, according to whether they are solids, liquids or gases 	<p>Y5</p> <ul style="list-style-type: none"> • 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 and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating

	<p>wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <ul style="list-style-type: none"> • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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 change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda
Vocabulary			
Implementation Light/ Electricity		<p>Y3</p> <ul style="list-style-type: none"> • 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 change <p>Y4</p> <ul style="list-style-type: none"> • identify common appliances that run on electricity • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, 	<p>Y6</p> <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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

				switches and buzzers <ul style="list-style-type: none"> • 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. 			in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches <ul style="list-style-type: none"> • use recognised symbols when representing a simple circuit in a diagram. 		
Vocabulary									
Impact	Topic	Assessment	When	Topic	Assessment	When	Topic	Assessment	When
Implementation Physics				Y4 <ul style="list-style-type: none"> • 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 			Y5 <ul style="list-style-type: none"> • 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. Y6 <ul style="list-style-type: none"> • describe the movement of the Earth, and other planets, relative to the Sun in the solar system 		

