Science: Scientific Enquiry
Hollywell Primary School

Specific Focus: Progression of scientific enquiry skills EYFS, KS1, Lower KS2, Upper KS2						
Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
To show curiosity about objects, events and people. To engage in open ended activities. To take a risk, engage in new experiences and learn by trial and error. To find ways to solve problems and new ways to do things. To test out own ideas. To develop ideas of grouping, sequences, cause and effect. To recognise similarities and differences in relation to places, objects, materials and living things. To comment and ask questions about aspects of their familiar world such as the place where they live or the natural world around them. To closely observe what animals, people and vehicles do. To use senses to observe the world around them. To make links and observe patterns. To choose the resources needed for a chosen activity. To handle equipment and tools effectively. To create simple representations of events, people and objects. To answer how and why questions about their experiences. To make observations of animals and plants and explain why some things occur. To talk about changes.	To explore the world around them and raise their own simple questions. To take part in different types of science enquiries including practical activities. To begin to recognise different ways in which scientific questions can be answered. To carry out simple tests. To use simple features to compare objects, materials and living things and, with support, to decide how to sort and group them. Ask questions and use simple secondary sources to find answers. Observe closely using simple equipment. With support, observe changes over time. With guidance, to begin to notice patterns and relationships. Use simple measurements and equipment such as hand lenses and egg timers to gather data. To record simple data. To use their observations and ideas to suggest answers to questions. To talk about what they have found out and how they found it out. With support, to record and communicate their findings in a range of ways and begin to use simple scientific language.	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To raise their own relevant questions about the world around them. To access a range of scientific experiences including different types of science enquiries to answer questions. To start making their own decisions about the most appropriate type of scientific enquiry they might use to answer questions. To set up simple practical enquiries, comparative and fair tests. To recognise when a simple fair test is necessary and help to decide how to set it up. To talk about criteria for grouping and classifying and use simple keys. To recognise how and when secondary sources might help to answer questions which cannot be answered through practical investigations. To make systematic and careful observations. With support, to decide what observations to make, how long to make them for and the type of simple equipment which might be used. To begin to look for naturally occurring patterns and relationships and decide wat data to collect to identify them. To take accurate measurements using standard units.	To raise their own relevant questions about the world around them. To access a range of scientific experiences including different types of science enquiries to answer questions. To start making their own decisions about the most appropriate type of scientific enquiry they might use to answer questions. To set up simple practical enquiries, comparative and fair tests. To recognise when a simple fair test is necessary and help to decide how to set it up. To talk about criteria for grouping and classifying and use simple keys. To recognise how and when secondary sources might help to answer questions which cannot be answered through practical investigations. To make systematic and careful observations. With support, to decide what observations to make, how long to make them for and the type of simple equipment which might be used. To begin to look for naturally occurring patterns and relationships and decide wat data to collect to identify them. To take accurate measurements using standard units.	To use their experiences of science to explore ideas and raise a variety of questions. To talk about how scientific ideas have developed over time. To select and use the most appropriate type of scientific enquiry in order to answer scientific questions. To recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Use and develop keys and other ways of recording information to identify, classify and describe living things and materials. To identify patterns that might be found in the natural environment. To recognise which secondary sources will be most useful to research ideas and begin to separate opinion from fact. To make their own decisions about what observations to make, what measurements to use and how long to make them for. Look for different casual relationships in their data and identify evidence that supports or refutes their ideas. Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it	To use their experiences of science to explore ideas and raise a variety of questions. To talk about how scientific ideas have developed over time. To select and use the most appropriate type of scientific enquiry in order to answer scientific questions. To recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Use and develop keys and other ways of recording information to identify, classify and describe living things and materials. To identify patterns that might be found in the natural environment. To recognise which secondary sources will be most useful to research ideas and begin to separate opinion from fact. To make their own decisions about what observations to make, what measurements to use and how long to make them for. Look for different casual relationships in their data and identify evidence that supports or refutes their ideas. Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it

To develop their own narratives and explanations by connecting ideas or events. To develop vocabulary that reflects the breadth of their experience.			To learn to use a range of simple equipment such as data loggers and thermometers accurately. To collect and record data from their own measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, diagrams and keys. To help to make decisions about how to analyse this data. With support, to look for changes, patterns, similarities and differences in their data in order to draw conclusions. To use relevant simple scientific language to discuss their ideas and communicate their findings in ways which are appropriate for a variety of audiences, including oral and written explanations, displays and presentation of results. With support, to 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.	To learn to use a range of simple equipment such as data loggers and thermometers accurately. To collect and record data from their own measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, diagrams and keys. To help to make decisions about how to analyse this data. With support, to look for changes, patterns, similarities and differences in their data in order to draw conclusions. To use relevant simple scientific language to discuss their ideas and communicate their findings in ways which are appropriate for a variety of audiences, including oral and written explanations, displays and presentation of results. With support, to 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.	accurately. To repeat measurements where appropriate. To decide how to record data and results of increasing complexity from a choice of familiar approaches: labelled diagrams, classification keys, scatter graphs, tables, bar and line graphs. To identify scientific evidence which has been used to support or refute arguments or ideas. To use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. To use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results. To use their results to make predictions and identify when further observations, comparative and fair tests might be needed.	accurately. To repeat measurements where appropriate. To decide how to record data and results of increasing complexity from a choice of familiar approaches: labelled diagrams, classification keys, scatter graphs, tables, bar and line graphs. To identify scientific evidence which has been used to support or refute arguments or ideas. To use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. To use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results. To use their results to make predictions and identify when further observations, comparative and fair tests might be needed.

Science: Biology
Hollywell Primary School

Specific Focus: Progression of Biology Skills						
Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
To know about similarities and differences in relation to living things. To talk about the features of their own immediate environment and how environments might vary from one another. To make observations of animals and plants and explain why some things occur. To talk about changes. To know that the environment and living things are influenced by human activity. To describe some actions which people in their own community do to help maintain the area they live in. To know the importance of good health, physical exercise and a healthy diet. To talk about ways of keeping healthy and safe. To be able to make healthy choices in relation to diet and exercise.	To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. To identify and name a variety of common animals that are carnivores, herbivores and carnivores. To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). To identify, name, draw and label the basic parts of the human body. To say which part of the body is associated with each sense. To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. To identify and describe the basic structure of a variety of common flowering plants, including trees. To observe changes across the four seasons. To observe and describe weather associated with the seasons and how day length varies.	To notice that animals, including humans, have offspring that grow into adults. To find out about and describe the basic needs of animals, including humans, for survival (water, food and air). To describe the importance for humans of exercise, eating the right amount of different types of food and hygiene. To observe and describe how seeds and bulbs grow into mature plants. To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. To explore and compare the differences between things that are alive, dead and things that have never been alive. To identify that most living things live in habitats to which they are suited. To describe how different habitats provide for the basic needs of different kinds of animals and plants and how they depend on each other. To identify and name a variety of plants and animals in their habitats, including micro-habitats. To describe how animals obtain their food from plants and other animals, using the idea of a simple food chain. To identify and name different sources of food.	To identify that animals, including humans, need the right type and amount of nutrition and that they cannot make their own food; they get nutrition from what they eat. To identify that humans and some other animals have skeletons and muscles for support, protection and movement. To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. To 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. To investigate the way in which water is transported within plants. To explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	To describe the basic parts of the digestive system in humans. To identify the different types of teeth in humans and their simple functions. To construct and interpret a variety of food chains, identifying producers, predators and prey. To recognise that living things can be grouped in a variety of ways. To explore and use classification keys to help group, identify and name a variety of living things in the local and wider environment. To recognise that environments can change and that this can sometimes pose dangers to living things.	To describe the changes as humans develop to old age. To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. To describe the life process of reproduction in some plants and animals.	To identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood. To recognise the impact of diet, exercise, drugs and lifestyle on the way the human body functions. To describe the way in which nutrients and water are transported within animals, including humans. To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. To recognise that living things produce offspring of the same kind although they are not normally identical to their parents. To identify how animals and plants are adapted to suit their environment in different ways and that adaptation might lead to evolution.

Science: Chemistry
Hollywell Primary School

Specific Focus: Progression of Chemistry Skills						
Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
To know about similarities and differences in relation to objects and materials. To know the properties of some materials and to be able to suggest some of the purposes they are used for. To safely use and explore a variety of materials, experimenting with texture, form and function. To explore how media and materials can be combined and changed.	To distinguish between an object and the material from which it is made. To identify and name a variety of everyday materials, including wood, plastic, metal and rock. To describe the simple physical properties of a variety of everyday materials. To compare and group a variety of everyday materials on the basis of their simple physical properties.	To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. To find out how the shape of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	To compare and group different kinds of rocks on the basis of their appearance and simple physical properties. To describe in simple terms how fossils are formed when things that have lived are trapped within rock. To recognise that soils are made from rocks and organic matter.	To compare and group materials according to whether they are solids, liquids or gases. To observe that some materials change state when they are heated or cooled. To measure or research the temperature at which this happens in degrees Celsius. To identify the part played by evaporation and condensation in the water cycle. To associate the rate of evaporation with temperature.	To compare and group everyday materials on the basis of their properties, including hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets. To know that some materials will dissolve in liquid to form a solution. To describe how to recover a substance from a solution. To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. To give reasons, based on comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. To 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 type of change is not usually reversible. This includes changes associated with burning and the action of acid on bicarbonate of soda.	

Science: Physics
Hollywell Primary School

Specific Focus: Progression of Physics Skills						
Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
To be familiar with basic scientific concepts such as floating and sinking.			To recognise that we need light in order to see things and that dark is the absence of light. To notice that light is reflected from surfaces. To recognise that light from the sun can be dangerous and that there are ways to protect their eyes. To recognise that shadows are formed when the light from a light source is blocked by a solid object. To find patterns in the way the size of shadows change. To compare how things move on different surfaces. To notice that some forces need contact between two objects but magnetic forces can act at a distance. To observe how magnets attract or repel each other and attract some materials and not others. To compare and group a variety of everyday materials on the basis of whether they are attracted to a magnet. To identify some magnetic materials. To describe magnets as having two poles. To predict whether two magnets will attract or repel each other, depending on which pole they are facing.	To identify common appliances that run on electricity. To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. To identify whether 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. To recognise that a switch opens and closes a circuit. To associate this with whether or not a lamp lights in a simple series circuit. To recognise some common conductors and isolators. To associate metals with being good conductors. To identify how sounds are made, associating some of them with something vibrating. To recognise that vibrations from sounds travel through a medium to the ear. To find patterns between the pitch of a sound and features of the object that produced it. To find patterns between the volume of a sound and the strength of the vibrations that produced it. To recognise that sounds get fainter as the distance from the sound source increases.	To describe the movement of the Earth and other planets in relation to the Sun in the solar system. To describe the movement of the Moon in relation to the Earth. To describe the Sun, Earth and Moon as approximately spherical bodies. Use the concept of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. To identify the effects of air resistance, water resistance and friction as they act between moving surfaces. To recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a circuit. To 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. To use recognised symbols when representing a circuit in a diagram. To recognise that light appears to travel in straight lines. To use the concept that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. To 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. To use the concept that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.