St John Fisher RC Primary School
Science Skills Progression

	ANIMALS, INCLUDING HUMANS	EVERYDAY MATERIALS	PLANTS	SEASONAL CHANGES	WORKING SCIENTIFICALLY
REC	• Explores the natural world around him/her. • Describes what he/she can see, hear and feel whilst outside. • Recognises some environments that are different to the one in which he/she lives. • Explores the natural world around him/her, making observations and drawing pictures of animals and plants. • Begins to understand the life cycle of a caterpillar/butterfly/frog. • Knows five facts about a particular animal.	• Explores the natural world around him/her. • Describes what he/she can see, hear and feel whilst outside. • Knows some similarities and differences between the natural world around him/her and contrasting environments, drawing on his/her experiences and what has been read in class. • Begins to understand changing state e.g. when we mix ingredients to make bread or pancakes.	• Explores the natural world around him/her. • Describes what he/she can see, hear and feel whilst outside. • Recognises some environments that are different to the one in which he/she lives. • Explores the natural world around him/her, making observations and drawing pictures of animals and plants. • Knows some similarities and differences between the natural world around him/her and contrasting environments, drawing on his/her experiences and what has been read in class. • Can label parts of the plants.	• Understands some important processes and changes in the natural world around him/her, including the seasons and changing states of matter. • Describes what he/she can see, hear and feel whilst outside. • Understands the effect of changing seasons on the natural world around him/her. • Knows some signs that mean Spring is starting. • Explains facts about the season of winter/autumn/spring/summer e.g. how we might dress, what it looks like outside.	• Understands some important processes and changes in the natural world around him/her, including the seasons and changing states of matter. • Knows where is the best place for a plant to grow. • Uses magnifiers to explore plants and seeds. • Looks after seeds – plant beans. • Uses cameras to record growth • Investigates whether some objects sink or float.
Y1	• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • Group animals according to what they eat. • Identify and name a variety of common animals that are carnivores, herbivores and omnivores. • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. **Exceeding Expectations** • Classify animals according to a number of given criteria. • Say why certain animals have certain characteristics. • Sort some animals on a simple branching diagram with features such as meat eaters and non-meat eaters; swim and cannot swim	• Distinguish between an object and the materials 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. **Exceeding Expectations** • Explain what happens to certain materials when they are heated or cooled, for example, bread, ice, chocolate, jelly etc.	• Identify and describe the basic structure of a variety of common flowering plants, including trees. • Identify and name a range of common wild and garden plants and trees, including deciduous and evergreen trees. **Exceeding Expectations** • Sort some plants by those that can be eaten and those that cannot.	• Observe changes across the four seasons. • Observe and describe weather associated with seasons and how day length varies.	• Ask simple questions and recognise that they can be answered in different ways. • Use simple equipment to observe closely. • Perform simple tests. • Identify and classify. • Use his/her observations and ideas to suggest answers to questions. • Gather and record data to help in answering questions. **Exceeding Expectations** • Find out by watching, listening, tasting, smelling and touching. • Talk about similarities and differences. • Explain what I have found out using scientific vocabulary.

	ANIMALS, INCLUDING HUMANS	EVERYDAY MATERIALS	PLANTS	SEASONAL CHANGES	WORKING SCIENTIFICALLY
Y2	• Understand that animals, including humans, have offspring which grow into adults. • 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.	• Identify and compare the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. **Exceeding expectations** • Describe the properties of different materials using words like transparent or opaque, flexible etc. • Say which materials are natural and which are manmade. • Tell which materials cannot be changed back after being heated, cooled, bent, stretched or twisted.	• Observe and describe how seeds and bulbs grow into mature plants. • Describe how plans need water, light and suitable temperature to grow and stay healthy, and describe the impact of changing these. **Exceeding expectations** • Describe what plants need to survive and link it to where they are found.	• 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. • Identify and name a variety of plants and animals in their habitats, including micro-habitats. • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. **Exceeding Expectations** • Name some characteristics of an animal that help it to live in a particular habitat. • Describe what animals need to survive and link this to their habitats. • Classify living things into groups according to a range of criteria they have been given.	• Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum. • Use simple equipment to observe closely including changes over time. • Communicate his/her ideas, what he/she does and what he/she finds out in a variety of ways. • Perform simple comparative tests. • Identify, group and classify. • Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns. • Gather and record data to help in answering questions including from secondary sources of information. **Exceeding expectations** • Suggest whether things happened as they expected and if not why. • Use information from books and online information to find things out.

	ANIMALS, INCLUDING HUMANS	FORCES AND MAGNETS	PLANTS	LIGHT	ROCKS	WORKING SCIENTIFICALLY
Y3	• 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. **Exceeding expectations** • Explain how the muscular and skeletal systems work together to create movement. • Classify living things and non-living things by a number of characteristics that they have thought of. • Explain how certain living things depend on one another to survive.	• 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. **Exceeding expectations** • Investigate the different strengths of different magnets and find fair ways to compare them.	• Identify and describe the functions of different parts of flowering plants, for e.g. 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 a flowering plant, including pollination, seed formation and seed dispersal. **Exceeding expectations** • Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	• Recognise that we 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 my 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 sizes of the shadows change. **Exceeding expectations** • Explain why lights need to be brighter or dimmer according to need. • Explain why their shadow changes when the light source is moved closer or further from the object.	• 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 of rocks and organic matter. **Exceeding expectations** • Begin to relate the properties of rocks with their uses.	• Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Gather, record, classify and present data in a variety of ways to help in answering questions. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Use straightforward scientific evidence to answer questions or to support his/her findings. **Exceeding expectations** • Record and present what I have found using scientific language, drawings, labelled diagrams, bar charts and tables. • Use my findings to draw a simple conclusion.

	ANIMALS, INCLUDING HUMANS	ELECTRICITY	LIVING THINGS AND THEIR HABITATS	SOUND	STATES OF MATTER	WORKING SCIENTIFICALLY
Y4	• Describe the simple functions of the basic parts of the digestive system in humans. • Identify the different types of human teeth and their simple functions. • Construct and interpret a variety of food chains, identifying producers, predators and prey.	• 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. **Exceeding expectations** • Recognise if all metals are conductors of electricity. • Work out which metals can be used to connect across a gap in a circuit.	• 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 my local and wider environment. • Recognise that environments can change and this can sometimes pose dangers and have an impact on living things. **Exceeding expectations** • Explain how people, weather and the environment can affect living things. • Explain how certain living things depend on one another to survive.	• 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 patters 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.	• 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. • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	• Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Gather, record classify and present data in a variety of ways to help in answering questions. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. • Report on findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Use straightforward scientific evidence to answer questions or to support his/her findings. **Exceeding expectations** • Plan and carry out scientific enquiry by controlling variables fairly and accurately. • Use test results to make further predictions and set up further comparative tests. • Record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models. • Report findings from scientific enquiries through written explanations and conclusions.

	ANIMALS, INCLUDING HUMANS	FORCES	LIVING THINGS AND THEIR HABITATS	EARTH AND SPACE	PROPERTIES AND CHANGES OF MATERIALS	WORKING SCIENTIFICALLY
Y5	• Describe the changes as humans develop to old age.	• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and falling objects. • 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. **Exceeding expectations** • Describe and explain how motion is affected by forces, for example, including gravitational attractions, magnetic attraction and friction. • Work out how water can cause resistance to floating objects.	• 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. **Exceeding expectations** • Create a timeline to show stages of growth in certain animals, such as frogs and butterflies. • Observe my local environment and draw conclusions about life-cycles, for example, the vegetable garden or plants in a shrubbery.	• 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 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. **Exceeding expectations** • Compare the time or day at different places on the earth.	• 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. • Recognise that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. • Use my knowledge of solids, liquids 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 materials, including metals, wood and plastic. • Demonstrate that dissolving, mixing and changes of state are reversible changes. • Explain that some changes result in 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. **Exceeding expectations** • Describe methods for separating mixtures, for example, filtration and distillation.	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Use test results to make further predictions and set up further comparative tests. • Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. • Identify scientific evidence that has been used to support or refute ideas or arguments. **Exceeding expectations** • Explore different ways to test an idea, choose the best way and give reasons. • Vary one factor whilst keeping the others the same in an experiment. • Use information to help make a prediction. • Explore (in simple terms) a scientific idea and what evidence supports it.

	ANIMALS, INCLUDING HUMANS	ELECTRICITY	LIVING THINGS AND THEIR HABITATS	LIGHT	EVOLUTION AND INHERITANCE	WORKING SCIENTIFICALLY
Y6	• 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. • Describe the ways in which nutrients and water are transported within animals, including humans. **Exceeding expectations** • Make a diagram of the human body and explain how different parts work and depend on one another. • Compare the organ systems of humans to other animals.	• 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 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. **Exceeding expectations** • Explain the danger of short circuits and what a fuse is.	• 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. **Exceeding expectations** • Explain how some living things adapt to survive in extreme conditions. • Analyse the advantages and disadvantages of specific adaptations, such as being on two rather than four feet. • Begin to understand what is meant by DNA. • Readily group animals into reptiles, fish, amphibians, birds and mammals.	• 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. **Exceeding expectations** • Use the ray model to explain the size of shadows.	• 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.	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Use test results to make further predictions and set up further comparative tests. • Report and present findings from enquiries, including conclusions, causal relationships and explanations of a degree of trust in results, in oral and written forms such as displays and other presentations. • Identify scientific evidence that has been used to support or refute ideas or arguments. • Describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources. • Group and classify things and recognise patterns. • Find things out using a wide range of secondary sources of information. • Use appropriate scientific language and ideas from the national curriculum to explain, evaluation and communicate his/her methods and findings. **Exceeding expectations** • Use information from different sources to answer a question and plan a scientific enquiry. • Make a prediction which links with other scientific knowledge. • Plan in advance which equipment they will need and use it well.

						• Link their conclusions to other scientific knowledge.