

Science Skills Progression Document

Skill:	Work Scientifically	Biology	Chemistry	Physics
	Work scientifically This concept involves learning the methodologies of the discipline of science	Understand plants This concept involves becoming familiar with different types of plants, their structure and reproduction Understand animals and humans This concept involves becoming familiar with different types of animals, humans and the life processes they share Investigate living things This concept involves becoming familiar with a wider range of living things, including insects and understanding life processes Understand evolution and inheritance This concept involves understanding that organisms come into existence, adapt, change and evolve and become extinct	Investigate materials This concept involves becoming familiar with a range of materials, their properties, uses and how they may be altered or changed	Understand movement, forces and magnets This concept involves understanding what causes motion Understand light and seeing This concept involves understanding how light and reflection affect sight Investigate sound and hearing This concept involves understanding how sound is produced, how it travels and how it is heard Understand electrical circuits This concept involves understanding circuits and their role in electrical applications Understand the Earth's movement in space This concept involves understanding what causes seasonal changes, day and night
Year Group				
EYFS	- Ask simple questions - Make comments and observations	Living Things - Children know about similarities and differences between living things - Children can talk about features of their own environment.	Materials - Children know about similarities and differences between materials. - Children can carry out experiments to explore the concept of floating and sinking.	Seasons Children can talk about changes that are created in their local environment by the changes of season.

		- Children can describe the environment of the forest and name some animals that live there. - Children can describe how environments may vary from one another. - Children can make observations of animals and plants.	- Children know and can describe the properties of some materials. - They can name some of the purposes some materials are used for.	
1	- Ask simple questions and recognise they may be answered in different ways - Observe closely - Identify and classify - Gather and record data.	Plants - Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. - Identify 5 plants or trees that they regularly see in the forest. - Identify and describe the basic structure of common flowering plants. - Observe and describe how seeds and bulbs grow into mature plants. - Find out and describe how plants need water, light and a suitable temperature to grow. Animals including humans - Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals. - Identify and name animals that are carnivores, omnivores and herbivores. - Study and categorise 5	Materials - Distinguish between an object and the material from which it is made. - Identify and name a variety of everyday materials. - 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. - Identify materials in the natural environment.	Seasons - Observe changes across the four seasons. - Observe and describe the weather associated with different seasons. - Describe how the day length varies in different seasons. - Observe and describe how the forest school environment is affected by the seasons.

		animals that they see in the woods. - Describe and compare the structure of a variety of animals. - Identify, name, draw and label the basic parts of the human body and say which part is associated with which sense.		
2	- Perform simple tests. - Ask questions. - Observe closely, using simple equipment. - Use observations and ideas to suggest answers to questions. - Gather and record data to help in answering questions.	Living things and their habitats. - Explore and compare the differences between things that are living, dead and never alive. - Identify how most living things are adapted to their habitats. - Recognise habitats within the woods environment, describe how different habitats provide for the basic needs of the different animals and how they depend on each other. - Identify and name a variety of plants and animals, including micro-habitats. - Describe how animals obtain food from plants and other animals. - Create simple food chains. - Look for food sources, prey and predators in the woods. Plants	Materials - Identify and compare the suitability of a variety of everyday materials for particular uses. - Find out how the shapes of solid objects made from some materials can be changed by squishing, bending, twisting and stretching. - Use the resources available in the woods to set up an experiment which assesses the suitability of different materials.	

		- Identify 8 different plants or trees in the forest. Animals including humans - Notice that animals (including humans) have offspring which grow into adults. - Name the animals and their babies that are found in our local environment. - Find out about the basic needs of animals and humans - Describe the importance of exercise, hygiene and diet.		
3	- Ask relevant questions. - Set up simple, practical enquiries. - Make accurate measurements using a range of equipment (e.g. thermometers). - Gather and record data in a variety of ways. - Record findings using simple scientific language, drawings and labelled diagrams. - Report on findings from enquiries. - Use results to draw simple conclusions. - Use straightforward, scientific evidence to answer questions or to support their findings.	Plants - Identify and describe the functions of different parts of a plant. - Explore the requirements of plants for life and growth and describe how they vary from plant to plant. - Investigate the way water is transported around a plant. - Explore the life cycle of a plant. - Identify and name 10 different plants or trees in the forest. Living things - Recognise that living things can be grouped in a variety of ways. - Explore and use		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 different surfaces. - Recognise that light from the sun can be dangerous and that there are ways to protect our eyes. - Recognise how shadows are formed when the light from the source is blocked by a solid object. - Find patterns in the way that shadows change. - Understand that light appears to travel in straight lines. - Use the concept of light travelling in straight lines to explain that we can see objects because they give out or reflect light into our eyes. - Explain that shadows have the same shape as the object that cast them

		classification keys. • Use classification keys in the local area and also in the wider environment. • Recognise that environments can change and describe the dangers this can pose.		based on their knowledge of light travelling in straight lines. • Predict what will happen to shadows when the position of the light source changes. Electricity • Identify common appliances that run on electricity. • Construct a simple series circuit identifying all of the basic parts. • Identify whether or not a lamp will light based on whether or not it is part of a complete loop with a battery. • Recognise that a switch opens and closes a circuit. • Recognise some common conductors and insulators and associate metals with being good conductors. • Associate the brightness of a lamp with the number and voltage of the cells in the circuit. • Compare and give reasons for variations in how components function. • Use recognised symbols when representing a simple circuit in a diagram.
4	• Ask relevant questions which draw upon their previous learning. • Set up comparative and fair tests. • Make accurate measurements using standard units, using a range of equipment including data loggers, • Gather, record, classify and present data in a	Animals • Identify that animals, including humans, need the right types and amounts of nutrition, that they cannot make their own food and that they get nutrition from what they eat. • I can use the acronym MRS GREN to describe what animals need to	Rocks and Soils • Compare and group together different kinds of rocks based on their simple, physical properties. • Relate the simple physical properties of some rocks to their formation (igneous and sedimentary). • Describe in simple terms how fossils are formed	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

	variety of ways to help in answering questions. - Record findings in a range of ways including bar charts and tables. - Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. - Use results to suggest improvements, new questions and predictions for setting up further tests. - Identify differences, similarities or changes related to simple, scientific ideas and processes.	live. - I can construct and interpret a variety of food chains, identifying producers, prey and predators. - Identify that humans and some animals have skeletons and muscles for support, protection and movement. - Describe the simple functions of basic parts of the digestive system in humans. - Identify the different types of teeth in humans and their simple functions.	when things that have lived are trapped within sedimentary rocks. Recognise that soils are made from rocks and organic matter.	vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases.
5	- Plan enquiries - Use appropriate apparatus and materials during laboratory work. - Take measurements, using a range of scientific equipment with increasing accuracy and precision. - Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. - Report findings from enquiries drawing conclusions. - Present findings in written form. - Use test results to make	Living things - 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 how living things are classified into broad groups according to common observable characteristics. - Give reasons for classifying plants and animals based on specific characteristics.	States of Matter - Compare and group together materials according to whether they are solids, liquids or gases. - Observe that some materials change state when they are heated or cooled and measure the temperatures at which this happens. - Identify the part played by evaporation and condensation in the water cycle. - Use knowledge of solids, liquids and gases to decide how mixtures might be separated (sieving,	Forces and Magnets - Compare how things move on different surfaces. - Notice that some forces need contact between two objects but magnetic forces can work at a distance. - Observe how magnets attract and repel each other; attract some materials and not others. - Compare and group materials based on whether or not they are attracted to a magnet. - Describe magnets as having two poles. - Predict whether two magnets will attract or repel each other based on which poles are facing. - Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the

	predictions. Use simple models to describe scientific ideas.		filtering, and evaporating). - Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials including metals, woods 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 these changes are not usually reversible.	Earth and the falling object. - Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces. - Understand that force and motion can be transferred through mechanical devices such as gears, levers and pulleys. - Understand that some mechanisms including levers, pulleys and gears, allow a smaller force to have a greater effect.
6	- Plan enquiries, including recognising and controlling variables where necessary. - Use appropriate techniques, apparatus, and materials during fieldwork and lab work. - Take measurements, using a range of scientific equipment, with increasing accuracy. - Record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, bar and line graphs and models. - Report findings from enquiries, including oral and written explanations of results, explanations involving casual relationships and conclusions.	Animals - Describe the changes as humans develop to old age. - Identify and name the main parts of the circulatory system, and describe the functions of the heart, blood vessels and blood. - Recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions. - Describe the ways in which nutrients and water are transported within animals, including humans. Evolution - Recognise that living things have changed over time and that fossils provide information		Space - Describe the movement of the Earth, and other planets, relative to the Sun and 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.

	• Present findings in written form, displays and other presentations. • Use test results to make predictions to set up further comparative and fair tests. • Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.	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. • Relate knowledge of plants to studies of evolution and inheritance.		
--	--	--	--	--

Note: As we have mixed classes at Chirton we teach science on a two year rolling programme. Although the working scientifically statements are worked through in order the biology, chemistry and physics statements may be taught out of the year group. The rolling programme means that the Year 1/2, 3/4 and 5/6 topics may be taught in a different order. Please see the 'Science 2 year rolling programme' for more information.