

Pinvin C.E. First School

Science Skills and Understanding Progression Chart

Adapted from
Rising Stars (2014)
FOCUS Education

	NC STRAND BIOLOGY-Animals including Humans	NC STRAND BIOLOGY-Plants	NC STRAND BIOLOGY-Living things and their habitat	NC STRAND CHEMISTRY	NC STRAND PHYSICS	NC STRAND WORKING SCIENTIFICALLY Planning and conducting experiments	NC STRAND WORKING SCIENTIFICALLY Recording and reporting	NC STRAND WORKING SCIENTIFICALLY Conclusions and predictions
Year 1	<p>By the end of Year 1, pupils should be able to:</p> <ul style="list-style-type: none"> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. 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 	<p>By the end of Year 1, pupils should be able to:</p> <ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. Explore and compare the differences between things that are living, dead, and things that have never been alive 	<p>By the end of Year 1, pupils should be able to:</p> <p>No Content for Y1</p>	<p>By the end of Year 1, pupils should be able to:</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>By the end of Year 1, pupils should be able to:</p> <ul style="list-style-type: none"> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies 	<p>By the end of Year 1, pupils should be able to:</p> <ul style="list-style-type: none"> Ask simple questions when prompted. Suggest ways of answering a question. Make relevant observations Conduct simple tests with support. 	<p>By the end of Year 1, pupils should be able to:</p> <ul style="list-style-type: none"> With prompting, suggest how findings could be recorded. Recognise findings. 	<p>By the end of Year 1, pupils should be able to:</p> <ul style="list-style-type: none"> Gather and record data. Use observations to suggest answers to questions

Year 2	<p>By the end of Year 2, pupils should be able to:</p> <ul style="list-style-type: none"> Notice that animals, including humans, have offspring which grow into adults. Find out about and 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. 	<p>By the end of Year 2, pupils should be able to:</p> <ul style="list-style-type: none"> 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 and stay healthy. 	<p>By the end of Year 2, pupils should be able to:</p> <ul style="list-style-type: none"> 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. 	<p>By the end of Year 2, pupils should be able to:</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. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. 	<ul style="list-style-type: none"> By the end of Year 2, pupils should be able to: <p>No Content for Y2</p>	<p>By the end of Year 2, pupils should be able to:</p> <ul style="list-style-type: none"> Ask simple questions. Recognise that questions can be answered in different ways. Observe closely, using simple equipment. Perform simple tests. 	<p>By the end of Year 2, pupils should be able to:</p> <ul style="list-style-type: none"> Record and communicate their findings in a range of ways and begin to use simple scientific language. Identify and group key outcomes from enquiry. 	<p>By the end of Year 2, pupils should be able to:</p> <ul style="list-style-type: none"> Gather and record data to help answer questions. Use their observations and ideas to suggest answers to questions.
--------	---	---	---	--	--	--	---	--

Year 3	<p>By the end of Year 3, pupils should be able to:</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 animals have skeletons and muscles for support, protection and movement. 	<p>By the end of Year 3, pupils should be able to:</p> <ul style="list-style-type: none"> 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. Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. 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>By the end of Year 3, pupils should be able to:</p> <p>No Content for Y3</p>	<p>By the end of Year 3, pupils should be able to:</p> <ul style="list-style-type: none"> 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. Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. 	<p>By the end of Year 3, pupils should be able to:</p> <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 attract or repel each other, depending on which poles are facing. LIGHT Recognise that they need light in order to see 	<p>By the end of Year 3, pupils should be able to:</p> <ul style="list-style-type: none"> Ask relevant questions when prompted. Set up simple and practical enquiries, comparative and fair tests. Set up comparative tests. Make systematic observations, using simple equipment. Use standard units when taking measurements. 	<p>By the end of Year 3, pupils should be able to:</p> <ul style="list-style-type: none"> Record findings in various ways. With prompting, suggest how findings may be tabulated. With prompting, use various ways of recording, grouping and displaying evidence. With prompting, suggest conclusions from enquiries. Suggest how findings could be reported. 	<p>By the end of Year 3, pupils should be able to:</p> <ul style="list-style-type: none"> Gather and record data about similarities, differences and changes. With prompting, suggest conclusions that can be drawn from data. Suggest possible improvements or further questions to investigate.
--------	--	--	---	---	--	--	---	--

					<p>things and that dark is the absence of light.</p> <ul style="list-style-type: none">• 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 a solid object.• Find patterns in the way that the size of shadows change.			
--	--	--	--	--	---	--	--	--

Year 4	<p>By the end of Year 4, pupils should be able to:</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>By the end of Year 4, pupils should be able to:</p>	<p>By the end of Year 4, pupils should be able to:</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 and that this can sometimes pose dangers to living things. 	<p>By the end of Year 4, pupils should be able to:</p> <ul style="list-style-type: none"> Compare and group materials together, according to whether they are solids, liquids or gases. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 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. 	<p>By the end of Year 4, pupils should be able to:</p> <ul style="list-style-type: none"> Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Recognise that sounds get fainter as the distance from the sound source increases. 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. <p>ELECTRICITY</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, 	<p>By the end of Year 4, pupils should be able to:</p> <ul style="list-style-type: none"> Ask relevant questions. Plan different types of scientific enquiries to answer questions. Set up simple and practical enquiries, comparative and fair tests. Make systematic and careful observations using a range of equipment, including thermometers and data loggers. Take accurate measurements using standard units, where appropriate. 	<p>By the end of Year 4, pupils should be able to:</p> <ul style="list-style-type: none"> Record findings using simple scientific language, drawings and labelled diagrams. Record findings using keys, bar charts, and tables. Gather, record, classify and present data in a variety of ways to help to answer questions. Report on findings from enquiries, including oral and written explanations, of results and conclusions. Report on findings from enquiries using displays or presentations. 	<p>By the end of Year 4, pupils should be able to:</p> <ul style="list-style-type: none"> Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support their findings. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
--------	---	--	--	---	--	---	---	---

					<p>including cells, wires, bulbs, switches and buzzers.</p> <ul style="list-style-type: none"> • Recognise some common conductors and insulators, and associate metals with being good conductors. • 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. 			
	<p>By the end of Reception, pupils should be able to: Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.</p>							

