**Assessment Expectations in Science**

**Expected Standard**

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| **A Year 1 scientist can:** |
| Name a variety of common plants and know the basic structure of plants and trees. Begin to talk about the different groups of animals (*amphibian, reptile, mammal, bird, fish*) and use the terms *carnivore*, *herbivore* and *omnivore*. Describe the basic structure of the body of animals/humans and match senses to the appropriate body parts. Distinguish between objects and the materials from which they are made, recognising a range of common materials and using simple vocabulary to describe the physical properties e.g. *hard*, *soft*, *stretchy*. Identify changes across the four seasons, including the weather and how day length varies.  Use a range of vocabulary, including: *carnivore, herbivore, omnivore, petal, stem, roots, sight, material, properties.* |
| **Working scientifically** |
| Ask simple questions and recognise how they can be answered in different ways Compare plants and animals at first hand or through videos and photographs. Describe how to identify and group materials and plants. Use the senses to compare different textures, sounds and smells. Make tables and charts about the weather. Observe change over time e.g. across the seasons and plant growth. Observe closely e.g. root structures of plants, using simple equipment e.g. magnifying glasses. |
| **A Year 2 scientist can:** |
| Describe how humans can lead a healthy lifestyle (exercise, diet, hygiene). Describe the basic needs of animals, including humans, for survival. Notice that animals have offspring which grow into adults. Name things that are living, dead and have never been alive. Explain what living things need to survive. Name a variety of plants and animals in their habitats, including microhabitats and talk about how animals are suited to their habitat. Understand simple food chains. Describe how seeds and bulbs grow into mature plants and explain what plants need to grow and stay healthy. Identify and compare the suitability of a variety of everyday materials and find out how the shapes of solid objects made from some materials can be changed.  Use a range of vocabulary, including: *investigate*, *hygiene*, *offspring,* *habitat, microhabitat,* *life cycle*, carbohydrates, *predator*, *germination*, *transparent*, *waterproof.* |
| **Working scientifically** |
| Observe through video or first-hand observation and measurement e.g. how different animals, including humans, grow. Ask simple questions e.g. about what animals need for survival and what humans need to stay healthy. Sort and classify and record simple data in a range of ways (e.g. prepared table, take photos, pictorially, simple charts). Observe changes over time. Perform simple comparative tests, using simple equipment. Talk about findings from relevant enquiries (including research) to help them to answer questions. |
| **A year 3 scientist can:** |
| Describe the function of different parts of flowering plants and trees and talk about the life cycle of a flowering plant. Explain the importance of a nutritious, balanced diet. Identify that humans and some other animals have skeletons and muscles for support, protection and movement. Compare and group rocks based on their simple physical properties and appearance. Know how soil is made and describe in simple terms how fossils are formed. Recognise that light is needed in order to see things and that dark is the absence of light. Know that light is reflected from surfaces. Talk about how shadows are formed. Compare how things move on different surfaces. Identify the two poles on a magnet and investigate how magnets attract or repel each other. Identify some magnetic materials.  Use a range of vocabulary, including: *function, transports, force, repel, poles, nutrients, pollination, fossils, fair test.* |
| **Working scientifically** |
| Ask relevant questions. Plan and carry out a comparative fair test and use results to draw simple conclusions. Gather, record, classify and present data in a variety of ways to help in answering questions. Use straightforward scientific evidence to answer questions or support their findings. Record findings using simple scientific language, drawings, labelled diagrams and tables. |
| **A year 4 scientist can:** |
| Group materials based on their state of matter. Understand how materials change state and know the temperature at which this happens. Identify the part played by evaporation and condensation in the water cycle. Identify common appliances that use electricity. Construct and make a simple series circuit and identify the components. Predict and test whether a lamp will light in a circuit and know the basic functions of a switch. Recognise some differences between conductors and insulators. Identify how sounds are made and how sound travels from a source to our ears. Talk about how pitch and volume can be changed. Explain how sound changes as the distance from the source increases. Use classification keys to help group, identify and name living things. Describe the functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and describe their functions. Construct and interpret a variety of food chains, identifying producers, predators and prey. Know how changes to an environment could endanger living things.  Use a range of vocabulary, including: *solids, liquids, gases, water vapour, vibrations, particles, circuit, cells.* |
| **Working scientifically** |
| Ask relevant questions and set up simple practical scientific enquiries to answer them. Record, classify and present data in a variety of ways to help answer questions and draw simple conclusions. Make systematic and careful observations and take accurate measurements, where appropriate, using standard units, using a range of equipment. Use straightforward scientific evidence to answer questions or support their findings. Record findings using simple scientific language, drawings, keys labelled diagrams and tables. Observing patterns e.g. bulbs get brighter if more cells are added. |
| **A year 5 scientist can:** |
| Compare and group materials based on their properties. Explain the process of dissolving and know how to recover a substance from a solution. Explain how some materials can be separated and explain that some changes are reversible. Know what gravity is and explain its impact. Identify and explain the effect of friction, air resistance and water resistance. Explain how levers, pulleys and gears allow a smaller force to have a greater effect. Explain the movement of Earth and other planets in relation to the sun. Explain the orbit of the moon and describe the shape of the Earth, sun and moon. Explain how day and night are created. Describe the life cycle of a mammal, amphibian, insect and bird. Describe the process of reproduction in some plants and animals. Talk about some of the changes as humans develop to old age.  Use a range of vocabulary, including: *solution, substance, mixture, change of state, reversible, transparent, reproduce, fertilise, puberty, variables.* |
| **Working scientifically** |
| Observe and compare. Plan different types of enquiries to answer questions, including recognising and controlling variables if necessary. Carry out a comparative and fair test. Identify scientific evidence that has been used to support or refute ideas. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Use test results to make predictions to set up further comparative and fair tests. Report and present findings from enquiries, in oral and written forms. |
| **A year 6 scientist can:** |
| Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Explain how nutrients are transported in animals. Understand the impact of diet, exercise, drugs and lifestyle on health. Draw circuit diagrams using the correct symbols. Compare and give reasons for why components work or don’t work in a circuit. Explain how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer. Explain how living things have changed over time and how fossils can be used to explain the past. Talk about reproduction and offspring. Explain how animals and plants adapt to suit their environment and link adaptation over time to evolution. Classify living things into broad groups, giving reasons. Explain how light travels and demonstrate how humans see objects. Understand why shadows have the same shape as the object that cast them.  Use a range of vocabulary, including: *digestive system, veins, blood vessels, circulation, voltage, components, evolution, variation, adaptation, micro-organisms* |
| **Working scientifically** |
| Raise questions and decide how to answer them. Record data and results of increasing complexity e.g. using scientific diagrams and labels, classification keys, tables and graphs. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms. Find things out using a wide range of secondary sources of information. Plan different types of scientific enquiries to answer questions, including recognising and controlling variables. |