**Science Skills and Knowledge Progressions for Year 4**

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| **Skills Objectives** | | Topic covered in | Pupils Working Towards Expectations | Pupils Exceeding Expectations |
| Observe and explain | - from observations, develop their own explanations using scientific vocabulary  - observe and record changes over time  - explain the relationship between structure and function e.g. describe how a duck’s feet are adapted to swimming |  |  |  |
| Grouping and classifying | - Use guides or simple keys to classify and identify, including for living things in their local environment  - Begin to give reasons for similarities and differences (e.g. Why do these animals all have fur but these have scales?)  - Record similarities and differences for objects, living things and processes (e.g. different food chains) |  |  |  |
| Questioning | -Raise their own relevant questions that can be observed or tested  -Ask questions such as “What if we tried…?” “What if we changed…?”  -Select a relevant question that can be answered by an experiment |  |  |  |
| Planning and predict | -Help to decide how to set up a simple fair test and begin to recognise when a test is not fair  -Make some of the planning decisions about what to change and measure/observe  -Using their scientific knowledge, make an informed prediction |  |  |  |
| Test and use equipment | -Carry out a simple, fair test with increasing confidence  - Make decisions about the type of simple equipment that might be used  -Recognise obvious risks and how to keep themselves safe  -Make simple, accurate measurements using whole number standard units using a range of equipment (including thermometers, measuring syringes, measuring cylinders, reading scales) |  |  |  |
| Reporting and recording | - Record and present findings using relevant scientific language (from Year 4 PoS) in a variety of ways.  -Produce annotated, pictorial representations  -Record findings using tables, bar charts etc. with intervals agreed through discussion |  |  |  |
| Analysing and explaining results | -Notice or find patterns in their observations and data (As I lengthen the ruler, the pitch gets lower)  -Draw a conclusion , relating it back to their original prediction  -Write an explanation of why something happened |  |  |  |
| Evaluating | -Use results to suggest improvements, new questions and/or predictions for further tests.  -Compare their results with others and give reasons why they might be different. |  |  |  |

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| **Knowledge Objectives** | | Topic covered in | Pupils Working Towards Expectations | Pupils Exceeding Expectations |
| Living things and their habitats | -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. |  |  |  |
| Animals including humans | -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 |  |  |  |
| States of matter | -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 (°C)  -identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. |  |  |  |
| 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 vibrations that produced it  -recognise that sounds get fainter as the distance from the sound source increases. |  |  |  |
| Electricity | -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. |  |  |  |