

# Science Skills Ladder

Skills ladders show the disciplinary knowledge that children will learn in the subject.



## Working Scientifically (Scientific Enquiry):

Strand	EYFS		Y1	Y2
	EYFS have ample opportunities to explore science within the continuous provision environment via play and exploration as well as adult directed activities. Scientific learning comes under 'The World' section of the EYFS framework.		During <b>Years 1 and 2</b> , pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the National Curriculum content.	
	<b>F1/Nursery</b>	<b>F2/Reception</b>		
<b>Questioning</b>	I can ask short, direct and simple questions directed by an adult.	I can ask questions in more detail primarily prompted by adults and starting to think of my own simple question.	I can ask simple questions more independently and recognise that they can be answered in different ways (by the teacher, friends). I can raise a question of my own based on scientific learning.	I can confidently ask questions (written too) and recognise that they can be answered in more different ways (by scientists, texts, websites directed by the teacher). I can raise more than one question of my own on scientific learning to think more in depth.
<b>Experiments</b>	I can use materials to create an item mostly adult directed. I can experiment with a small number of basic equipment e.g. floating and sinking in a water tray using two items (pebble and cork piece). Which one floats? Which one sinks?	I can use a variety of materials to create different things with more independence and child initiated ideas. I can experiment with different equipment and perform simple experiments in more detail e.g. floating and sinking using a water tray with several items to compare (sponge, stone, shell, cork, boat) or melting ice in different ways.	I can perform simple tests (change one variable) e.g. Growing plants with more/less light with support from an adult. I can carry out tests on different materials to assess their suitability for certain things e.g. waterproof materials would make good umbrellas.	I can perform tests in further detail (change one or more variable) with equipment given and more independently in small groups, teacher modelled e.g. plant different types of seeds and explain the growth/change the amount of water AND light for some seeds to grow and explain the results.
<b>Observing</b>	I can observe weather in basic terms in the local environment. I can state whether it is raining, snowing, hot or cold. I can use a small number of simple equipment to observe living things and materials e.g. large magnifying glasses. I can observe changes in living things via a simple life cycle.	I can observe the weather via the local environment in more detail (is it cloudy, foggy). I can use different sized magnifying glasses/insect pouters to look more closely at details relating to living things and materials. I can observe changes in living things – two animal life cycles.	I can observe closely, using simple equipment- multi lensed magnifying glasses and also using touch and smell. I can observe more stages of change in living things – animal life cycles with more than 4 stages.	To observe closely using more types of equipment- multi lensed magnifying glasses, test tubes, pipettes and tape measures. I can also use all my senses to help observe in a different way alongside equipment. I can use more than one method of observation at a time for a single observation.
<b>Gathering and recording data</b>	I can verbally talk about my findings and observations in simple terms.	I can start to use a simple tick list/mark make to convey a meaning using picture prompts when searching for a small number of specific things e.g. basic plant hunts.	I can gather and record data to help when answering questions. I can use diagrams, write findings and draw pictures (observational drawings). E.g. How plants grow and life cycles.	I can gather and record data to help in answering questions using some more complex methods: tally charts, block diagrams/simple flow charts (create a human life cycle using a flow chart).
<b>Identifying</b>	I can sort a small number of animals and objects into two or more basic categories e.g. animals that have wings and animals that don't. Hard and soft materials.	I can group a variety of animals and objects by sorting them into several categories e.g. farm animals, woodland animals and ocean animals.	I can identify and classify living things and materials by sorting and grouping into scientific groups: Mammals, fish, reptiles, amphibians, birds. Carnivores, herbivores, omnivores Hard, soft, strong, fragile. I can use given headings to classify/group.	I can identify and classify animals and materials in further detail across scientific groups based on their features. Types of teeth, bodies etc/opaque, transparent, bendy, stretchy, rigid. I can identify and label basic parts of the human body. I can sort healthy lifestyle choices and unhealthy lifestyle choices and explain why. I can group using my own headings to classify/group.
<b>Predicting</b>	I can make simple predictions verbally (adult led) based on a simple question: Will the pebble float or sink? Answer float or sink.	I can follow models by the teacher or answer simple questions. I can start to use my knowledge of things to help me make good predictions e.g. pebbles are heavy therefore I predict they might sink.	I can use my own observations and ideas to suggest answers to questions verbally. I can draw my predictions in basic form.	I can use observations and ideas to suggest answers to questions both verbally and in written form.
<b>Reporting</b>	I can verbally report on what I have found with the help of an adult in simple terms e.g. The chick turns into a hen. The ice melts in water.	I can verbally report on what I have found with peers or to an adult and more specific e.g. The chick hatches out of the egg. The pebble sinks in water and the cork floats.	I can verbally report on what I have found in more detail e.g. The plant that has water and sunlight grows best. I can write my findings via basic labels and captions e.g. frog spawn to tadpole with adult support.	I can verbally report in detail on what I have found e.g. The plastic would make the best umbrella because it is waterproof which keeps out the rain. I can write my findings in further detail e.g. 'The plastic is best' with some adult support.