

Science Project Overview Year 6 Living things

Subject Knowledge (PoS)

Substantive Knowledge

- Living things including micro-organisms, plants and animals, are classified into broad groups according to common observable characteristics and based on similarities and differences.
- Plants and animals can be classified based on specific characteristics some of which are listed below.

Classification	The arrangement of plants or animals based on their observed similarities.
Observable	If something is observable, you will be able see/notice it clearly.
Characteristics	Typical features of a person, place or thing.
Vertebrate	Animal with a backbone.
Invertebrate	Animal without a backbone.
Reptiles	Cold blooded, vertebrates with dry, scaly skin that usually lay soft-shelled eggs on land.
Amphibians	Cold blooded, vertebrates that breathe using gills when young but develop lungs by adulthood. Found in and around water.
Mammals	Warm blooded vertebrates that have hair or fur and give birth to live young.
Micro-organisms	Living things so small that they can only be seen with a microscope. Examples are bacteria, viruses and fungus.
Fungus	Spore-producing organisms such as moulds, yeast, mushrooms and toadstools.

Working Scientifically (PoS+Overview)

Disciplinary Knowledge

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- Asking their own questions about scientific phenomena
- Select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources.
- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments.
- Draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings

Working Scientifically

Methods

Using different types of scientific enquiry to answer their own questions, including:

- observing changes over different periods of time,
- noticing patterns,
- grouping and classifying things,
- carrying out comparative and fair tests
- and finding things out using a wide range of secondary sources

<p>Previous learning:</p> <ul style="list-style-type: none"> • Recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats) • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats) • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats) • Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats) 	<p>Preparing for future learning:</p> <ul style="list-style-type: none"> • Differences between species. (KS3) 	<p>Bespoke to our school: A big emphasis will be on the teaching of vocabulary. Children can draw on the knowledge they have from our 'Forest school' sessions. Links are made to the future world of work.</p>
<p>Vocabulary: Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering</p>		
<p>Misconceptions:</p> <ul style="list-style-type: none"> • All micro-organisms are harmful • Mushrooms are plants. 		
<p>English Links: James and the Giant Peach</p>		
<p>Famous Scientists to possibly study: Libby Hyman-Classification (Invertebrates). BBC Video http://www.bbc.co.uk/programmes/articles/2bnTHtTcyLfdKk7BtCtjbhf/scitube-scientists-and-scientific-method?dm_i=3YNL,BHOK,2VWQKN,16RVJ,1 Also see Linnean Society videos- Curious Discoveries of Linneaus</p>		
<p>Explorify links: What if there were no deserts? Can microbes be good for you? Small but powerful</p>		

Possible careers/jobs:

Animal behaviourist (studies animal interactions) , Conservationist (works for the protection and preservation of living things and the environment), Farmer (grows crops and raises animals for food) , Geneticist (studies genes), Marine biologist (studies living things in oceans), Microbiologist (studies tiny living things), Park ranger (maintains parks), Taxonomist (classifies animals and plants), Veterinarian/Vet (looks after unwell animals), Wildlife filmmaker (creates films and documentaries about wildlife), Wildlife photographer (takes pictures of animals and plants) , Zoologist (studies animals)