

Science Curriculum overview

Years 1-6

YEAR 1

Science- Curriculum Skills

Can I identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense?
Can I link these parts to my senses?
Can I spot the changes in the different seasons?
Can I talk about the weather & how the day changes in length?
Can I place materials in groups and talk about how I sorted them?
Can I name & describe a range of materials?
Can I tell the difference between an object & its material?
Can I name and identify common animals? including fish, amphibians, reptiles, birds and mammals
Can I describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)
Can I name & identify carnivores, herbivores & omnivores?
Can I name & identify wild and garden plants, including deciduous and evergreen trees different flowers & trees?
Can I identify and describe the basic structure of a variety of common flowering plants, including trees?

YEAR 1

Science- Thinking Scientifically

Can I ask questions about what I see?
Can I try to answer questions in different ways?
Can I make some measurements of what I observe using simple equipment?
Do I know why I am trying to find out things?
Can I plan and perform a simple test?
Can I give some reasons why things may happen?
Can I sort things into different groups?
Can I explain why I've sorted them?
Can I tell others about what I observe
Can I answer questions from what I have done and found out?
Can I draw pictures of what I observe?
Can I put information on a chart?

YEAR 2

Science- Curriculum Skills

Can I describe the importance of staying healthy?
Can I describe the basic needs for humans to survive?
Can I talk about the basic life cycle of a human?
Can I identify materials that can change shape?
Can I choose and compare different materials for particular Purposes?
Can I find out & describe what a plant needs to grow?
Can I talk about how seeds and bulbs grow into plants?
Can I identify and describe different habitats?
Can I name a range of animals and plants in their habitat?
Can I describe the differences between living and dead things?
Can I create simple food chains?

YEAR 2**Science- Thinking Scientifically**

- Can I use all of my senses to observe so that I can try to answer questions?
- Can I answer a range of questions in a range of ways?
- Can I make accurate measurements using simple equipment? (Length, time, capacity, weight)?
- Can I describe my observations using scientific vocabulary?
- Can I plan and perform simple tests with a range of appropriate equipment?
- Can I compare observations using scientific vocabulary?
- Can I say whether what happened was what I expected?
- Can I compare objects, materials and living things?
- Can I sort objects, materials and living things into different groups and explain my choices?
- Can I act on suggestions about how to find more things out?
- Can I use my observations and ideas to answer questions?
- Can I record my observations on screen and paper using text, tables, drawings and labelled diagrams?
- Can I report back my findings?

YEAR 3**Science- Curriculum Skills**

- Can I identify where humans get their nutrition from?
- Can I describe how humans cannot make their own food but need the right types and amount of nutrition to be healthy?
- Can I identify that humans, like other animals have skeletons?
- Can I explain how humans use their skeleton for support, protection and movement?
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- Can I explain how humans use their skeleton for support, protection and movement?
- Can I recognise that we need light to see but the sun can be dangerous?
- Can I explain how dark is the absence of light?
- Can I describe how light is reflected and that shadows are formed by blocking light?
- Can I spot patterns in the way the size of shadows change?
- Can I compare and group together different kinds of rocks by their appearance and properties?
- Can I describe how fossils are formed?
- Can I explain how soil is made from rocks and organic matter?
- Can I compare how things move on different surfaces?
- Can I describe that magnetic forces do not need direct contact to work, unlike other forces?
- Can I describe how magnets have two poles and predict if these will attract or repel each other?
- Can I observe and describe how magnets interact with each other and other materials?
- Can I describe the parts of a plant and their jobs?
- Can I explore what a plant requires for life and growth?
- Can I investigate how water travels in plants?
- Can I explore the role of the flower in the life cycle of the plant?

YEAR 3**Science- Thinking Scientifically**

- Can I recognise why it is important to collect data to answer questions?
- Can I act on suggestions and put forward my own ideas about how to find the answer to a question?
- Can I plan and carry out a fair test and explain why it was fair?
- Can I plan and carry out a comparative test?
- Can I predict what might happen before I carry out any tests?
- Can I accurately measure length, mass, time and temperatures using suitable equipment?
- Can I record my observations, comparisons and measurements using tables, charts, text and labelled diagrams?
- Can I use scientific vocabulary to describe my observations and data presentations?
- Can I give reasons for my observations?
- Can I present my results clearly?
- Can I use my results to make a simple conclusion and develop further questions I might answer?
- Can I suggest how I can make improvements to my work?
- Can I look for patterns in my data and try to explain them?
- Can I use explain how to use secondary sources of information to answer questions that cannot be answered through practical investigations?

YEAR 4

Science- Curriculum Skills

- Can I identify and explain different human teeth and their roles?
- Can I describe the basic human digestive system?
- Can I create and interpret food chains?
- Can I compare and group solids, liquids and gasses?
- Can I describe the changes of state as some materials are heated or cooled, researching this temperature in degrees Celsius?
- Can I identify and explain evaporation and condensation in the water cycle?
- Can I identify common appliances that run on electricity?
- Can I construct a simple electrical circuit, identifying its constituents?
- Can I predict whether a lamp will light in a circuit and recognise that a switch opens and closes a circuit?
- Can I recognise some simple insulators and conductors, associating metals with conductivity?
- Can I identify sounds being caused by vibrations, travelling through a medium to the ear?
- Can I associate pitch patterns in pitch with the features of the object producing the sound?
- Can I describe the relationship between volume and the strength of vibrations?
- Can I recognise that sounds get fainter as the distance from source increases?
- Can I describe how living things can be grouped in a variety of ways?
- Can I use classification keys to group, identify and name living things?
- Can I recognise how environments change which poses dangers to some living things?

YEAR 4

Science- Thinking Scientifically

- Can I recognise that scientific ideas are based on evidence that can answer a range of questions?
- Can I decide on the most appropriate approach to an investigation (eg. a fair test, comparative) to answer a question?
- Can I describe how to vary one factor while keeping others the same?
- Can I make predictions?
- Can I consider how changing one variable can alter another and use the convention of 'er' words to describe this (eg. The heavier the load, the longer the spring)?
- Can I make observations using materials and equipment that are accurate, timely and right for the task?
- Can I record my observations using a range of appropriately detailed approaches?
- Can I use appropriate scientific language in all written and spoken recordings?
- Can I report fully on my findings and appropriately for the audience?
- Can I relate my conclusions to observable patterns?
- Can I suggest improvements to my work and give reasons?
- Can I use my data to interpret patterns, similarities and differences?
- Can I research and select which information to use from sources provided for me (print and screen)?

YEAR 5

Science- Curriculum Skills

- Can I describe the differences in the life cycles of mammals, amphibians, insects and birds?
- Can I describe the process of reproduction in some plants and animals?
- Can I describe the movement of the Earth and planets in relation to the Sun in the solar system?
- Can I describe the Sun, Earth & Moon as approximately spherical bodies & explaining their relative movement?
- Can I talk about the Earth's rotation to explain day and night?
- Can I describe the link between unsupported objects and gravity?
- Can I identify the effects of air resistance, water resistance and friction on moving surfaces?
- Can I recognise how some mechanisms allow smaller forces to have a greater effect?
- Can I compare, sort and group everyday materials based on hardness, solubility, transparency, conductivity (thermal & electrical) & magnetism?
- Can I explain how some materials dissolve in liquid; form a substance and describe how to recover a substance from solution?
- Can I describe separating mixtures of solids, liquids & gases by filtering, sieving and evaporation?
- Can I demonstrate how to dissolving, mixing and changes of state are reversible?
- Can I give reasons from evidence for the use of common materials?
- Can I explain that some changes of state forms new materials and these may not be reversible?
- Can I describe the changes in human development from birth to death?

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YEAR 6

Science- Curriculum Skills

- Can I identify and name the main parts of the circulatory system; describing heart, blood vessel and blood functions?
- Can I describe the impact that diet, exercise, drugs and life style have on bodily functions?
- Can I describe how water and nutrients are transported in animals (including humans)?
- Can I explain how light travels in straight lines from sources or reflections to our eyes?
- Can I explain why shadows have the same shape as the objects that cast them?
- Can I associate the brightness of a lamp or volume of a buzzer with the number and voltage of cells used in the circuit?
- Can I compare and describe variations in components in a circuit?
- Can I compose simple circuit diagrams using recognised symbols?
- Can I describe how living things are classified?
- Can I give reasons for classifying plants and animals based on specific characteristics?
- Can I recognise how living things have changed over time with fossils providing information about habitation millions of years ago?
- Can I recognise that living things produce offspring of the same kind but not identical to their parents?
- Can I identify how animals and plants adapt to their environment leading to evolution?

YEAR 6

Science- Thinking Scientifically

- Can I describe how experimental evidence and creative thinking have been combined to provide a scientific explanation? (eg. Jenner's work on vaccination.)?
- Can I find an appropriate approach when trying to answer a question?
- When investigation involves a fair test, can I find the key factors to be considered, clearly communicating the variables I alter and those I leave unchanged?
- Can I draw conclusions that are consistent with the evidence and relate these to scientific knowledge?
- Can I select apparatus and plan to use it effectively?
- Can I repeat observations and measurements and offer explanations for any differences I encounter?
- Can I use the computer to collect data (data logging)?
- Can I make a series of observations, comparisons, classifications or measurements with precision?
- Can I record observations and measurements systematically?
- Can I present (where appropriate) data as in a range of suitable forms?
- Can I make predictions based on my scientific knowledge and understanding?
- Can I make practical suggestions about how my working methods can be improved?
- Can I use appropriate scientific language and conventions to communicate quantitative and qualitative data?
- Can I research, select and evaluate a range of sources of information, including primary and secondary sources?