

Science Progression Overview

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|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Working scientifically | Identify and classify.  Testing  Recording  Observing  Questioning | Observe, Ask questions, Perform simple tests  Answer questions, record data | Observations  Questions  Measurements  Data  Identifying  Enquiries  Recording  Fair tests  Measurements  Data | Question, use evidence, measure, test, record, report, present.  Read, spell and pronounce scientific vocab. | Question, use evidence, measure, test, record, report, present.  Read, spell and pronounce scientific vocab. | Question, use evidence, measure, test, record, report, present.  Read, spell and pronounce scientific vocab. |
| Plants  Significant figures:  Joseph Banks  George Washington Carver | identify and name a variety of common wild and garden plants, including deciduous and evergreen trees  identify and describe the basic structure of a variety of common flowering plants, including trees.  Trees - horse chestnut, bramble, sycamore, pine & pine cone, rhododendron, oak & acorn  Deciduous and evergreen  Flowers - snowdrops, crocus, daffodils, bluebells | observe and describe how seeds and bulbs grow into mature plants  Sunflower & daffodil  find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. | identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers  explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant  investigate the way in which water is transported within plants  explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.  Radish, cress  Plants for dispersal: Dandelion, Sycamore, Acorn, Berries, Peas  Seeds, seed dispersal, water transportation, functions of a plant. |  |  |  |
| Animals, including humans  Significant Figures:  Helen Keller | identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals  identify and name a variety of common animals that are carnivores, herbivores and omnivores  describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)  identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.  Birds – robin, sparrow, blue tit, woodpecker, black bird Woodland animals - grey squirrel, fox, rabbit, snake, frog, slugs and snails, woodlice  Animals 1 hot/1 cold for each category – fish, amphibians, reptiles  Name animals which are carnivore, herbivore and omnivore | notice that animals, including humans, have offspring which grow into adults  find out about and describe the basic needs of animals, including humans, for survival (water, food and air)  describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. | identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat  identify that humans and some other animals have skeletons and muscles for support, protection and movement. | construct and interpret a variety of food chains, identifying producers, predators and prey.  describe the simple functions of the basic parts of the digestive system in humans - teeth, mouth, oesophagus, stomach, small and large intestine, bowel  identify the different types of teeth in humans and their simple functions | describe the changes as humans develop from birth to old age. | describe the ways in which nutrients and water are transported within animals, including humans.  identify and name the main parts of the human circulatory system (heart, veins, arteries, chambers, valves, lungs, muscles) and describe the functions of the heart, blood vessels and blood  recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function |
| Living things and habitats  Significant figures:  Sir David Attenborough  Dame Jane Goodall  Carl Linnaeus |  | explore and compare the differences between things that are living, dead, and things that have never been alive  identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other  identify and name a variety of plants and animals in their habitats, including micro-habitats (cliffs, beach, rockpools, sea, woodland)  describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.  Woodland animals, habitats, life cycles and food chains  Seaside animals, habitats, life cycles and food chains |  | 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:  Common toad, grass snake, snail, thrush, sparrow hawk, lichen, thistle, slug, blackberries, bank vole, stoat  Habitats:  Pond, hedgerow, woodland, field  Changing environments | describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird  describe the life process of reproduction in some plants and animals.  Dragon Flies, Dandelions, Sycamore, Buttercups, ladybird  Mammal, amphibian, insect, bird | describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals  give reasons for classifying plants and animals based on specific characteristics. |
| Evolution and inheritance  Significant figures:  Charles Darwin  Alfred Wallace |  |  |  |  |  | recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago  recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents  identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.  Moths, Tigers (Sumatran), orangutans, elephants, Burmese python, penguins (Humboldt, Rockhopper & emperor), Asian jungle, Antarctic |
| Rocks  Significant figures:  Mary Anning |  |  | compare and group together different kinds of rocks on the basis of their appearance and simple physical properties  describe in simple terms how fossils are formed when things that have lived are trapped within rock  recognise that soils are made from rocks and organic matter. |  |  |  |
| Everyday materials | distinguish between an object and the material from which it is made  identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock  describe the simple physical properties of a variety of everyday materials  compare and group together a variety of everyday materials on the basis of their simple physical properties.  Sorting materials  Naming materials  Comparing materials | identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses  find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.  Materials – fit for purpose investigation Materials – Ship investigation  Waterproof and durability  Materials investigation  Which materials burn best?  Build up the houses to set fire too |  |  |  |  |
| Properties and changes of materials |  |  |  |  | compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets  know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution  use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating  give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic  demonstrate that dissolving, mixing and changes of state are reversible changes  explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. |  |
| 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. |  |  |
| Light |  |  | recognise that they need light in order to see things and that dark is the absence of light  notice that light is reflected from surfaces  recognise that light from the sun can be dangerous and that there are ways to protect their eyes  recognise that shadows are formed when the light from a light source is blocked by a solid object  find patterns in the way that the size of shadows change. |  |  | recognise that light appears to travel in straight lines  use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye  explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes  use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. |
| 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. |  |  |
| Forces and magnets  Significant figures:  Sir Isaac Newton |  |  | compare how things move on different surfaces  notice that some forces need contact between two objects, but magnetic forces can act at a distance  observe how magnets attract or repel each other and attract some materials and not others  compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials  describe magnets as having two poles  predict whether two magnets will attract or repel each other, depending on which poles are facing. |  | explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object  identify the effects of air resistance, water resistance and friction, that act between moving surfaces  recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. |  |
| Seasonal changes | observe changes across the four seasons  observe and describe weather associated with the seasons and how day length varies.  Trees  Four seasons  Weather  Throughout year |  |  |  |  |  |
| Earth and space |  |  |  |  | describe the movement of the Earth, and other planets, relative to the Sun in the solar system  describe the movement of the Moon relative to the Earth  describe the Sun, Earth and Moon as approximately spherical bodies  use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky. |  |
| Electricity  Significant figures:  Thomas Edison  Lewis Latimer  Granville T Woods |  |  |  | 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. |  | associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit  compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches  use recognised symbols when representing a simple circuit in a diagram. |