**Progression In Science**

|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
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| **Scientific Thinking Skills** |  | |  | |  | |
| Ask Qs & plan enquiry | Ask simple Qs and recognise that they can be answered in different ways\*. | | Ask relevant questions and use different types\* of scientific enquiries to answer them. | | Plan different types\* of scientific enquiries to answer their own questions, including recognising and controlling variables where necessary. | |
| Set up enquiry | Perform simple tests. | | Set up simple practical enquiries, comparative and fair tests. | | Use test results to make predictions to set up further comparative and fair tests. | |
| Observe & Measure | Observe closely, using simple equipment | | Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate | | Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate | |
| Record | Gather and record data to help in answering questions | | Gather, record, classify and present data in a variety of ways to help in answering questions.  Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. | | Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. | |
| Interpret. & Port | Identify and classify.  Use appropriate scientific language to communicate ideas. | | Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.  Identify differences, similarities or changes related to simple scientific ideas and processes. | | Report and present findings from enquiries, inc conclusions and causal relationships, in oral and written forms such as displays and other presentations, using appropriate scientific language. | |
| Evaluate | Use their observations and ideas to suggest answers  to questions | | Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.  Use straightforward scientific evidence to answer questions or to support their findings. | | Explain degree of trust in results.  Identify and evaluate scientific evidence (their own and others’) that has been used to support or refute ideas or arguments. | |
| **Topics** |  |  |  |  |  |  |
| Plants | Identify and name a  variety of common  plants, including garden  plants, wild plants and  trees and those  classified as deciduous  and evergreen.  • Identify and describe  the basic structure of a  variety of common  flowering plants,  including roots,  stem/trunk, leaves and  flowers.  • Observe and describe  how seeds and bulbs  grow into  mature plants.  • Find out and describe  how plants need water,  light and a suitable  temperature to grow  and stay healthy. | 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, 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 role of  flowers in the life cycle  of flowering plants,  including pollination,  seed formation and  seed dispersal. |  | Describe the life  process of reproduction  in some plants and  animals. |  |
| Animals inc Humans | Identify and name a  variety of common  animals that are  birds, fish,  amphibians, reptiles,  mammals and  invertebrates.  • 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  (birds, fish,  amphibians, reptiles,  mammals and  invertebrates,  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. | Notice that animals,  including humans,  have offspring which  grow into adults.  • Investigate 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.Investigate 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. • 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. | Identify that humans  and some animals have  skeletons and muscles  for support, protection  and movement.Identify that animals,  including humans, need  the right types and  amounts of nutrition,  that they cannot make  their own food and they  get nutrition from what  they eat. | Identify that animals,  including humans, need  the right types and  amounts of nutrition,  that they cannot make  their own food and they  get nutrition from what  they eat.  • Construct and  interpret a variety of  food chains, identifying  producers, predators  and prey.  • Identify that humans  and some animals  have skeletons and  muscles for support,  protection and  movement.  • 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. | Describe the  differences in the life  cycles of a mammal, an  amphibian, an insect  and a bird.  Describe the changes  as humans develop 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, and describe  the functions of the  heart, blood vessels and  blood.  • Recognise the  importance of diet,  exercise, drugs and  lifestyle on the way the  human body functions. |
| Living things and their Habitats |  | Explore and  compare the  differences betwee  n things that are  living, that  are dead and 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.  • 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. |  | Recognise that living  things can be grouped in  a variety of ways.  • Explore and use  classification keys.  • Recognise that  environments can  change and that this can  sometimes pose  dangers to specific  habitats. |  | Describe how living  things are classified into  broad groups according  to common observable  characteristics.  • Give reasons for  classifying plants and  animals based on  specific characteristics. |
| Evolution and Change |  |  |  |  |  | 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. |
| 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.  • Find out how the  shapes of solid objects  made from some  materials can be  changed by squashing,  bending, twisting and  stretching.  • Identify and compare  the suitability of a  variety of everyday  materials, including  wood, metal,  plastic, glass, brick/rock,  and paper/cardboard  for particular uses. | 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.  • Find out how the  shapes of solid objects  made from some  materials can be  changed by squashing,  bending, twisting and  stretching.  • Identify and compare  the suitability of a  variety of everyday  materials, including  wood, metal,  plastic, glass, brick/rock,  and paper/cardboard  for particular uses. | Compare and group  together different kinds  of rocks on the basis of  their simple,  physical properties.  • Relate the simple  physical properties of  some rocks to their  formation (igneous or  sedimentary).  • Describe in simple  terms how fossils are  formed when things  that have lived are  trapped  within sedimentary  rock.  • Recognise that soils  are made from rocks  and organic 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  the temperature at  which this happens in  degrees Celsius (°C),  building on their  teaching  in mathematics.  • Identify the part  played by evaporation  and condensation in the  water cycle and  associate the rate of  evaporation with  temperature. | 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,  oxidisation and the  action of acid on  bicarbonate of soda. |  |
| Forces |  |  | 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 effect of  drag forces, such as air  resistance, water  resistance and friction  that act between  moving surfaces.  • Describe, in terms of  drag forces, why moving  objects that are not  driven tend to slow  down.  • Understand that force  and motion can be  transferred through  mechanical devices such  as gears, pulleys, levers  and springs.  • Understand that some  mechanisms including  levers, pulleys and  gears, allow a smaller  force to have a greater  effect. |  |
| Light and Sound |  |  | 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. | Identify how sounds  are made, associating  some of them with  something vibrating.  • Recognise that  vibrations from sounds  travel through a  medium to the ear. |  | Understand 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 eyes.  • Use the idea that light  travels in straight lines  to explain why shadows  have the same shape as  the objects that cast  them, and to predict the  size of shadows when  the position of the light  source changes.  • 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. |
| 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. |  | 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. |