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| **Science: Progression of Knowledge Map** | | | | | | | |
|  | **EYFS** | **Y1** | **Y2** | **Y3** | **Y4** | **Y5** | **Y6** |
| **Plants** | Plant seeds and care for growing plants.  Explore the natural world around them, making observations  and drawing pictures of animals and plants. | 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 | 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. | 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. |  |  |  |
| **Materials** | Explore collections of materials with similar and/or different  properties.  Talk about the differences between materials and changes  they notice. | Distinguish  between an object  and the material  from which it is  Identify and  compare the  suitability of a  variety of everyday  Compare and  group together  everyday materials  on the basis of  Science Knowledge Progression Map  made.  Identify and name  a variety of  everyday materials  including: wood,  plastic, glass, 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. | 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. |  | 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. | 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. |  |
| **Seasonal Changes** | Understand the effect of changing seasons on the natural world around them.  Understand some important processes and changes in  the natural world around them, including the seasons and  changing states of matter. | Observe changes  across the four  seasons.  Observe and  describe weather  associated with the  seasons and how day  length varies. |  |  |  |  |  |
| **Animals including humans** | Understand the key features of the life cycle of a plant and  an animal.  Explore the natural world around them, making observations  and drawing pictures of animals and plants. | 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 including  fish, amphibians,  reptiles, birds,  mammals and pets.  Identify, name,  draw and label the  basic body 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.  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. | 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.  Construct and  interpret a variety  of food chains,  identifying  producers,  predators and prey. | Describe the  changes as humans  develop to old age. | Identify and name  the main parts of  the human  circulatory system  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.  Describe the ways  in which nutrients  and water are  transported within  animals, including  humans. |
| **Living things and their habitats** | Begin to understand the need to respect and care for the  Natural environment and all living things.  Understand the key features of the life cycle of a plant and  an animal.  Explore the natural world around them, making observations  and drawing pictures of animals and plants. |  | 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.  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  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. | 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. | Describe how  living things are  classified into  broad groups  according to  common observable  characteristics and  based on  similarities and  differences,  including microorganisms, plants  and animals.  Give reasons for  classifying plants  and animals based  on specific  characteristics. |
| **Rocks** |  |  |  | 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. |  |  |  |
| **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 an  opaque 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.  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. |  | 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. |
| **Forces and magnets** | Explore and talk about different forces they can feel. |  |  | 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. |  |
| **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  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.  Used recognised  symbols when  representing a  simple circuit in a  diagram. |
| **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  Science Knowledge Progression Map  the Earth’s rotation  to explain day and  night and the  apparent movement  of the sun across  the sky. |  |
| **Evolution and inheritance** |  |  |  |  |  |  | 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. |