

Science Y5 & Y6 Yr A

Physical processes	Materials	Living things
<p>Light & Sound</p> <ul style="list-style-type: none"> ▪ that light travels from a source ▪ that light cannot pass through some materials, and how this leads to the formation of shadows ▪ that light is reflected from surfaces (e.g. mirrors, polished metals] ▪ that we see things only when light from them enters our eyes ▪ recognise that light appears to travel in straight lines ▪ use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. ▪ that sounds are made when objects (e.g. strings on musical instruments) vibrate but that vibrations are not always directly visible ▪ how to change the pitch and loudness of sounds produced by some vibrating objects (e.g. a drum skin, a plucked string] ▪ that vibrations from sound sources require a medium (e.g. metal, wood, glass, air) through which to travel to the ear. <p>Forces</p> <ul style="list-style-type: none"> ▪ that objects are pulled downwards because of the gravitational attraction between them and the Earth ▪ about friction, including air resistance, as a force that slows moving objects and may prevent objects from starting to move ▪ how to measure forces and identify the direction in which they act. ▪ understand that gravity is a force ▪ describe some of the factors that increase friction between solid surfaces and increase air and water resistance ▪ identify that weight is a force and is measured in newtons 	<p>Grouping and classifying materials</p> <ul style="list-style-type: none"> ▪ to compare everyday materials and objects on the basis of their material properties, including hardness, strength, flexibility and magnetic behaviour, and to relate these properties to everyday uses of the materials ▪ that some materials are better thermal insulators than others ▪ that some materials are better electrical conductors than others ▪ to recognise differences between solids, liquids and gases, in terms of ease of flow and maintenance of shape and volume. ▪ 	<p>Life processes</p> <ul style="list-style-type: none"> ▪ that the life processes common to humans and other animals include nutrition, movement, growth and reproduction ▪ to make links between life processes in familiar animals and the environments in which they are found. <p>Circulation</p> <ul style="list-style-type: none"> ▪ that the heart acts as a pump to circulate the blood through vessels around the body, including through the lungs ▪ I can recognise that during exercise the heart beats faster to take blood more rapidly to the muscles ▪ I know that muscles work in pairs ▪ identify the major organs of the body ▪ describe the functions of the main organs of the body ▪ describe the ways in which nutrients and water are transported within animals, including humans. <p>Growth and reproduction</p> <ul style="list-style-type: none"> ▪ about the main stages of the human life cycle ▪ describe the changes as humans develop to old age. <p>Health</p> <ul style="list-style-type: none"> ▪ about the effects on the human body of tobacco, alcohol and other drugs, and how these relate to their personal health <p>Micro-organisms</p> <p>that micro-organisms are living organisms that are often too small to be seen, and that they may be harmful e.g. in causing disease</p>

- | | | |
|---|--|--|
| <ul style="list-style-type: none">▪ describe situations in which there are 2 forces acting on an object▪ recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. | | |
|---|--|--|

Science Y 5 & Y6 Yr B

Materials	Physical processes	Living things
<p>Separating Materials</p> <ul style="list-style-type: none"> ▪ how to separate solid particles of different sizes by sieving (e.g. those in soil) ▪ that some solids (e.g. salt, sugar) dissolve in water to give solutions but some (e.g. sand, chalk) do not ▪ how to separate insoluble solids from liquids by filtering ▪ how to recover dissolved solids by evaporating the liquid from the solution ▪ to use knowledge of solids, liquids and gases to decide how mixtures might be separated. <p>Changing Materials</p> <ul style="list-style-type: none"> ▪ to describe changes that occur when materials are mixed (e.g. adding salt to water) ▪ to describe changes that occur when materials (e.g. water, clay, dough) are heated or cooled ▪ about reversible changes, including dissolving, melting, boiling, condensing, freezing and evaporating ▪ the part played by evaporation and condensation in the water cycle ▪ know there is a limit to how much solid can be dissolved into a given amount of liquid ▪ 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. 	<p>Electricity</p> <ul style="list-style-type: none"> ▪ how changing the number or type of components (e.g. batteries, bulbs, wires) in a series circuit can make bulbs brighter or dimmer ▪ how to represent series circuits by drawings and conventional symbols, and how to construct series circuits on the basis of drawings and diagrams using conventional symbols. ▪ describe the differences between a circuit in series and parallel circuit <p>The Earth and beyond</p> <ul style="list-style-type: none"> ▪ that the Sun, Earth and Moon are approximately spherical ▪ how the position of the Sun appears to change during the day, and how shadows change as this happens ▪ how day and night are related to the spin of the Earth on its own axis ▪ that the Earth orbits the Sun once each year, and that the Moon takes approximately 28 days to orbit the Earth. ▪ describe the movement of the earth in space and how this affects shadow length, night and day and seasons ▪ explain the length of day and year in terms of rotation and orbit 	<p>Variation and classification</p> <ul style="list-style-type: none"> ▪ to make and use keys ▪ how locally occurring animals and plants can be identified and assigned to groups ▪ that the variety of plants and animals makes it important to identify them and assign them to groups. ▪ 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. <p>Feeding relationships</p> <ul style="list-style-type: none"> ▪ to use food chains to show feeding relationships in a habitat ▪ about how nearly all food chains start with a green plant <p>Reproduction</p> <ul style="list-style-type: none"> ▪ about the parts of the flower [e.g. stigma, stamen, petal, sepal) and their role in the life cycle of flowering plants, including pollination, seed formation, seed dispersal and germination. ▪ 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. ▪ recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents <p>Adaptation</p> <ul style="list-style-type: none"> ▪ about the different plants and animals found in different habitats ▪ how animals and plants in two different habitats

are suited to their environment

- **identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.**
- **recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago**

Micro-organisms

- that micro-organisms are living organisms that are often too small to be seen, and that they may be beneficial (e.g. in the breakdown of waste, in making bread)