|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Class** | **Biology** | **Chemistry** | **Physics** | **Working Scientifically** |
| **2** | Plants   * Identify, classify and describe their basic structure. * Observe and describe growth and conditions for growth.   All Living Things   * Investigate differences   Whole School  Look at the effect of diet, exercise and drugs. | Materials   * Identify, name, describe, classify, compare properties and changes. * Describe the simple physical properties of a variety of everyday materials | Earth and Space   * Observe seasonal changes. * Observe changes across the four seasons * Observe and describe weather associated with the seasons and how day length varies. | Across all year groups scientific knowledge and skills should be learned by working scientifically. (This is documented in the Essentials for progress section.)  Across all year groups scientific knowledge and skills should be learned by working scientifically. (This is documented in the Essentials for progress section.)    Across all year groups scientific knowledge and skills should be learned by working scientifically. (This is documented in the Essentials for progress section.)    Across all year groups scientific knowledge and skills should be learned by working scientifically. (This is documented in the Essentials for progress section.) |
| **3** | Habitats   * Look at the suitability of environments and at food chains.   All Living Things  • Investigate differences  Whole School  Look at the effect of diet, exercise and drugs. |  | Light   * Look at sources and reflections. * Earth and space Observe seasonal changes.   Forces   * compare how things move on different surfaces   Y4 Sound   * identify how sounds are made, associating some of them with something vibrating |
| **4** | Animals and humans   * Investigate differences. * Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)   All Living Things  • Investigate differences  Whole School  Look at the effect of diet, exercise and drugs. | Materials   * Look at the practical uses of everyday 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 | Earth and Space  •Observe seasonal changes.  •Observe changes across the four seasons  •Observe and describe weather associated with the seasons and how day length varies.  Electricity   * Electricity Look at appliances and circuits. * Safety with electricity |
| **7** | Animals and humans   1. 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 2. identify that humans and some other animals have skeletons and muscles for support, protection and movement 3. identify the different types of teeth in humans and their simple functions   Whole School  Look at the effect of diet, exercise and drugs. | Light   1. Look at sources, seeing, reflections and shadows 2. Recognise that light appears to travel in straight lines 3. 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 | Rocks   1. Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties 2. Describe in simple terms how fossils are formed when things that have lived are trapped within rock 3. Recognise that soils are made from rocks and organic matter.   Sound   1. Look at sources, vibration, volume and pitch 2. recognise that sounds get fainter as the distance from the sound source increases   Earth and Space   1. Look at the movement of the Earth and Moon 2. Explain night and day |
| **8** | Plants   1. identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers 2. 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 3. investigate the way in which water is transported within plants 4. explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal 5. 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   Whole School  Look at the effect of diet, exercise and drugs. | Light   1. 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 2. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.   Properties and changes of materials   1. 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 2. know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution 3. use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating 4. give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic 5. demonstrate that dissolving, mixing and changes of state are reversible changes 6. 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 | Forces   1. Look at contact and distant forces, attraction and repulsion 2. Describe magnets as having two poles predict whether two magnets will attract or repel each other, depending on which poles are facing. 3. Looks at poles, attractions and repulsion 4. Look at gravity and drag 5. Look at gears, pulleys and levers. |
| **9** | Animals and humans   1. Look at nutrition, transportation of water and nutrients in the body, and the muscle and skeleton system of humans and animals. 2. Look at the digestive system in humans. Evolution and inheritance 3. Look at changes to the human skeleton over time. All living things 4. identify the different types of teeth in humans and their simple functions   Whole School  Look at the effect of diet, exercise and drugs. | States of Matter   1. compare and group materials together, according to whether they are solids, liquids or gases 2. 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) 3. identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature | Rocks   1. Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties   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   Sound   1. Look at sources, vibration, volume and pitch 2. recognise that sounds get fainter as the distance from the sound source increases |
| **10** | All living things   1. Identify and name plants and animals' 2. Look at the life cycle of animals and plants. 3. 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 4. Dive reasons for classifying plants and animals based on specific characteristics   Whole School   * Look at the effect of diet, exercise and drugs. | Materials   * Look at solubility and recovering dissolved substances. * Separate mixtures * Examine changes to materials that create new materials that are usually not reversible. | Rocks   1. Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties   Sound  1 Look at sources, vibration, volume and pitch   1. recognise that sounds get fainter as the distance from the sound source increases   Forces   1. 1Look at contact and distant forces, attraction and repulsion 2. Describe magnets as having two poles predict whether two magnets will attract or repel each other, depending on which poles are facing. 3. Looks at poles, attractions and repulsion 4. Look at gravity and drag   Look at gears, pulleys and levers. |
| **11** | Evolution and Inheritance   1. Look at the human circulatory system. Evolution and inheritance 2. Look at resemblance in offspring. 3. Look at changes in animals over time. 4. Look at adaptation to environments. 5. Look at differences in offspring. 6. Look at adaptation and evolution   Animals and humans   1. Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood 2. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function 3. Describe the ways in which nutrients and water are transported within animals, including humans 4. Look at classification of plants, animals   Whole School  Look at the effect of diet, exercise and drugs. | States of Matter   1. compare and group materials together, according to whether they are solids, liquids or gases 2. 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) 3. identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature | Electricity   * Look at circuits, the effect of the voltage in cells and the resistance and conductivity of materials. * Use recognised symbols when representing a simple circuit in a diagram. * 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 switch   Light   * 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. |