**Marwood School Science Progression**

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| Reception |  | | |
| Communication and Language | * Learn new vocabulary. * Ask questions to find out more and to check what has been   said to them.   * Articulate their ideas and thoughts in well-formed sentences. * Describe events in some detail. * Use talk to work out problems and organise thinking and activities. Explain how things work and why they might happen. * Use new vocabulary in different contexts. | | |
| Physical Development | * Know and talk about the different factors that support their overall health and wellbeing:   + regular physical activity   + healthy eating   + toothbrushing   + sensible amounts of ‘screen time’   + having a good sleep routine   + being a safe pedestrian | | |
| Understanding the World | * Explore the natural world around them. * Describe what they see, hear and feel while they are outside. * Recognise some environments that are different to the one in which they live. * Understand the effect of changing seasons on the natural world around them. | | |
| ELG | Communication and Language | Listening, Attention and Understanding | * Make comments about what they have heard and ask questions to clarify their understanding. |
| Personal, Social and Emotional Development | Managing Self | * Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. |
| Understanding the World | The Natural World | * Explore the natural world around them, making observations and drawing pictures of animals and plants. * Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. * Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. |

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| KS1 | Autumn A | Spring A | Summer A | Autumn B | Spring B | Summer B |
| **UNIT** | **Animals** **including humans** (Y1) | **Seasonal Change (Y1)**  **Plants (Y1)**  Flowers/Trees | **Materials (Y1 & 2)** | **Working scientifically**  (Year 1 and 2) | **Living things and their habitats** (Y2)  **Animals including humans** (Y2) | **Plants (Y2)** |
| **AIMS** | 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. |  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 changes across the four seasons   observe and describe weather associated with the seasons and how day length varies. | 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.  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. |  asking simple questions and recognising that they can be answered in different ways   observing closely, using simple equipment   performing simple tests   identifying and classifying   using their observations and ideas to suggest answers to questions   gathering and recording data to help in answering questions. | 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.  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. | observe and describe how seeds and bulbs grow into  find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. |
| WORKING SCIENTIFICALLY | **Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:**  • asking simple questions and recognising that they can be answered in different ways;  • observing closely, using simple equipment;  • performing simple tests;  • identifying and classifying;  • using their observations and ideas to suggest answers to questions;  • gathering and recording data to help in answering questions. | | | | | |

**Marwood School Science Progression**

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| LKS2 | Autumn A | Spring A | Summer A | Autumn B | Spring B | Summer B |
| **UNIT** | **Living things and their habitats (yr 4)**  **Animals including Humans (yr4)** | **Electricity (yr4)**  **SCIENTISTS AND INVENTORS**  **Edison, Franklin, Faraday (yr4)**  **LIGHT (Y3)** | **States of Matter**  **(yr 4)**  **Plants (yr3)** | **Rocks and Fossils (yr3)**  **Scientific enquiry skills** | **Famous scientists and their inventions**  **Forces and Magnets**  **(yr 3)** | **Animals including Humans (yr 3)**  **Sound (yr4):**  **Vibrations, volume and pitch** |
| **AIMS** | **Pupils should be taught to:**  • 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. | **Pupils should be taught to:**  • 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. | **Pupils should be taught to:**  • 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. | **Pupils should be taught to:**  • 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 | Forces and Magnets  **Pupils should be taught to:**  • compare how things move on different surfaces;  • notice that some forces need contact between 2 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 2 poles;  • predict whether 2 magnets will attract or repel each other, depending on which poles are facing. | **Pupils should be taught to:**  • 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. |
|  | **Pupils should be taught to:**  • 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. | **Pupils should be taught to:**  • 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. | **Pupils should be taught to:**  • 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. | Asking relevant questions and using different types of scientific enquiries to answer them;  Setting up simple practical enquiries, comparative and fair tests;  Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;  Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;  Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;  Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions;  Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;  Identifying differences, similarities or changes related to simple scientific ideas and processes;  using straightforward scientific evidence to answer questions or to support their findings. |  | **Pupils should be taught to:**  • 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. |
| WORKING SCIENTIFICALLY | Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:   1. asking relevant questions and using different types of scientific enquiries to answer them; 2. setting up simple practical enquiries, comparative and fair tests; 3. making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers; 4. gathering, recording, classifying and presenting data in a variety of ways to help in answering questions; 5. recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables; 6. reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions; 7. using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions; 8. identifying differences, similarities or changes related to simple scientific ideas and processes;   using straightforward scientific evidence to answer questions or to support their findings. | | | | | |

**Marwood School Science Progression**

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| UKS2 | Autumn A | Spring A | Summer A | Autumn B | Spring B | Summer B |
| **UNITS** | **FORCES (y5)**  Levers / air/ water resistance/ buoyancy  **SCIENTIFIC ENQUIRY:**  Viking Boats  Bread  Food microbiotics  Butter making | **EVOLUTION, INHERITANCE (Y6)**  **AND**  **HUMAN DEVELOPMENT (Y5)**  **ELECTRICITY (6)**  **SCIENCE WEEK:** | **EARTH AND SPACE (5)**  **LIGHT (6)**  **SCIENTIFIC ENQUIRY:**  Light detectives project | **ALL THINGS LIVING: FOCUS ON HUMANS (6)**  Circulation, Heart, blood, human development.  LIFE CARAVAN TO SUPPORT  **SCIENTISTS AND INVENTORS** | **ALL THINGS LIVING: FOCUS ON PLANTS**  Dissection (parts of a plant), life cycles, seed dispersal. (Y5)  **ALL THINGS LIVING: FOCUS ON PLANTS**  Classification (Y6)  **SCIENTIFIC ENQUIRY:**  Mummification | **PROPERTIES AND CHANGES OF MATERIALS (5)**  **STATES OF MATTER / CHANGING STATES**  **SCIENTIFIC ENQUIRY:** Fair testing |
| **AIMS** | Forces  **Pupils should be taught to:**  • 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. | **Pupils should be taught to:**  • describe the changes as   humans develop to old age.  **Pupils should be taught to:**  • 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. | **Pupils should be taught to:**  • 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. | **Pupils should be taught to:**  • 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. | **Pupils should be taught to:**  • 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. | **Pupils should be taught to:**  • 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. |
|  |  | **Pupils should be taught to:**  • 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. | **Pupils should be taught to:**  • 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. |  | **Pupils should be taught to:**  • 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. |  |
| WORKING SCIENTIFICALLY | Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content   1. planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary; 2. taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate; 3. recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs; 4. using test results to make predictions to set up further comparative and fair tests; 5. reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations;   identifying scientific evidence that has been used to support or refute ideas or arguments. | | | | | |
| SCIENTISTS AND INVENTORS | Where relevant in every strand, links are made to other areas of the national curriculum for each year group via the work of famous scientists and inventors so that children can explore the national curriculum aims in a new context and link with other curriculum objectives such as History & D&T. | | | | | |