

# Learn together, grow together

## Progression in Science



*In science, pupils will develop their understanding of the world around them through studying a range of science topics. Pupils will also develop working scientifically skills so that they leave Medina being able to apply their knowledge. All children will be taught Scientific vocabulary and use this when making links between Scientific topics.*

| Skill                           | Reception                                                                                                                                                                                                                                                          | Year 1                                                                                                                                                                                                                           | Year 2                                                                                                                                                                                                                                                                             | Year 3                                                                                                                                                                                                                                                                                | Year 4                                                                                                                                                                                                                                    | Year 5                                                                                                                                                                                                                                                     | Year 6                                                                                                                                                                                                                                                                                                                                                                                                       |
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| <b>Working scientifically</b>   | <p>Explore the natural world around them by making observations and drawing pictures of animals and plants</p> <p>Describe what they can see, hear and feel when in the natural world</p> <p>Use all their senses in hands-on exploration of natural materials</p> | <p>Use different approaches to answer scientific questions (books, pictures, videos)</p> <p>Carry out simple tests (Does all plastic float?)</p> <p>Organise objects or materials into groups (colour, shape, material, use)</p> | <p>Use simple equipment for observations (magnifying glass)</p> <p>Link ideas and answers to observations</p> <p>Collect information to help answer scientific questions (tick sheets, record data)</p>                                                                            | <p>Set up simple fair tests (Will a magnet be attracted to the paperclip if a ruler was in front of it?)</p> <p>Collect and present data from scientific experiments (tables, bar charts)</p> <p>Use results from experiments to draw simple conclusions and suggest improvements</p> | <p>Take accurate measurements using a range of scientific apparatus (measuring jug, metre stick, ruler, thermometer)</p> <p>Present findings using tables, graphs and charts</p> <p>Use clear evidence to support ideas</p>               | <p>Plan Scientific investigations, including controlling variables when appropriate (amount of solute)</p> <p>Record data using diagrams, keys, tables and a range of graphs</p> <p>Report conclusions and explanations from Scientific investigations</p> | <p>Use test results to design further investigations (Does different types of exercise affect heart rate?)</p> <p>Use simple models to describe scientific ideas (adaptation of micro-organisms, circulatory system)</p> <p>Use simple models to describe scientific ideas (adaptation of micro-organisms, circulatory system)</p> <p>Identify scientific evidence to support or refute scientific ideas</p> |
| <b>Animals including humans</b> | <p>Explore natural materials, indoors and outside</p>                                                                                                                                                                                                              | <p>Name the main parts of the body including senses</p>                                                                                                                                                                          | <p>Describe how some plants and animals are suited to different habitats</p> <p>Describe how animals obtain food by eating plants or other animals</p> <p>Describe the basic needs of humans and other animals (food, water and air)</p> <p>Understand that animals, including</p> | <p>Explain some of the functions of skeletons and muscles in animals</p>                                                                                                                                                                                                              | <p>Use a classification key to identify animals</p> <p>Describe simple functions of the basic parts of the digestive systems in humans</p> <p>Construct and interpret a variety of food chains including producers, predator and prey</p> | <p>Describe the life process of reproduction in animals</p> <p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p>                                                                                             | <p>Classify some animals and microorganisms and explain their reasoning</p> <p>Identify how adaptations of some animals over time can lead to evolution</p> <p>Explain the main parts and functions of the human circulatory system, including heart and blood vessels</p>                                                                                                                                   |

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|                             |                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                               | humans, have offspring which grow into adults (PSHE)                   |                                                                                                                                                                                                   |                                                                                                                                         |                                                                                                                                                                                                                                       | Recognise that living things produce offspring which are not usually identical to their parents                                        |
| <b>Plants</b>               | <p>Plant seeds and care for growing plants</p> <p>Understand the key features of the life cycle of a plant and an animal</p> <p>Begin to understand the need to respect and care for the natural environment and all living things</p> <p>Understand the effect of changing seasons on the natural world around them</p> | <p>Name the main parts of plants and trees</p> <p>Describe how the weather varies with the seasons</p>                                                        | Describe basic needs for plant growth (light and water)                | <p>Describe the main requirements for plant growth (air, light, water, nutrients, space)</p> <p>Explain the main stages of plant reproduction (pollination, fertilisation and seed dispersal)</p> | Use a classification key to identify plants                                                                                             | Describe the life process of reproduction in some plants                                                                                                                                                                              | <p>Classify some plants and explain their reasoning</p> <p>Identify how adaptations of some plants over time can lead to evolution</p> |
| <b>Materials and Forces</b> | <p>Explore collections of materials with similar and/or different properties</p> <p>Talk about the differences between materials and changes they notice-cooking/ floating and sinking</p> <p>Explore how things work e.g. pulleys/ cogs)</p>                                                                            | <p>Distinguish between an object and the material from which it is made</p> <p>Describe the simple physical properties of a variety of everyday materials</p> | Describe the different uses of materials according to their properties | <p>Identify the three main rock types (sedimentary, metamorphic, and igneous) and their properties</p> <p>Group materials according to their magnetic properties</p>                              | <p>Compare and group materials together according to their state- solid, liquid or gas</p> <p>Explain the stages of the water cycle</p> | <p>Explain how mixtures can be separated through filtering, sieving and evaporating</p> <p>Explain that some irreversible changes form new materials</p> <p>Identify the effects of air resistance, water resistance and friction</p> |                                                                                                                                        |

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|                        | <p>Explore and talk about different forces they can feel</p> <p>Explore materials with different properties</p> |  |  |                                                                                                  |                                                                          |                                                                                                                                                                                                                         |                                                                                                                                                                       |
| <b>Light and Sound</b> | Explore the natural world-shadows                                                                               |  |  | <p>Notice that light is reflected from surfaces</p> <p>Find patterns in the sizes of shadows</p> | Recognise that vibrations from sounds travel through a medium to the ear | <p>Describe the movement of the Earth and other planets</p> <p>Explain day and night on Earth and the apparent movement of the Sun</p> <p>Explain that gravity causes unsupported objects to fall towards the Earth</p> | Explain that we see things which either emit or reflect light                                                                                                         |
| <b>Electricity</b>     |                                                                                                                 |  |  |                                                                                                  | Construct a simple series circuit identifying and naming basic parts     |                                                                                                                                                                                                                         | <p>Explain how the number of voltage of cells affects bulbs, buzzers or motors in a circuit</p> <p>Use recognised symbols when representing an electrical diagram</p> |