

SCIENCE Year 7 Curriculum End Points and Key Vocabulary

| | Autumn Term 1 | Autumn Term 2 | Spring Term 1 | Spring Term 2 | Summer Term 1 | Summer Term 2 |
|---------------------|--|---|--|---|---|--|
| Ethos Links | <p>Sust. – links to local and global environment, uses of resources</p> <p>STEM – recording data, measuring, data processing</p> <p>MK – local woodlands, local environment</p> <p>Char. – group work</p> | <p>1. STEM – explanations using models</p> <p>2. STEM – explaining observable phenomena</p> <p>STEM – explaining how the body works</p> | <p>1. STEM – explaining observable phenomena</p> <p>2. STEM – comparing organisms</p> <p>STEM – explaining relationships. Sust. – effects of humans on the ecosystem, endangered and extinct species</p> | <p>1. STEM – explaining using models, designing methods to purify water</p> <p>2. STEM</p> <p>STEM – planning for food.</p> <p>Sust. – linking plant reproduction to endangered species and linking to plant security</p> | <p>1. STEM – Designing useful circuits, explaining how circuits work</p> <p>STEM – justifying uses of materials, MK – choices of materials in a local context</p> | <p>Sust. – links to local and global environment, uses of resources</p> <p>STEM – recording data, measuring, data processing</p> <p>MK – local woodlands, local environment</p> <p>Char. – group work</p> |
| Project | <p>Project</p> <p>'Is Milton Keynes a Green Place to Live?'</p> | <p>1. Matter – Particles</p> <p>2. Forces – Contact Forces</p> <p>3. Organisms - Movement</p> | <p>1. Forces – Gravity and the Universe</p> <p>2. Organisms – Cells</p> <p>3. Ecosystems - Interdependence</p> | <p>1. Matter – Separating Mixtures</p> <p>2. Earth – Rocks</p> <p>3. Ecosystems – Plant Reproduction</p> | <p>1. Electromagnets – Electricity and Charge</p> <p>2. Reactions – Metals and Non-Metals</p> | <p>Project</p> <p>1. 'Is Milton Keynes a Green Place to Live?'</p> |
| Learning End Points | <p>By the end of this unit students will know and understand:</p> <ul style="list-style-type: none"> ➤ How different factors affect journey times ➤ How transport options affect the environment ➤ How chemicals can be used to support our everyday life ➤ How to calculate speed, distance and time using the equation $speed = \text{distance} / \text{time}$ (MS3c) | <p>By the end of this unit students will know and understand:</p> <p><u>Matter – Particles</u></p> <ul style="list-style-type: none"> ➤ The arrangement, movement and energy in a solid, liquid and gas ➤ Identify and describe the changes of state ➤ How the properties of solids, liquids and gases can be explained with particle theory | <p>By the end of this unit students will know and understand:</p> <p><u>Forces – Gravity and the Universe</u></p> <ul style="list-style-type: none"> ➤ How to describe gravity and weight as forces and describe the factors that affect it. ➤ How to calculate mass, weight and gravitational field strength using the equation $W = mg$ | <p>By the end of this unit students will know and understand:</p> <p><u>Matter – Separating Mixtures</u></p> <ul style="list-style-type: none"> ➤ What makes a solution, including solvent and solute, and what it means to be soluble ➤ The factors affecting solubility ➤ How mixtures are separated depending on physical | <p>By the end of this unit students will know and understand:</p> <p><u>Electromagnets – Electricity and Charge</u></p> <ul style="list-style-type: none"> ➤ How objects become charged with static electricity ➤ What electrical conductors and insulators are and how they are used ➤ How circuit symbols are used to draw circuit diagrams, | <p>By the end of this unit students will know and understand:</p> <ul style="list-style-type: none"> ➤ How different factors affect journey times ➤ How transport options affect the environment ➤ How chemicals can be used to support our everyday life ➤ How to calculate speed, distance and time using the equation |

| | | | | | | |
|--|--|---|---|--|--|--|
| | <ul style="list-style-type: none"> ➤ How to convert m to km, cm and mm (WS4.3, WS4.5) ➤ How to convert minutes to seconds and hours. (WS4.5) | <ul style="list-style-type: none"> ➤ What diffusion is and the factors that affect the rate of diffusion ➤ What causes gas pressure and explain how it can be changed. <p><u>Forces – Contact Forces</u></p> <ul style="list-style-type: none"> ➤ How forces affect our lives, both usefully and not usefully. ➤ That forces can be contact or non-contact ➤ How to represent balanced and unbalanced forces on force diagrams, and use them to calculate resultant force and direction. ➤ The factors affecting friction and air resistance ➤ The factors affecting squashing and stretching. <p><u>Organisms - Movement</u></p> <ul style="list-style-type: none"> ➤ The four functions of the skeleton ➤ The purpose of bone marrow and how this provides protection against disease. <p>How muscles, bones, joints, tendons and ligaments work together to cause movement.</p> | <ul style="list-style-type: none"> ➤ The objects found in the universe, how they move and what causes this. <p><u>Organisms – Cells</u></p> <ul style="list-style-type: none"> ➤ The main organelles found in animal and plant cells, and the function of each cell organelle ➤ The main features of specialised cells and how these features support it to do its job. ➤ The key parts of a microscope and how to use one ➤ The differences between unicellular and multicellular organisms <p><u>Ecosystems – Interdependence</u></p> <ul style="list-style-type: none"> ➤ What producers, consumers and decomposers are and the role they have in an ecosystem ➤ How food chains are used to represent energy transfers ➤ What bioaccumulation is and how this can impact humans ➤ The causes of a predator-prey relationship and how this can be represented on a graph. | <p>properties, including filtration, evaporation, distillation and paper chromatography</p> <ul style="list-style-type: none"> ➤ How separating techniques work in terms of particles <p><u>Earth – Rocks</u></p> <ul style="list-style-type: none"> ➤ How weathering and erosion occur and the different causes of them. ➤ Properties of the different types of rock, including sedimentary, igneous and metamorphic, and how they are formed. ➤ How rocks are transformed from one type to another in the rock cycle <p><u>Ecosystems – Plant Reproduction</u></p> <ul style="list-style-type: none"> ➤ The key parts of a flower and how these take part in reproduction. ➤ How pollination occurs and what things can affect it. ➤ The stages of fertilisation of a flower. ➤ Methods of seed dispersal including water, wind and animal, and how seeds are adapted for their method of dispersal. | <p>including series and parallel circuits</p> <ul style="list-style-type: none"> ➤ What current and potential difference are and how they change in series and parallel circuits ➤ What resistance is, how to calculate it from current and potential difference <p><u>Reactions – Metals and Non-Metals</u></p> <ul style="list-style-type: none"> ➤ The properties of metals and non-metals ➤ How metals react with oxygen and acids to form new substances ➤ What a displacement reaction is and how these occur | <p>speed=distance/time (MS3c)</p> <ul style="list-style-type: none"> ➤ How to convert m to km, cm and mm (WS4.3, WS4.5) ➤ How to convert minutes to seconds and hours. (WS4.5) |
|--|--|---|---|--|--|--|

| | | | | | | |
|------------------------------|---|---|--|---|--|---|
| <p>Key Vocabulary</p> | <p>Beaker Bunsen burner Speed Average Chemical Dissolve</p> | <p>Particle Evaporate Condense Freeze Melt Sublimation Diffusion Friction Air resistance Resultant force Bone marrow Ligament Antagonistic pair</p> | <p>Weight Gravity Mass Orbit Planet Star Galaxy Solar system Cell Nucleus Cell membrane Cytoplasm Chloroplast Microscope Predator Prey Bioaccumulation</p> | <p>Solute Soluble Solvent Distillation Chromatography Sedimentary Metamorphic Igneous Stigma Style Pollen Filament Anther</p> | <p>Voltage Potential difference Current Resistance Series Parallel Reactant Product Reaction Displacement Thermal conductor Thermal insulator Electrical conductor Electrical insulator Sonorous Ductile Malleable</p> | <p>Beaker Bunsen burner Speed Average Chemical Dissolve</p> |
|------------------------------|---|---|--|---|--|---|