Walkwood
Church of England Middle School

# Science 2023 - 2024

| | Wk | Year 7 — 6 lessons per fortnight: Topic | Learning Content | Assessment |
|---|---|---|---|---|
| Autumn | 1 | Lab Safety | Describe how to safely work in a lab practical<br>Explain how to correctly use a Bunsen burner<br>To describe how to work scientifically<br>Vocabulary:<br>Hazard, risk, equipment, method, analysis, evaluation, hypothesis | |
| | 2 | | | Bunsen Burner Licence |
| | 3 | | | |
| | 4 | Particles & Properties | Apply the particle model when considering states of matter.<br>Explain diffusion.<br>Connect gas pressure to the particle model.<br>Vocabulary:<br>Particle, element, atom, mixture, compound, periodic table, diffusion, concentration, pressure, | |
| | 5 | | | Extended Writing |
| | 6 | | | |
| | 7 | | | End of Topic Test |
| | 8 | Cells and Organisation | Recognise specialised cells under a microscope.<br>Explain how uni-cellular organisms are adapted.<br>Describe how to use a microscope<br>Apply ideas of cells & their adaptations.<br>Explain how the skeleton relates to its function & movement.<br>Explain why some organisms need organ systems.<br>Vocabulary: Skeletal, muscle, tendon, ligament, antagonistic, relax, contract, organism, mitochondria, membrane, nucleus, vacuole, cytoplasm, surface area, nutrients, minerals | |
| | 9 | | | |
| | 10 | | | Extended Writing |
| | 11 | | | |
| | 12 | | | |
| | 13 | | | |
| | 14 | | | |
| | 15 | | | End of Topic Test |
| Spring | 1 | Forces | Explain balanced & unbalanced forces<br>Discover the effects of forces<br>Discover how friction & drag affect an object, including factors that affect the size of frictional or drag forces.<br>Vocabulary: aerodynamic, downforce, equilibrium, friction, contact non-contact | |
| | 2 | | | Extended Writing |
| | 3 | | | |
| | 4 | | | End of Topic Test |
| | 5 | Elements | Identify substances that are elements<br>Define atom, element & compound<br>Compare properties of atom, element & compounds<br>Link behaviour of atoms to properties of a substance<br>Vocabulary: Atoms, element, compound, formula, mass | |
| | 6 | | | |
| | 7 | Human and Plant Reproduction | Know the organs of female & male that are involved.<br>Explain how a foetus develops.<br>Consider changes as a child grows into adulthood.<br>Describe causes of low fertility.<br>Identify parts of the flower & link their structure to their function.<br>Describe plant reproduction.<br>Explain why seed dispersal is important.<br>Vocabulary: Penis, vagina, ovary, testis, adolescence, fertilisation, foetus, contractions, cervix., carpel, anther, stigma, style, stamen, pollen, ovum, ovary, fertilisation, pollination | |
| | 8 | | | Extended Writing |
| | 9 | | | |
| | 10 | | | |
| | 11 | | | |
| | 12 | | | End of Topic Test |
| Summer | 1 | Sound & light | Explain how sound is made, transmitted, absorbed & reflected.<br>Explain how light is made, transmitted, absorbed & reflected.<br>Investigate how light passes through transparent materials: refection & dispersion.<br>Vocabulary: Transmit, absorb, reflect, refract, disperse, opaque, translucent, transparent.<br><br>*This term includes Space delivered as an Independent Learning Project* | |
| | 2 | | | |
| | 3 | | | Extended Writing |
| | 4 | | | |
| | 5 | | | End of Topic Test |
| | 6 | Chemical Reactions | Litmus & UI as indicators.<br>Identify the best indicator.<br>Explain neutralisation reactions.<br>Investigate exothermic & endothermic reactions<br>Vocabulary:<br>Acid, alkali, neutralisation, acidic, alkaline, sulphuric, hydrochloric, litmus, universal indicator | |
| | 7 | | | Extended Writing |
| | 8 | | | End of Topic Test |
| | 9 | STEM Challenges: Period Poverty | To define a problem and design a solution.<br>To test their designs, collect and analyse data, and then revise their designs based on evidence.<br>Vocabulary:<br>Hazard, risk, equipment, method, analysis, evaluation, hypothesis | |
| | 10 | Classroom Olympics | | End of Year Assessment |
| | 11 | Balloon Rockets | | |
| | 12 | Stop the spread | | |

| | Year 8 — 6 lessons per fortnight: Topic | Learning Content | Assessment |
|---|---|---|---|
| | The Periodic Table | Know how symbols & atomic numbers are used in the Periodic Table.<br>Describe some properties of metals & non-metals<br>Interpret data to describe properties of Group 1<br>Use patterns to predict properties of Group 0,1 & 7<br>Vocabulary: Reactivity series, alkali metals, transition metals. Group, period, reactive | |
| | | | Extended Writing |
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| | | | End of Topic Test |
| | Health &Lifestyle | Describe healthy & unhealthy diets.<br>Describe adaptations in the digestive system.<br>Calculate the energy requirements of people<br>Explain why testing food for starch, lipids, sugars & protein is important<br>Describe the dangers associated in drug use & alcohol<br>Vocabulary: Enzyme, protein, lipid, sugar, starch, recreational, alcohol, small intestine, villi | |
| | | | |
| | | | Extended writing |
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| | | | End of Topic Test |
| | Electricity & Magnetism | Investigate, voltage, current & resistance in a circuit.<br>Calculate resistance.<br>Investigate the strength of electromagnets.<br>Examine & construct electrical energy transfers diagrams.<br>Vocabulary: Resistance, ohms, electromagnet, core, repeatability, dissipated, transfer. positive charge, negative charge, attract, repel. | |
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| | | | Extended Writing |
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| | | | End of Topic Test |
| | Separation Techniques | Investigate mixtures, solutions, solubility, filtration, evaporation, distillation & chromatography.<br>Vocabulary: solution, solvent, solute, chromatogram, chromatography, dissolve, pure, solubility | |
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| | | | End of Topic Test |
| | Energy | Describe how an object's temperature changes over time when heated or cooled.<br>Define the three forms of heat transfer<br>Explain how a method of thermal insulation works.<br>Vocabulary: Increase, decrease, line graph, curve, latent heat, radiation, convection, conduction, insulation, energy transfer | |
| | | | Extended Writing |
| | | | End of Topic Test |
| | Ecosystem Processes | Describe predator prey cycles<br>Using food webs & chains, explain effects of environmental changes.<br>Describe the process of respiration & photosynthesis<br>Compare anaerobic & aerobic respiration<br>Vocabulary: Energy, respiration, photosynthesis, mitochondrion, food chain, interdependence | |
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| | | | Extended Writing |
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| | | | End of Topic Test |
| | Metals & Materials | Describe what happens when metals react with acids<br>Explain the test for hydrogen gas.<br>Compare the reactions of different metals with oxygen<br>List some uses of ceramics<br>Distinguish between polymers, ceramics and composites<br>Vocabulary: ceramic, metal, ore, polymer<br><br>*This term includes The Earth delivered as an Independent Learning Project* | |
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| | | | End of Topic Test |
| | Adaptation & Inheritance | Explain the causes of extinction & natural selection.<br>Consider the theories of survival of the fittest<br>Describe the adaptations of common animals<br>Explain how different adaptations supports the survival of animals in different environments<br>Vocabulary: Inherit, traits, characteristics, genes, deoxyribonucleic acid, fertilisation, adaptations, Darwin, survival of the fittest, natural selection. | |
| | | | Extended Writing |
| | | | End of Topic Test |
| | STEM Challenges: Forensics: Blood Spatter | To define a problem and design a solution.<br>To test their designs, collect and analyse data, and then revise their designs based on evidence.<br>Vocabulary:<br>Hazard, risk, equipment, method, analysis, evaluation, hypothesis | |
| | Forensics: Urine | | End of Year Assessment/ GL |
| | Forensics: Hair and Fibre | | |
| | Moja Island | | |

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