

Hartford Church of England High School – Year 9 – Science

| Year 9 | Topic 1 | Topic 2 | Topic 3 | Topic 4 | Topic 5 | Topic 6 |
|--------------------------|--|--|---|---|--|---|
| Topic(s) | Key Concepts of Physics | Motion and Forces | States of Matter | Methods of Separating & Purifying Substances | Key Concepts in Biology | Conservation of Energy |
| Focus | Distance / time graphs Velocity / Time graphs Acceleration Newton's Laws of Motion Mass & weight Momentum Stopping Distances | Acceleration Newton's Laws of Motion Mass & weight Momentum Stopping Distances | States of Matter | Separation Techniques (filtering, evaporation, crystallisation, distillation & chromatography) Drinking water | Microscopes Plant & animal cells Specialised cells Enzymes & their action Factors affecting enzyme activity Osmosis | Stores of energy Energy transfers Stored energy Generating electricity using energy resources |
| Vocabulary | Scalar, Vector, Magnitude, Speed, Velocity, Distance, Acceleration, Quantity, Force, Direction | Acceleration, Deceleration, Resultant Force, Mass, Weight, Action-reaction, Momentum, Thinking distance, Braking distance, Stopping distance | Pure, Crystallization, Filtrate, Insoluble, Soluble, Residue, Solute, Solvent, Solution, Mobile phase, Stationary phase | Pure, Crystallization, Filtrate, Insoluble, Soluble, Residue, Solute, Solvent, Solution, Mobile phase, Stationary phase | Magnification, Resolution, Denature, Enzyme, Active site, Eukaryotic, Prokaryotic, Haploid, Osmosis, Optimum, Diffusion | Mitosis, Percentile, Diploid, Haploid, Meristem, Differentiation, Neuron, |
| Assessment | Mid-stakes: Extended Writing - Acceleration Due to Gravity & Mid-stakes: Extended Writing - Describe Motion in D-T Graph - | Mid-stakes: Extended Writing - Circular Motion & Mid-stakes: Extended Writing - Stopping Distances | Mid-stakes: Extended Writing - States of Matter | Mid-stakes: Extended Writing - Methods of Separation | Mid-stakes: Extended Writing - Enzymes & Temperature & Mid-stakes: Extended Writing - Enzymes in Digestion | Mid-stakes: Extended Writing - Energy Transfers in a Car & Mid-stakes: Extended Writing - Energy Transfers in a Wrecking Ball |
| Curriculum Thread | Motion & Forces | Motion & Forces | The Periodic Table | The Periodic Table | Structure & Function of Living Organisms | Energy |
| Wider Reading | Forces, Motion and Pressure: A Handy Guide to Key Stage 3 Physics | Forces, Motion and Pressure: A Handy Guide to Key Stage 3 Physics | KS3 BBC Bitesize Fun Science: A Guide to Life, The Universe & Why Science Is So | KS3 BBC Bitesize Fun Science: A Guide to Life, The Universe & Why Science Is So | KS3 BBC Bitesize Fun Science: A Guide to Life, The Universe & Why Science Is So | KS3 BBC Bitesize Fun Science: A Guide to Life, The Universe & Why Science Is So |

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| | KS3 BBC Bitesize | KS3 BBC Bitesize | Awesome – Charlie McDonnel The Periodic Tales: The Curious Lives of the Elements | Awesome – Charlie McDonnel | Awesome – Charlie McDonnel The Body – Bill Bryson Horrible Science by Nick Arnold and Phil Gates | Awesome – Charlie McDonnel |
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| Year 9 | Topic 7 | Topic 8 | | | | |
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| Topic(s) | Atomic Structure & The Periodic Table | Cells and Control | | | | |
| Focus | Structure of an atom Atomic number & atomic mass The Periodic table Electron configuration | Mitosis Stem cells The nervous system Reflexes & the reflex arc | | | | |
| Vocabulary | Proton, Neutron, electron, Nucleus, Subatomic, Isotope, Group, Period, Configuration, Element, Compound | Mitosis, Percentile, Diploid, Haploid, Meristem, Differentiation, Neuron, Reflex, Impulse, Synapse | | | | |
| Assessment | Mid-stakes: Extended Writing - Describe Atomic Model & The Periodic Table | Mid-stakes: Extended Writing - Stem Cells & Mid-stakes: Extended Writing - Reflexes | | | | |
| Curriculum Thread | The Periodic Table | Humans & Animals | | | | |
| Wider Reading | KS3 BBC Bitesize | KS3 BBC Bitesize The Body – Bill Bryson | | | | |

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| | <p>Fun Science: A Guide to Life, The Universe & Why Science Is So Awesome – Charlie McDonnel</p> <p>The Disappearing Spoon...and Other True Tales from the Periodic Table</p> | | | | | |
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