

KS3 Curriculum Map

Yr: 7

Subject: Science

Term	Content	Skills	Type of Assessment
1	<p><u>Introduction to Science</u> / primary transition Students will cover the following - How Science Works – practice essential skills for science lessons.</p> <p><u>Particles</u> Students will cover the following - Using models to explain physical states of matter (AF1)/ Understanding matter and explaining state changes (AF4)/ Explaining the properties of matter (AF1)</p>	<p>Safety skills Conducting risk assessments- using Bunsen burner's and Microscopes/ Measuring skills/ Observational skills/ Literacy and numeracy skills in writing up investigations/ communication skills/ using modelling and understanding the implications and applications of science</p> <p>Communicating ideas about environmental issues and atom economy/ Learning to be together in small groups – working in groups to do experiment – to avoid arguments and work constructively to achieve - (theme 1)/ SEAL theme 2 – Motivation – pupils to role play how molecules behave when they diffuse – create a fun learning environment, to allow pupils to express their understanding. PLTS</p>	<p>Self Assessment and Peer Assessment – teacher records data</p> <p>End of Skills Topic Test- Exam style questions assessing key words, definitions, calculation, graph work and content understanding - extended answers.</p> <p>End of Particles Test- Level assessed Task where students are given levelled criteria to produce an examined piece of work.</p> <p>Results recorded in department for tracking purposes also used as MA1</p>
2	<p><u>Cells and Reproduction</u> Students will cover the following- Living body processes and cell structures/ adaptations of cell/ organ systems and organs/cells and organisms/sex cells/ plant reproduction/ human reproduction (fertilisation to birth).</p> <p><u>Astronomy</u> Students will cover the following - Explaining and analysing how forces interact with each other to explain how the universe was formed, how the solar system exists and how all the other stellar objects interact and affect each other. To understand the structure of the Earth and why phenomena such as day and night or seasons occur.</p>	<p><u>Numeracy</u> -Calculating magnifications/ recording an observation with drawings. Planning an investigation and carrying out an investigation. Communication ideas in science and how science works.</p> <p><u>Literacy</u> – writing about how a scientist discovered cells/ newspaper article/ story boards / creative writing.</p> <p>Modelling ideas about the solar system, thinking creativity – life on other planets.</p> <p><u>Numeracy</u> - calculating and graphing data about planets distances and temperatures.</p>	<p>Self Assessment and Peer Assessment – teacher records data.</p> <p>End of Cells and Reproduction Topic Test - Level Assessed Task where students are given levelled criteria to produce an examined piece of work.</p> <p>End of Astronomy Topic Test- Exam style questions assessing key words, definitions and content understanding - extended answers.</p> <p>Results recorded in department for tracking purposes also used as MA2</p>
3	<p><u>Digestion and Respiration</u> - Students will cover the following -Describing the body systems required for digestion and respiration. Analysing key adaptations and explaining how they relate to function.</p> <p><u>Solutions, compounds and mixtures</u> Students will cover the following – To analyse the arrangement of particles in solutions, compounds and mixtures. To explore separation and analytical techniques used to determine the identity of solutions, compounds and mixtures.</p>	<p><u>Literacy</u> – writing descriptions of routes through various body systems/ story boards / creative writing/ wanted posters.</p> <p>Modelling the particles in solutions, mixtures and compound, PLTS used during investigations.</p> <p><u>Numeracy</u>- weighing, calculating retention time for chromatography.</p>	<p>Self Assessment and Peer Assessment – teacher records data.</p> <p>End of Digestion and Respiration Topic Test - Level Assessed Task where students are given levelled criteria to produce an examined piece of work.</p> <p>End of Solutions, compounds and mixtures Topic Test- Exam style questions assessing key words, definitions and content understanding - extended answers.</p> <p>Results recorded in department for tracking purposes also used as MA3</p>

4	<p><u>Forces and Speed</u> Students will cover the following - To understand the application of forces in our everyday lives. To examine the impacts of forces on economy and in particular transport.</p>	<p><u>Literacy</u> - comprehension in research activity – production of a newspaper or magazine article describing drag resistance used in past Olympic games. Write up of investigations carried out. <u>PLTS</u> <u>Numeracy</u> - Using and reading Newton meters. Measurements of mass, time, length. Table and graph work. Calculations of density from measurements of volume and mass.</p>	<p>Self Assessment and Peer Assessment – teacher records data.</p> <p>End of Forces and Speed Topic Test- Exam style questions assessing key words, definitions and content understanding - extended answers.</p> <p>Results recorded in department for tracking purposes also used as MA4</p>
5	<p><u>Acids and Alkali</u> Students will cover the following – To investigate the reactions of acids with metals and metal carbonates. To examine various acids and alkali solutions. To perform neutralisation reactions. To link knowledge of acids to environmental chemistry issues, acid rain.</p>	<p><u>Literacy</u> – To write a report encapsulating investigation data and research based on acid rain. <u>Numeracy</u> – To use the pH scale. To work out neutralisation points, to work out mean, mode and range in results.</p>	<p>Self Assessment and Peer Assessment – teacher records data.</p> <p>End of Acids and Alkali Topic Test - Level Assessed Task where students are given levelled criteria to produce an examined piece of work.</p> <p>Results recorded in department for tracking purposes also used as MA5</p>
6	<p><u>Ecology and feeding Relationships</u> Students will cover the following – To analyse adaptations and competition within various habitats. To assess the effect of changing environments on organisms. To examine relationships between species including food webs, pyramids of number and pyramids of biomass.</p>	<p><u>Literacy</u> – To write detailed descriptions of adaptations and competition. To write creatively about predation. <u>Numeracy</u> – Drawing pyramids of number and pyramids of biomass. To calculate energy flow through a food chain.</p>	<p>Self Assessment and Peer Assessment – teacher records data.</p> <p>End of Ecology and Feeding Relationships Topic Test - Level Assessed Task where students are given levelled criteria to produce an examined piece of work.</p> <p>End of year Synoptic Test- Exam style questions assessing key words, definitions and content understanding - extended answers.</p> <p>Results recorded in department for tracking purposes also used as MA6</p>

KS3 Curriculum Map

Yr:8

Subject: Science

Term	Content	Skills	Type of Assessment
1	<p><u>Chemical Reactions</u> Students will cover the following- To examine chemical and physical reactions. To write word and symbol equations for reactions. To calculate rates of reaction and to analyse the factors which affect the rate of a reaction.</p> <p><u>Reproduction</u> Students will cover the following- To examine the reproductive organs of both plants and humans. To explain the route of the ovum and pollen / egg and sperm in the process of fertilisation. To comprehend the stages of growth, pregnancy and birth. To analyse the body changes which occur during the life time of humans</p>	<p><u>Literacy</u> To write up methods, analysis and conclusions. <u>Numeracy</u>-Calculating rates of reaction/timing/weighing</p> <p>PLTS</p> <p><u>Literacy</u>- To produce story boards/ creative writing to explain models. PLTS Modelling ideas about reproduction, thinking creativity.</p>	<p>Self-Assessment and Peer Assessment – teacher records data</p> <p>End of Chemical Reactions Topic Test- Exam style questions assessing key words, definitions, calculation, graph work and content understanding - extended answers.</p> <p>End of Reproduction Topic Test- Level assessed Task where students are given levelled criteria to produce an examined piece of work.</p> <p>Results recorded in department for tracking purposes also used as MA1</p>
2	<p><u>Waves</u> Students will cover the following – To compare longitudinal and transverse waves. To visualise the physical laws of light (reflection, refraction and dispersion) and calculate the angles involved.</p>	<p><u>Numeracy</u>- To measure angles using a protractor. To calculate angles of reflection and refraction. To calculate the speed of a wave.</p> <p>PLTS</p>	<p>Self- Assessment and Peer Assessment – teacher records data.</p> <p>End of Waves Topic Test- Exam style questions assessing key words, definitions and content understanding - extended answers.</p> <p>Results recorded in department for tracking purposes also used as MA2</p>
3	<p><u>Rocks and Weathering</u> Students will cover the following – To analyse how sedimentary, igneous and metamorphic rocks form. To model the transport and formation of the rock types. To investigate the effect of acid rain on the rock types.</p> <p><u>Inheritance and Variation</u> Students will cover the following- To comprehend how genes are passed on and how variation can occur. To investigate variation. To evaluate the use of cloning.</p>	<p><u>Literacy</u> - To write a report based on evidence of rock ages/ explain how rocks form/ Produce rock wanted posters. Explain models. PLTS Various models will be used to explain rock transportation and formation.</p> <p><u>Literacy</u>- To produce newspaper articles/ presentations/ debates. PLTS</p>	<p>Self- Assessment and Peer Assessment – teacher records data.</p> <p>End of Rocks and Weathering Topic Test - Level Assessed Task where students are given levelled criteria to produce an examined piece of work.</p> <p>End of Inheritance and Variation Topic Test- Exam style questions assessing key words, definitions and content understanding - extended answers.</p> <p>Results recorded in department for tracking purposes also used as MA3</p>
4	<p><u>Energy</u> Students will cover the following – To investigate energy transfers through solids, liquids and gases. To</p>	<p><u>Literacy</u>- Design explanations and justifications/ practical write ups.</p>	<p>Self -Assessment and Peer Assessment – teacher records data.</p>

	<p>investigate insulation properties. To calculate and assess energy transfer.</p> <p><u>Metals and the Reactivity series</u> Students will cover the following – To examine reactions of metals and assess their reactivity. To link metal properties with metal uses.</p>	<p><u>Numeracy</u>- Calculate energy transfers/ use of thermometers/ scale/ range/ mean. PLTS</p> <p><u>Literacy</u> – mnemonic writing/ method writing/ analysis and conclusions/ research on metal properties and uses. PLTS</p>	<p>End of Energy Topic Test - Level Assessed Task where students are given levelled criteria to produce an examined piece of work.</p> <p>End of Metals and the Reactivity Series Topic Test- Exam style questions assessing key words, definitions and content understanding - extended answers.</p> <p>Results recorded in department for tracking purposes also used as MA4</p>
5	<p><u>Electricity</u> Students will cover the following- To build working circuits. To explain how electricity flows and how a circuit works. To investigate the uses of electricity to build electromagnets.</p>	<p><u>Literacy</u> - Method writing/ analysis and conclusions PLTS</p> <p><u>Numeracy</u> – calculate current. Voltage and resistance.</p>	<p>Self -Assessment and Peer Assessment – teacher records data.</p> <p>End of Electricity Topic Test- Exam style questions assessing key words, definitions and content understanding - extended answers.</p> <p>Results recorded in department for tracking purposes also used as MA5</p>
6	<p><u>Ecology</u> Students will cover the following - To analyse adaptations and competition within various habitats. To assess the effect of changing environments on organisms. To examine relationships between species.</p> <p><u>Photosynthesis Project</u> Students will cover the following – To write the word equation for photosynthesis. To link the word equation with the location in the plant. To Investigate the limiting factors of photosynthesis.</p>	<p><u>Literacy</u> – To write detailed descriptions of adaptations and competition. To write creatively about predation</p> <p><u>Literacy</u>- Research/ report writing/ method writing/ analysis and conclusions</p> <p><u>Numeracy</u>- calculating the rate.</p>	<p>Self- Assessment and Peer Assessment – teacher records data.</p> <p>End of Ecology and Feeding Relationships Topic Test - Level Assessed Task where students are given levelled criteria to produce an examined piece of work.</p> <p>End of year Synoptic Test- Exam style questions assessing key words, definitions and content understanding - extended answers.</p> <p>Results recorded in department for tracking purposes also used as MA6</p>

KS3 Curriculum Map

Yr:9 (sets 2-4)

Subject: Science

Term	Content	Skills	Type of Assessment
1	<p><u>Energy</u> Students will cover the following – To investigate energy transfers through solids, liquids and gases. To investigate insulation properties. To calculate efficiency and assess energy transfer.</p> <p><u>Cells</u> Students will cover the following – To analyse the organelles of animal and plant cells. To examine adaptations of specialised cells cell. To link cells to tissues, organs and organ systems in animals and plants.</p> <p><u>Atomic Structure</u> Students will cover the following – To examine the contents of atoms. To draw electron arrangements of various elements. To analyse bonding between elements (covalent, ionic and metallic).</p>	<p><u>Literacy</u>- Design explanations and justifications/ practical write ups.</p> <p><u>Numeracy</u>- Calculate energy transfers/ use of thermometers/ scale/ range/ mean. PLTS</p> <p><u>Numeracy</u> -Calculating magnifications/ recording an observation with drawings. Planning an investigation and carrying out an investigation. Communication ideas in science and how science works.</p> <p><u>Literacy</u> – writing about how a scientist discovered cells/ newspaper article/ story boards / creative writing.</p> <p><u>Numeracy</u> – calculating number of protons, neutrons and electron/ calculating atomic mass/ conservation of mass calculations.</p>	<p>Self -Assessment and Peer Assessment – teacher records data</p> <p>End of Energy Topic Test- Exam style questions assessing key words, definitions, calculation, graph work and content understanding - extended answers.</p> <p>End of Cells Topic Test- Level assessed Task where students are given levelled criteria to produce an examined piece of work.</p> <p>End of Atomic Structure Topic Test- BTEC style Assignment</p> <p>Results recorded in department for tracking purposes also used as MA1</p>
2	<p><u>Waves</u> Students will cover the following – To compare longitudinal and transverse waves. To visualise the physical laws of light (reflection, refraction and dispersion) and calculate the angles involved. To examine how sound waves travel and how the wave alters with differing pitch and volume.</p> <p><u>Body Systems</u> Students will cover the following – To examine the respiratory system, circulatory system, digestive system, nervous system and endocrine system. To describe the links between the body systems.</p> <p><u>Organic Chemistry</u> Students will cover the following – To draw various hydrocarbons. To explain fractional distillation. To evaluate the use of conventional fuels vs. biofuels. To assess the production and use of polymers.</p>	<p><u>Numeracy</u>- To measure angles using a protractor. To calculate angles of reflection and refraction. To calculate the speed of a wave. To calculate the speed of sound. PLTS</p> <p><u>Literacy</u>- To create leaflets/ newspaper article/ story boards.</p> <p><u>Numeracy</u>- To calculate the structure of alkanes and alkenes based on their general formula.</p> <p><u>Literacy</u>-Research polymer uses.</p>	<p>Self - Assessment and Peer Assessment – teacher records data.</p> <p>End of Wave Topic Test- Exam style questions assessing key words, definitions, calculation, graph work and content understanding - extended answers.</p> <p>End of Body System Topic Test- BTEC style Assignment</p> <p>End of Organic Chemistry Topic Test- Exam style questions assessing key words, definitions, calculation, graph work and content understanding - extended answers.</p> <p>Results recorded in department for tracking purposes also used as MA2</p>
3	<p><u>Skills and ISA Practice</u> Students will focus on learning the key how science works words, definitions and practical skills that are essential for success at GCSE.</p>	<p><u>Literacy</u>- To write a method/ risk assessment/ to research key areas.</p> <p><u>Numeracy</u>- Graph drawing/ calculating a mean/ spotting</p>	<p>Self - Assessment and Peer Assessment – teacher records data.</p> <p>Students will undertake assessed ISA style questions</p>

	<p><u>Ecology</u> Students will cover the following – To analyse relationships with in species and between species. To investigate the distribution of organisms and factors that effects this. To examine environmental indicators and what they have reveal about climate change.</p>	<p>anomalous results.</p> <p><u>Literacy</u> – To write detailed descriptions of adaptations and competition. To write creatively about predation and competition. To research changes in the environment and link this to environmental indicators.</p>	<p>(Internal Skills Assessment- AQA GCSE coursework).</p> <p>End of Ecology Topic Test- Exam <u>style</u> questions assessing key words, definitions and content understanding - extended answers.</p> <p>Results recorded in department for tracking purposes also used as MA3</p>
4	<p><u>Electricity</u> Students will cover the following –To build working circuits, series and parallel. To explain how electricity flows and how a circuit works. To investigate resistance. To calculate the energy and power in a circuit. To draw</p> <p><u>Rates ISA Practice</u> Alongside learning rates of reactions, students will focus on learning/practicing the key how science works words, definitions and practical skills that are essential for success at GCSE.</p>	<p><u>Literacy</u> - Method writing/ analysis and conclusions PLTS</p> <p><u>Numeracy</u> – calculate current. Voltage and resistance.</p> <p><u>Literacy</u>- To write a method/ risk assessment/ to research key areas.</p> <p><u>Numeracy</u>- Graph drawing/ calculating a mean/ spotting anomalous results.</p>	<p>Self - Assessment and Peer Assessment – teacher records data.</p> <p>End of Electricity Topic Test- BTEC style Assignment</p> <p>Students will undertake assessed ISA <u>style</u> questions (Internal Skills Assessment- AQA GCSE coursework).</p> <p>Results recorded in department for tracking purposes also used as MA4</p>
5	<p><u>Revision</u> Students will revise the biology, chemistry and physics topics covered during the year concentrating on exam technique and achieving their potential.</p>	<p><u>Literacy</u>- Long answer evaluation exam questions/ explain/ describe exam questions.</p> <p><u>Numeracy</u> –where appropriate to the topic above.</p>	<p>Self - Assessment and Peer Assessment – teacher records data.</p> <p>Students undertake a mock synopsis exam which determines KS4 academic route.</p> <p>Results recorded in department for tracking purposes also used as MA5</p>
6	Start GCSE Science		