Science Curriculum Map

Key Stage 3: Group 4 - Year 7

| At lower and mid key stage 3 science, pupils study similar topics. However, the tasks are differentiated as appropriate by the teacher to meet the needs of the pupils being taught. | | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Autumn 1 Science | Autumn 2 Science | Spring 1 Science | Spring 2 Science | Summer 1 Science | Summer 2 Science |
| Group 4 (Lower KS3) Biology cells, specialised cells, model animal cell, model plant cell, the differences between animal and plant cells, observe cells under a microscope, organs of the human body. | Group 4 (Lower KS3) Biology Carbohydrates, healthy diet, lipids, oils and fats, vitamins and minerals, digestion, model digestion using tights, dietary fibre, food energy, starch, starch into glucose, malnutrition, obesity, Glucose. | Group 4 (Lower KS3) Chemistry Solids, liquids and gases, Separating mixtures, periodic table, reactions, Types of reaction, combustion. | Group 4 (Lower KS3) Chemistry Acids and alkalis, pH scale, neutralisation, Metals, Ceramics, polymers, carbon dioxide, Rocks, Fossil fuels, Methane gas, food energy. | Group 4 (Lower KS3) Physics Domestic energy, solar energy, combustion, Fuels and energy resources, Energy stores and transfers, forces, gravity, pressure, water pressure, magnetism, make a magnetic compass | Group 4 (Lower KS3) Physics light waves, sound waves, Light waves, electricity, Static electricity, Electric current and potential difference |
| Teacher assessments | End of unit test | Teacher assessments | End of unit test | Teacher assessments | End of unit test |

SMSC / FBVs: In Key Stage 3 SMSC is intertwined into all topics. Topics on genetic variation, diet and smoking especially lead to cultural, moral and social discussions. Energy resources and the environment have an ethical element to them. All topics have a practical element that promote group work, taking turns and the developing of risk assessment. In Key Stage 4 these topics are further developed with work covered on stem cell research, sex education, population and pollution, drugs and the history of Science. All students are encouraged to take part in ethical discussions regarding new developments in Science as well as developing their own social skills to promote learning.

Literacy: Promote metacognitive talk and dialogue in the classroom, carefully select the vocabulary to teach and focus on the 'most tricky' words show the links between words and their composite parts, use activities to engage pupils with reading scientific text and help them to comprehend it, support pupils to develop their scientific writing skills, read and understand scientific terms and texts, communicate knowledge and ideas using the language of science, listen and read critically and assess the value of what they hear and read.

Numeracy: Gather data by making observations and taking measurements, process data using calculation, tabulation, graphing skills, interpret data by identifying patterns and trends, calculate and predict values, make judgments about accuracy of data, consider issues of uncertainty and reliability.

Key Stage 3: Group 3 - Year 8

| At lower and mid key stage 3 science, pupils study similar topics. However, the tasks are differentiated as appropriate by the teacher to meet the needs of the pupils being taught | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--|
| Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | |
| Group 3 (Mid KS3) | Group 3 (Mid KS3) | Group 3 (Mid KS3) | Group 3 (Mid KS3) | Group 3 (Mid KS3) | Group 3 (Mid KS3) | |
| Biology Inside the body Health and nutrition Muscles, respiration and the circulatory system Diseases, Controlling the body | Biology Sunlight, water and food chains Death and decay Pollution Sex and survival (reproduction, genetics) Animals and plants | Chemistry Substances Atoms, elements and compounds Metals and non-metals, periodic table Plastics | Chemistry Acids and alkalis Chemistry and energy Fuel and fires Air and water | Physics Energy and energy sources Forces, speed and safety | Physics Electricity, Charge and current, Magnets and electromagnets Sound Light | |
| Teacher assessments | End of unit test | Teacher assessments | End of unit test | Teacher assessments | End of unit test | |

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Numeracy: Gather data by making observations and taking measurements, process data using calculation, tabulation, graphing skills, interpret data by identifying patterns and trends, calculate and predict values, make judgments about accuracy of data, consider issues of uncertainty and reliability.

Science Curriculum Map

Key Stage 3: Group 2 - Year 9

| Autumn 1 Science | Autumn 2 Science | Spring 1 Science | Spring 2 Science | Summer 1 Science | Summer 2 Science |
|--------------------------|-------------------------|--------------------------------|---------------------------|----------------------------|---------------------------|
| Group 2 (Upper KS3) | Group 2 (Upper KS3) | Group 2 (Upper KS3) | Group 2 (Upper KS3) | Group 2 (Upper KS3) | Group 2 (Upper KS3) |
| Biology | Biology | Chemistry | Chemistry | Physics | Physics |
| Organisms | Genes | Matter | Earth | Forces | Energy |
| Movement | Variation | Particle model | Earth Structure | Speed | Energy costs |
| Enquiry: How similar are | Enquiry: Exploring | Enquiry: Solid, liquid or | Enquiry: Modelling stages | Enquiry: What affects the | Enquiry: Running costs of |
| chicken wings and | continuous and | gas? | in the rock cycle. | speed of a toy car on a | light bulbs. |
| human arms? | discontinuous variation | Separating mixtures | Universe | slope? | Energy transfers |
| Cells | and survival. | <u>Enquiry:</u> Case study – A | Enquiry: Changing ideas | Gravity | |
| Enquiry: Using a light | Human reproduction | fraudulent Will. | about the solar system. | Enquiry: Journey to the | Waves |
| microscope. | Enquiry: The effect of | | | moon. | Sound |
| Ecosystems | drugs and alcohol on | Reactions | | Electromagnetism | Light |
| Interdependence | unborn children. | Metals and non-metals | | Voltage and resistance | Enquiry: Heliographs |
| Enquiry: Introducing an | | Enquiry: Making a | | Enquiry: How do the | |
| alien species into the | | reactivity series. | | potential difference and | Exam Preparation |
| ecosystem. | | Acids and alkalis | | current change in a series | May/June |
| Plant reproduction | | Enquiry: Which is the | | circuit? | Certificate skills exams |
| Enquiry: What is the | | best indigestion remedy? | | Current | |
| most effective | | | | | |
| helicopter fruit? | | | | | |
| Teacher assessments | | | | | End of unit test |
| | End of unit test | Teacher assessments | End of unit test | Teacher assessments | |

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Science Curriculum Map

Key Stage 4 & Post 16: Group 1 - Years 10, 11, 12, 13

| Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Science | Science | Science | Science | Science |
| Group 1 – Year 1 (KS4) | Group 1 – Year 1 (KS4) | Group 1 – Year 1 (KS4) | Group 1 – Year 1 (KS4) | Group 1 – Year 1 (KS4) |
| FS Level 1- GCSE | FS Level 1- GCSE | FS Level 1- GCSE | FS Level 1- GCSE | FS Level 1- GCSE |
| Biology | Chemistry | Chemistry | Physics | |
| Plant tissues, organs and | Atomic structure and the | Chemical changes | Energy | Revision and exam/test |
| organ systems. | periodic table. | Energy changes | Electricity | practice. |
| Infection and response | Bonding structure and | Formula and equations | Particle model of matter | |
| Photosynthesis | properties of matter. | | Atomic structure | |
| Respiration | Quantitative chemistry | | | |
| | | | - · · | |
| End of unit test | leacher assessments | End of unit test | leacher assessments | Sit exams May |
| | | | | |
| Group 1 – Year 2 (KS4) | Group 1 – Year 2 (KS4) | Group 1 – Year 2 (KS4) | Group 1 – Year 2 (KS4) certificate Level 2- GCSE | |
| Certificate Level 2- GCSE | Certificate Level 2- GCSE | Certificate Level 2- GCSE | Objective: preparation for May exam. | |
| Chemistry: Elements. | Physics: Energy, forces | Physics: Electricity. | Revision all topics | |
| mixtures and | and the structure of | magnetism and waves | How to read mathematical questions. AQA Certificate skills past exam papers AQA LEVEL 1 AND 2 TEXT BOOKS | |
| compounds | matter | | | |
| Chemistry: Chemistry | matter | | | |
| in our world | | | | |
| | | | Exam preparation | |
| | | | Sit exams May | |
| | Autumn 2 Science Group 1 – Year 1 (KS4) FS Level 1- GCSE Biology Plant tissues, organs and organ systems. Infection and response Photosynthesis Respiration End of unit test Group 1 – Year 2 (KS4) Certificate Level 2- GCSE Chemistry: Elements, mixtures and compounds, Chemistry: Chemistry in our world | Autumn 2Spring 1ScienceScienceGroup 1 - Year 1 (KS4)Group 1 - Year 1 (KS4)FS Level 1- GCSEFS Level 1- GCSEBiologyChemistryPlant tissues, organs and organ systems.Atomic structure and the periodic table.Infection and response Photosynthesis RespirationBonding structure and properties of matter. Quantitative chemistryEnd of unit testTeacher assessmentsGroup 1 - Year 2 (KS4) Certificate Level 2- GCSEGroup 1 - Year 2 (KS4) Certificate Level 2- GCSEChemistry: Elements, mixtures and compounds, Chemistry: Chemistry in our worldGroup 1 - Year 2 (KS4) Certificate Level 2- GCSE | Autumn 2 ScienceSpring 1 ScienceSpring 2 ScienceGroup 1 - Year 1 (KS4) FS Level 1- GCSEGroup 1 - Year 1 (KS4) FS Level 1- GCSEGroup 1 - Year 1 (KS4) FS Level 1- GCSEGroup 1 - Year 1 (KS4) FS Level 1- GCSEBiology Plant tissues, organs and organ systems. Infection and response Photosynthesis RespirationAtomic structure and the periodic table. Bonding structure and properties of matter. Quantitative chemistryChemistry ChemistryEnd of unit testTeacher assessmentsEnd of unit testGroup 1 - Year 2 (KS4) Certificate Level 2- GCSEGroup 1 - Year 2 (KS4) | Autumn 2 ScienceSpring 1 ScienceSpring 2 ScienceSummer 1 ScienceGroup 1 - Year 1 (KS4) FS Level 1- GCSEGroup 1 - Year 1 (KS4) FS Level 1- GCSEFS Level 1- GCSE FS Level 1- GCSEFS Level 1- GCSE <td< td=""></td<> |

Post 16 Science

Pupils studying at post 16 level can follow Functional Skills certificate level or GCSE Science as outlined above.

Additional Courses

AQA Unit Award Scheme (UAS) - Units include: Environment, Light and sound, Energy transfer, Electrical energy, Earth and the atmosphere, The human body, Elements, mixtures and compounds, Chemistry in or world, Energy, forces, and the structure of matter.

Pupils can also engage in Science related **ASDAN** Courses

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