



YEAR 7 - SCIENCE CURRICULUM MAP

Autumn Term	Spring Term	Summer Term
<p>Themes covered: Introduction to Science and key skills x7 lessons B9 Ecosystems Part 1 – Interdependence (KS3 NC: Interactions and interdependencies) P1 Forces Part 1 – Speed and gravity (KS3 NC: Motion and Forces) C5 Matter Part 1 – Particle model, separating mixtures (KS3 NC: The particulate nature of matter and Pure and impure substances) KS2 NC Content links: B9 Ecosystems – KS2 NC: Living things and their habitats P1 Forces – KS2 NC: Forces C5 Matter – KS2 NC: States of matter, Properties and changes of materials KS2 NC: Working scientifically Enquiry Processes:</p> <ul style="list-style-type: none"> • Analyse • Communicate • Enquire • Solve <p>Required practical activities: (KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)</p> <ul style="list-style-type: none"> • 9.1.3 <i>Investigating the distribution of a plant</i> • 1.1.3. (AT) <i>Investigating the average speed of a trolley on a ramp</i> • 5.2.5 <i>Separating seawater</i> • 5.2.6 <i>Who stole the money</i> <p>Homework: Part 1 End of topic exam style questions x4 CGP workbook pages (topic specific)/Doddle online homework tasks Literacy Foci:</p> <ul style="list-style-type: none"> • Working scientifically and topic specific Key Vocabulary • Key exam command words • 6 mark extended writing questions <p>Numeracy Foci:</p> <ul style="list-style-type: none"> • Graphical skills – Drawing and Interpretation • Use of the formula: <i>Speed = distance/time</i> • Use of the formula: <i>weight = mass/gravitational field strength</i> • Percentages • Unit conversions 	<p>Themes covered: B8 Organisms Part 1 – Cells (KS3 NC: Structure and function of living organisms) P2 Electromagnetism Part 1 – Voltage and resistance, current (KS3 NC: Electricity and electromagnetism – Current electricity and Static electricity) C6 Reactions Part 1 – Acid and alkalis, Metals and non-metals (KS3 NC: Chemical reactions) KS2 NC Content links: B8 Organisms – KS2 NC: Animals including humans P2 Electromagnetism – KS2 NC: Electricity C6 Reactions – KS2 NC: Properties and changes of materials KS2 NC: Working scientifically Enquiry Processes:</p> <ul style="list-style-type: none"> • Analyse • Communicate • Enquire • Solve <p>Required practical activities: (KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)</p> <ul style="list-style-type: none"> • 8.2.1 (AT) <i>Observing cheek cells</i> • 2.1.2 <i>Resistance of a wire</i> • 6.1.6 <i>Making salts</i> <p>Homework: Part 1 End of topic exam style questions x3 CGP workbook pages (topic specific)/Doddle online homework tasks Literacy Foci:</p> <ul style="list-style-type: none"> • Working scientifically and topic specific Key Vocabulary • Key exam command words • 6 mark extended writing questions <p>Numeracy Foci:</p> <ul style="list-style-type: none"> • Graphical skills – Drawing and Interpretation • Data analysis • Use of the formula: <i>Resistance= potential difference/current</i> • Unit conversions 	<p>Themes covered: B10 Genes Part 1 – Variation, Human reproduction (KS3 NC: Reproduction, Genetics and Evolution) P3 Energy Part 1 – Energy costs, energy transfer (KS3 NC: Energy changes and transfers) P4 Waves Part 1 – Sound, Light (KS3 NC: Sound and light waves) KS2 NC Content links: B10 Genes – KS2 NC: Plants, Animals including humans P3 Energy – KS2 NC: N/A P4 Waves – KS2 NC: Light and sound KS2 NC: Working scientifically Enquiry Processes:</p> <ul style="list-style-type: none"> • Analyse • Communicate • Enquire • Solve <p>Required practical activities: KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements) Homework: Part 1 End of topic exam style questions x3 Projects covering:</p> <ul style="list-style-type: none"> • B10 Genes –Plant reproduction • C7 Earth – Earth and space <p>Literacy Foci:</p> <ul style="list-style-type: none"> • Working scientifically and topic specific Key Vocabulary • Key exam command words • 6 mark extended writing questions <p>Numeracy Foci:</p> <ul style="list-style-type: none"> • Graphical skills – Drawing and Interpretation • Data analysis • Use of the formula: <i>Power = energy/time</i> • Use of the formula: <i>Cost= power X time X price</i> • Unit conversions



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<p>Revision Opportunities – One week of revising and teaching students how to revise</p> <p>KS3 Revision guides and Flash cards available to purchase via Parent pay</p> <p>Enrichment/Life and work skills:</p> <ul style="list-style-type: none"> Group work/collaboration (Practical work) Empathy (B9 Predator-prey relationships) Environmental awareness (B9 Bioaccumulation) <p>SMSC Opportunities:</p> <ul style="list-style-type: none"> Safety in the laboratory: As part of the introductory module students are taught how to keep themselves safe in practical situations during lessons. This is made fun for students by gradually increasing the level of practical activities to test safety skills and build on future enjoyment in lessons. <p>Assessments – Autumn 1 Baseline Test EOC Test/ EOC HWK (P1, C5 and B9)</p> <p>Assessment– Autumn 2 EOC Test/ EOC HWK (P1, C5 and B9)</p> <p>Extra Curricular opportunities and Trips: High achievers club (all year)</p> <ul style="list-style-type: none"> Science Crest Award (all year) 	<p>Revision Opportunities – One week of revising and teaching students how to revise</p> <p>KS3 Revision guides and Flash cards available to purchase via Parent pay</p> <p>Enrichment/Life and work skills:</p> <ul style="list-style-type: none"> Group work/collaboration (Practical work) Research skills (B8 Organisms – specialised cells) Time management (Practical work) Awareness of electrical safety (P2 Electromagnetism) Recognising hazard symbols on everyday products in the home (C6 Reactions) <p>SMSC Opportunities:</p> <p>Work on current and potential difference done George Ohm’s.</p> <p>Assessment – Spring 1 EOC Test/ EOC HWK (P2, C6 and B8)</p> <p>Assessment – Spring 2 EOC Test/ EOC HWK (P2, C6 and B8)</p> <p>Extra Curricular opportunities and Trips:</p> <ul style="list-style-type: none"> High achievers club (all year) Science Crest Award (all year) Science week Activities 	<p>Revision and revisiting Opportunities – One week of revising and revisiting previous taught topics, with a focus on key command words</p> <p>KS3 Revision guides and Flash cards available to purchase via Parent pay</p> <p>Enrichment/Life and work skills:</p> <ul style="list-style-type: none"> Group work/collaboration (Practical work and Projects B10 Plant reproduction and C7 Earth and space) Self-awareness (B10 Genes – Human reproduction and puberty) Problem solving (P3 Energy – Energy costs and energy transfers) Research skills (P4 Waves – The electromagnetic spectrum and uses of waves, e.g. Ultrasound) <p>SMSC Opportunities:</p> <ul style="list-style-type: none"> Reproduction - Focus on people's beliefs around contraception and why people may choose not to use it. Considered from a health point of view as well as religious / belief point of view MMR Vaccines and again at KS4) - Look at how people's beliefs can be influenced by others and how science is needed to sometimes demonstrate fact over people's opinions. Teenage pregnancy and the consequences of this and underage sex is looked at and discussed. Students study the importance of fossil fuels to human society and the impact their usage is having. This is probably the first real time that students start focussing on particular aspects of pollution in the world around us. Students are allowed to learn this by researching and then presenting their findings to others which increases their enjoyment of this area which is often very interesting. <p>Assessment – Summer 1 EOC Test/ EOC HWK (P3, P4 and B10)</p> <p>Assessment – Summer 2 Year 7 Summer Assessment Topics :P1,P2,P3,P4,C5,C6,B8,B9,B10</p> <p>Extra Curricular opportunities and trips TBC .</p> <ul style="list-style-type: none"> High achievers club (all year) Science Crest Award (all year) London Zoo trip



YEAR 8 - SCIENCE CURRICULUM MAP

Autumn Term	Spring Term	Summer Term – 1 st Half
<p>Themes covered: B8 Organisms Part 2 – Breathing, Digestion (KS3 NC: Nutrition and digestion, Gas exchange systems, Health) P1 Forces Part 2–Contact forces, pressure (KS3 NC: Forces, Pressure in fluids) C5 Matter Part 2 – Periodic table, Elements (KS3 NC: Atoms, elements and compounds, The periodic table) KS2 NC Content links: B8 Organisms – KS2 NC: Animals, including humans P1 Forces – KS2 NC: Forces C5 Matter – KS2 NC: Properties and changes of materials KS2 NC: Working scientifically Enquiry Processes:</p> <ul style="list-style-type: none"> Analyse Communicate Enquire Solve <p>Required practical activities: (KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)</p> <ul style="list-style-type: none"> 8.4.2 <i>Testing foods for nutrients</i> 8.4.5 <i>Investigating enzymes in action</i> 1.3.2 <i>Investigating springs and elastic</i> <p>Homework: Part 2 End of topic exam style questions x3 CGP workbook pages (topic specific)/Doddle online homework tasks Literacy Foci:</p> <ul style="list-style-type: none"> Working scientifically and topic specific Key Vocabulary Key exam command words 6 mark extended writing questions <p>Numeracy Foci:</p> <ul style="list-style-type: none"> Graphical skills – Drawing and Interpretation Data analysis Use of the formula: <i>Pressure = force/area</i> Use of the formula: <i>Moment = force X distance</i> Balancing equations 	<p>Themes covered: B9 Ecosystems Part 2 – Respiration, Photosynthesis (KS3 NC: Photosynthesis and cellular respiration) P2 Electromagnetism Part 2– Magnetism, Electromagnets (KS3 NC: Magnetism) C6 Reactions Part 2 – Types of reaction, Chemical energy (KS3 NC: Chemical reactions and Energetics, Materials) KS2 NC Content links: B9 Ecosystems – KS2 NC: Plants, Living things and their habitats P2 Electromagnetism– KS2 NC: Forces and magnets C6 Reactions – KS2 NC: Properties and changes of materials KS2 NC: Working scientifically Enquiry Processes:</p> <ul style="list-style-type: none"> Analyse Communicate Enquire Solve <p>Required practical activities: (KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)</p> <ul style="list-style-type: none"> 9.4.1 <i>Producing oxygen</i> 9.4.3 <i>Testing a leaf for starch</i> 6.3.4 <i>Conservation of mass</i> 6.4.1 <i>Energy transfer in chemistry</i> <p>Homework: Part 2 End of topic exam style questions x3 CGP workbook pages (topic specific)/Doddle online homework tasks Literacy Foci:</p> <ul style="list-style-type: none"> Working scientifically and topic specific Key Vocabulary Key exam command words 6 mark extended writing questions <p>Numeracy Foci:</p> <ul style="list-style-type: none"> Graphical skills – Drawing and Interpretation Data analysis Balancing equations Calculating bond energies 	<p>Themes covered: B10 Genes Part 2 – Evolution, Inheritance (KS3 NC: Genetics and Evolution) P3 Energy Part 2– Work, Heating and cooling (KS3 NC: Energy and changes in systems) C7 Earth Part 2 – Climate, Earth resources (KS3 NC: Materials, Earth and atmosphere) P4 Waves Part 2 – Wave effects and wave properties (KS3 NC: Observed waves, Energy and waves) KS2 NC Content links: B10 Genes – KS2 NC: Evolution and inheritance P3 Energy – KS2 NC: N/A C7 Earth – KS2 NC: Properties and changes of materials, Rocks KS2 NC: Working scientifically Enquiry Processes:</p> <ul style="list-style-type: none"> Analyse Communicate Enquire Solve <p>Required practical activities (KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)</p> <ul style="list-style-type: none"> 3.4.3 <i>Keeping it warm</i> <p>Homework: Part 2 End of topic exam style questions x3 CGP workbook pages (topic specific)/Doddle online homework tasks Literacy Foci:</p> <ul style="list-style-type: none"> Working scientifically and topic specific Key Vocabulary Key exam command words 6 mark extended writing questions <p>Numeracy Foci:</p> <ul style="list-style-type: none"> Graphical skills – Drawing and Interpretation Data analysis Use of the formula: <i>Work done = force X distance</i> Probability



YEAR 8 - SCIENCE CURRICULUM MAP

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<p>Revision Opportunities – One week of revising and revisiting topics with a focus on key command words KS3 Revision guide and flash cards available to purchase via Parent pay</p> <p>Enrichment/Life and work skills:</p> <ul style="list-style-type: none"> • Group work/collaboration (Practical work) • Problem solving (P1 Forces – Pressure and moments calculations) • Self awareness (B8 Organisms - Awareness of substance misuse and its implications) • Independence and Research skills (B8 Organisms How drugs and alcohol affect the body) • Presentation skills (Presentation on drugs and alcohol) <p>SMSC Opportunities:</p> <ul style="list-style-type: none"> • Diet and Digestion: Students study the importance of a healthy diet and lifestyle within this module and the impacts of a poor diet and lack of exercise on their health. This is made enjoyable by a wide variety of lessons including practical aspects to investigate energy levels in foods and research on health impacts of a poor diet and conditions such as anorexia and obesity. • Diet and exercise and consequences of this not being balanced is looked at in depth. <p>Assessment – Autumn 1 Year 7 Knowledge Retrieval test</p> <p>Assessment – Autumn 2</p> <p>EOC Test/ EOC HWK (P1, C5 and B8)</p> <p>Extra Curricular opportunities and Trips: TBC</p> <ul style="list-style-type: none"> • High achievers club (all year) • Science Museum Trip TBC • Brunel University – Dead on Time TBC 	<p>Revision Opportunities – One week of revising and revisiting topics with a focus on key command words KS3 Revision guide and flash cards available to purchase via Parent pay</p> <p>Enrichment/Life and work skills:</p> <ul style="list-style-type: none"> • Group work/collaboration (Practical work) • Critical thinking and decision making (C6 Reactions – Energy transfers in Chemistry practical) • Problem solving (C6 Reactions – Balancing equations) • Environmental awareness (C6 Reactions - Impacts of combustion) <p>SMSC Opportunities:</p> <ul style="list-style-type: none"> • Photosynthesis - What are the consequences of deforestation? This is linked to not buying recycled paper and the potential devastating impacts of deforestation is researched by students. <p>Assessment – Spring 1 EOC Test/ EOC HWK (P2, C6 and B9)</p> <p>Assessment – Spring 2 EOC Test/ EOC HWK (P2, C6 and B9)</p> <p>Extra Curricular opportunities and Trips: TBC</p> <ul style="list-style-type: none"> • High achievers club (all year) TBC • Brunel University – Dead on Time TBC 	<p>Revision Opportunities – One week of revising and revisiting topics with a focus on key command words KS3 Revision guide and flash cards available to purchase via Parent pay</p> <p>Enrichment/Life and work skills:</p> <ul style="list-style-type: none"> • Group work/collaboration (Practical work) • Environmental awareness (C7 Earth – Global warming and climate change) • Being open minded (B10 Genes – Evolution) <p>SMSC Opportunities:</p> <p>Assessment – Summer 1 EOC Test/ EOC HWK (P3, C7 and B10)</p> <p>Assessment – Summer 2 End of year exam</p> <p>Topics : P1,P2,P3,C5,C6,C7,B8,B9,B10</p> <p>Extra Curricular opportunities and Trips: TBC</p> <ul style="list-style-type: none"> • High achievers club (all year)



YEAR 8 - SCIENCE CURRICULUM MAP

Summer Term – 2nd Half

Practical skills investigations x3: (KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)

Biology – Reaction times

Chemistry – Reactivity of metals

Physics – Bouncing balls

Enquiry Processes:

- Analyse
- Communicate
- Enquire
- Solve

Homework:

Extended writing practice - *How to write a method (9 marks) x3*

Literacy Foci:

- Working scientifically Key Vocabulary
- How to write a plan
- Extended writing – *methods, conclusions and evaluations*

Numeracy Foci:

- Presenting data
- Graphical skills – Drawing and Interpretation
- Data analysis
- Conclusions and evaluations

Enrichment/Life and work skills:

- Group work/collaboration (Joint numeracy project with the Maths department)
- Critical thinking and decision making (Evaluations and justifications - Practical skills investigations)
- Problem solving (Calculating means, selecting appropriate graphs to present data collected in practical investigations)

Assessment – Summer 2

Year 8 Summer Assessment

End of year exam

Topics : P1,P2,P3,C5,C6,C7,B8,B9,B10

Extra Curricular opportunities and Trips:

- High achievers club (all year)