YEAR 7 - SCIENCE CURRICULUM MAP

Autumn Term

Themes covered:
B9 Ecosystems Part 1 –KO1,KO2 and KO3 – Interdependence (KS3 NC: Interactions and interdependencies)
P2 Electromagnetism Part 1 - KO1 and KO2 – Voltage and resistance, current (KS3 NC: Electricity– Current electricity and Static electricity)
C5 Matter Part 1 – KO1 ,KO2 and KO3 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
P2 Electromagnetism – KS2 NC: Electricity
C5 Matter – KS2 NC: States of matter, Properties and changes of materials
KS2 NC: Working scientifically
Enquiry Processes:
- Analyse
- Communicate
- Enquire
- Solve

Required practical activities: (KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)
- 9.1.3 ***Investigating the distribution of a plant***
- 5.2.5 ***Separating seawater***
- 5.2.6 ***Who stole the money***
- 2.1.2 ***Resistance of a wire***

Homework:
UHS End of topic exam style questions **x3**
CGP workbook pages (topic specific)
C7 –Earth and Space Project KO1,KO2,KO3
Literacy Foci:
- Working scientifically and topic specific Key Vocabulary
- Key exam command words
- 6 mark extended writing questions

Numeracy Foci:
- Graphical skills – Drawing and Interpretation
- Use of the formula: ***Resistance= potential difference/current***
- Percentages
- Unit conversions

Spring Term

Themes covered:
B9 Ecosystems Part 2 – KO4 and KO5 Respiration, Photosynthesis (KS3 NC: Photosynthesis and cellular respiration)
P2 Electromagnetism Part 2 – KO3 and KO4 Magnetism , Electromagnets (KS3 NC: Magnetism)
C5 Matter Part 2 – KO4 and KO5 Periodic table, Elements (KS3 NC: Atoms, elements and compounds, The periodic table)
B8 Organisms Part 1 – KO1 and KO2 Cells (KS3 NC: Structure and function of living organisms)
KS2 NC Content links:
B9 Ecosystems – KS2 NC: Plants, Living things and their habitats
P2 Electromagnetism– KS2 NC: Forces and magnets
C5 Matter – KS2 NC: Properties and changes of materials
B8 Organisms – KS2 NC: Animals including humans
KS2 NC: Working scientifically
Enquiry Processes:
- Analyse
- Communicate
- Enquire
- Solve

Required practical activities: (KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)
- 9.4.1 ***Producing oxygen***
- 9.4.3 ***Testing a leaf for starch***
- 8.2.1 (***AT) Observing cheek cells***

Homework:
UHS End of topic exam style questions **x4**
CGP workbook pages (topic specific)
C7 –Earth and Space Project KO1,KO2,KO3
Literacy Foci:
- Working scientifically and topic specific Key Vocabulary
- Key exam command words
- 6 mark extended writing questions

Numeracy Foci:
- Graphical skills – Drawing and Interpretation
- Data analysis
- Unit conversions

Summer Term

Themes covered:
B8 Organisms Part 2 – KO3 and KO4 Breathing, Digestion (KS3 NC: Nutrition and digestion, Gas exchange systems, Health
P3 Energy Part 1 – KO1,KO2- Energy costs, energy transfer (KS3 NC: Energy changes and transfers)
P3 Energy Part 2– KO3 and KO4 Work, Heating and cooling (KS3 NC: Energy and changes in systems)
KS2 NC Content links:
P3 Energy – KS2 NC: N/A
B8 Organisms – KS2 NC: Animals, including humans
KS2 NC: Working scientifically
Enquiry Processes:
- Analyse
- Communicate
- Enquire
- Solve

Required practical activities: KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)
- 8.4.2 ***Testing foods for nutrients***
- 8.4.5 ***Investigating enzymes in action***
- 3.4.3 ***Keeping it warm***

Homework:
UHS End of topic exam style questions **x2**

Literacy Foci:
- Working scientifically and topic specific Key Vocabulary
- Key exam command words
- 6 mark extended writing questions

Numeracy Foci:
- Graphical skills – Drawing and Interpretation
- Data analysis
- Use of the formula: ***Power = energy/time***
- Use of the formula: ***Cost= power X time X price***
- Use of the formula: ***Work done = force X distance***
- Unit conversions

YEAR 7 - SCIENCE CURRICULUM MAP

Autumn Term

Revision Opportunities – One week of revising and teaching students how to revise
CGP KS3 Revision guides and Flash cards available to purchase via Parent pay
Kerboodle online text book

Enrichment/Life and work skills:
- Group work/collaboration (Practical work)
- Empathy (B9 Predator-prey relationships)
- Environmental awareness (B9 Bioaccumulation)
- Research skills (C7 Earth and space project)

SMSC Opportunities:
- Safety in the laboratory: 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.
- Work on current and potential difference done George Ohm's.

Assessments – Autumn
Baseline Test
DPR - KO 1 – KO3 formatively assessed throughout term as well as End point assessment for -P2, C5 and B9

Extra -Curricular opportunities and Trips:
- **First Lego League Club**
- **Virtual science club –via TEAMS -Young Scientist**
- **Inter-house and Inter school competitions**

Spring Term

Revision Opportunities – One week of revising and teaching students how to revise
KS3 Revision guides and Flash cards available to purchase via Parent pay
Kerboodle online text book

Enrichment/Life and work skills:
- Group work/collaboration (Practical work)
- Research skills (B8 Organisms – specialised cells)
- Time management (Practical work)
- Awareness of electrical safety (P2 Electromagnetism)
- History of the Periodic Table (C5 Matter)
- Research skills (C7 Earth and space project)
- British Science Week activities

SMSC Opportunities:
- 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.
- Contributions of various scientists in the development of the periodic table

Assessment – Spring
EOC Test/ EOC HWK (P2, C5 and B9)
DPR - KO3,KO4 and KO5 formatively assessed throughout term as well as End point assessment for –B8, B9,C5,P2

Extra -Curricular opportunities and Trips:
- **First Lego League Club**
- **Science week Activities**
- **Virtual science club –via TEAMS -Young Scientist**
- **Inter-house and Inter school competitions**

Summer Term

Revision and revisiting Opportunities – One week of revising and revisiting previous taught topics, with a focus on key command words
KS3 Revision guides and Flash cards available to purchase via Parent pay
Kerboodle online text book

Enrichment/Life and work skills:
- Group work/collaboration (Practical work)
- Problem solving Saving energy and reducing energy bills (P3 Energy – Energy costs and energy transfers)

SMSC Opportunities:
- 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.

- **Assessment – Summer 1**

EOC Test/ EOC HWK (P3, and B8)

Assessment – Summer 2
End of Year 7 -Summer Assessment
Topics : KO'S –1,2,3,4 and 5 for P2,P3,C5,C7,B8 and B9

Extra -Curricular opportunities and trips :
- **First Lego League Club (all year)**
- Science Museum Visit
- **Virtual science club –via TEAMS -Young Scientist**
- **Inter-house and Inter school competitions**

YEAR 8 - SCIENCE CURRICULUM MAP

Autumn Term	Spring Term	Summer Term – 1st Half
Themes covered: **B8 Organisms Part 2 –Biology KO3 and KO4** Breathing, Digestion (KS3 NC: Nutrition and digestion, Gas exchange systems, Health) **P1 Forces Part 2– Physics KO4 and KO5** Contact forces, pressure (KS3 NC: Forces, Pressure in fluids) **C5 Matter Part 2 – Chemistry KO1 and KO2** 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:** • Analyse • Communicate • Enquire • Solve **Required practical activities: (KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)** • 8.4.2 ***Testing foods for nutrients*** • 8.4.5 ***Investigating enzymes in action*** • 1.3.2 ***Investigating springs and elastic*** **Homework:** Part 2 End of topic exam style questions **x3** CGP workbook pages (topic specific)/Doddle online homework tasks **Literacy Foci**: • Working scientifically and topic specific Key Vocabulary • Key exam command words • 6 mark extended writing questions **Numeracy Foci:** • Graphical skills – Drawing and Interpretation • Data analysis • Use of the formula: ***Pressure = force/area*** • Use of the formula: ***Moment = force X distance*** • Balancing equations	**Themes covered:** **B9 Ecosystems Part 2 – Biology KO1 and KO2** Respiration, Photosynthesis (KS3 NC: Photosynthesis and cellular respiration) **P2 Electromagnetism Part 2– Physics KO1** Magnetism, Electromagnets (KS3 NC: Magnetism) **C6 Reactions Part 2 –Chemistry KO3 and KO4** 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:** • Analyse • Communicate • Enquire • Solve **Required practical activities: (KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)** • 9.4.1 ***Producing oxygen*** • 9.4.3 ***Testing a leaf for starch*** • 6.3.4 ***Conservation of mass*** • 6.4.1 ***Energy transfer in chemistry*** **Homework:** Part 2 End of topic exam style questions **x3** CGP workbook pages (topic specific)/Doddle online homework tasks **Literacy Foci**: • Working scientifically and topic specific Key Vocabulary • Key exam command words • 6 mark extended writing questions **Numeracy Foci:** • Graphical skills – Drawing and Interpretation • Data analysis • Balancing equations • Calculating bond energies	**Themes covered:** **B10 Genes Part 2 –Biology KO5 and KO6** Evolution, Inheritance (KS3 NC: Genetics and Evolution) **P3 Energy Part 2–Physics KO6 and KO7** Work, Heating and cooling (KS3 NC: Energy and changes in systems) **C7 Earth Part 2 –Chemistry KO5 and KO6** Climate, Earth resources (KS3 NC: Materials, Earth and atmosphere) **P4 Waves Part 2 –Physics KO2 and KO3** 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:** • Analyse • Communicate • Enquire • Solve **Required practical activities (KS3 NC: Working Scientifically, Scientific attitudes, Experimental skills and investigations, Analysis and evaluation and Measurements)** • 3.4.3 ***Keeping it warm*** **Homework:** Part 2 End of topic exam style questions **x 3** CGP workbook pages (topic specific)/Doddle online homework tasks **Literacy Foci**: • Working scientifically and topic specific Key Vocabulary • Key exam command words • 6 mark extended writing questions **Numeracy Foci:** • Graphical skills – Drawing and Interpretation • Data analysis • Use of the formula: ***Work done = force X distance*** • Probability

YEAR 8 - SCIENCE CURRICULUM MAP

Autumn Term	Spring Term	Summer Term – 1st Half
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 **Enrichment/Life and work skills:** • 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) **SMSC Opportunities:** • 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. **Assessment – Autumn 1** Year 7 Knowledge Retrieval Quiz **Assessment – Autumn 2** EOC Test/ EOC HWK (P1, C5 and B8) **DPR -** KO 1 – KO5 formatively assessed throughout term as well as End point assessment for –B8,C5 and P1 **Extra -Curricular opportunities and Trips:** • **Science CREST Award Club (all year)** • **Virtual science club –via TEAMS -Young Scientist** • Brunel University – Dead on Time TBC	**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 **Enrichment/Life and work skills:** • 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) **SMSC Opportunities:** • 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. **Assessment – Spring 1** EOC Test/ EOC HWK (P2, C6 and B9) **Assessment – Spring 2** **DPR -** KO 1 – KO3 formatively assessed throughout term as well as End point assessment for -P2, C6 and B9 EOC Test/ EOC HWK (P2, C6 and B9) **Extra -Curricular opportunities and Trips: TBC** • **Science CREST Award Club (all year)** • **Virtual science club –via TEAMS -Young Scientist** • **Science week activities and competitions**	**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 **Enrichment/Life and work skills:** • Group work/collaboration (Practical work) • Environmental awareness (C7 Earth – Global warming and climate change) • Being open minded (B10 Genes – Evolution) **SMSC Opportunities:** **COP26 –**Simple steps we can take every day to make life more sustainable and they all add up. **Assessment – Summer 1** EOC Test/ EOC HWK (P3, C7 and B10) **DPR -** KO 2 – KO6 formatively assessed throughout term as well as End point assessment for -P2, C5 and B9 **Assessment – Summer 2** **End of year exam** **Topics : P1,P2,P3,C5,C6,C7,B8,B9,B10 KO'S 1-KO 6** **Extra -Curricular opportunities and Trips: TBC** • **Science CREST Award Club (all year)** • **Virtual science club –via TEAMS -Young Scientist** • **Science Museum Trip** • **Drop-down day Science competitions** • **Summer School science activities**

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 : KO1 to KO7 for P1,P2,P3,C5,C6,C7,B8,B9,B10

Extra- Curricular opportunities and Trips:

- **Science CREST Award Club (all year)**
- **Virtual science club –via TEAMS -Young Scientist**
- **Science Museum Trip**
- **Drop-down day Science competitions**
- **Summer School science activities**