UXBRIDGE HIGH SCHOOL

YEAR 9 – BIOLOGY CURRICULUM MAP

Proud to make success happen

Autumn Term (14 weeks)

Themes covered:

B8.5: Cell structure and transport

Key Concepts: microscopy, cell Structure, cell Differentiation, animal and plant Cells, eukaryotic and prokaryotic cells, specialised animal and plant cells, transport in cells by diffusion, osmosis, and active transport.

KS3 NC Content links:

- B8 **Organisms Part 1** – Cells (KS3 NC: Structure and function of living organisms)

Enrichment/life and work skills: Group work/Collaboration / Practical Work, Research skills, Public speaking , Empathy. Science week activities exploring cutting edge advances in Biology plus exciting activities to engage and motivate the students.

DPR - KO 1 – 4 formatively assessed throughout term as well as End point assessment.

Homework:

- Assigned tasks as per SOW and Seneca and kerboodle.
- End of topic exam style questions

Revisiting, revising, remembering opportunities

•Assigned tasks on kerboodle
•Regular interleaving tasks during lessons.
•Exam practice questions

Assessments:

- Exam h.w. Questions
- End of topic Exam based on KOs from Topic B8.5

Literacy Foci:

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

Numeracy Foci:

- Graphical skills – Drawing and Interpretation
- using an appropriate number of significant figures in calculations
- SI units and IUPAC chemical nomenclature
- using prefixes and powers of ten for orders of magnitude (e.g. tera, giga, mega, kilo,

Spring Term (12 weeks)

Themes covered:

Topic B8.6: cell division

Key Concepts:

- growth and differentiation, potential uses of stem cells, as well as the disadvantages and objections to the use of stem cells

- **B8.7: Organisation and digestive system**

Key Concepts:

- principles of organisation: tissue, organ, and organ system,

KS3 Content links:

• B8.1 - 8.2 Cell structure and transport -cell differentiation, specialised cells and adaptations, diffusion and exchange surfaces

Enrichment/life and work skills: Group work/Collaboration / Practical Work, Research skills, Public speaking , Empathy. Science week activities exploring cutting edge advances in Biology plus exciting activities to engage and motivate the students.

DPR - KO 5 – 6 formatively assessed throughout term as well as End point assessment.

Homework:

- Assigned tasks as per SOW and Seneca and kerboodle.
- End of topic exam style questions

Revisiting, revising, remembering opportunities

•Assigned tasks on kerboodle
•Regular interleaving tasks during lessons.
•Exam practice questions

- **Assessments:**
- Exam h.w. Questions
- End of topic Exam based **on KOs of B8.5 and B8.6 (Cell Biology and Cell Division).**

Literacy Foci:

- Working scientifically and topic specific Key Vocabulary and nomenclature

Summer Term (13 weeks)

Theme covered:

Topic 3: Organisation and digestive system

Key Concepts: Chemistry of food, Catalysts and Enzymes, Factors Affecting enzyme action, How the digestive system works, Making Digestion Efficient.

KS3 NC Content links:

-B8.3 - B8,4 – Breathing, Digestion (KS3 NC: Nutrition and digestion, Gas exchange systems, Health)

Enrichment/life and work skills: Group work/Collaboration / Practical Work, Research skills, Public speaking , Empathy. Science trip :Big Bang Science Fair gives students to see research presentations from universities and tech companies as well as job opportunities in Science.

DPR - KO 7 – 9 formatively assessed throughout term as well as End point assessment.

Homework:

- Assigned tasks as per SOW and Seneca and kerboodle.
- End of topic exam style questions

Revisiting, revising, remembering opportunities

•Assigned tasks on kerboodle
•Regular interleaving tasks during lessons.
•Exam practice questions

Assessment

- Exam h.w. Questions
- End of topic Test based on KOs of **B8.7 Organisation**
- End of Year exam to cover all the KO's from C3.5, C3.6, C3.7.

Literacy Foci:

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

Numeracy Foci:

- Graphical skills – Drawing and Interpretation
- using an appropriate number of significant figures in calculations
- SI units and IUPAC chemical nomenclature
- using prefixes and powers of ten for orders of magnitude (e.g. tera, giga, mega, kilo, centi, milli, micro and nano)
- Unit conversions

UXBRIDGE HIGH SCHOOL

YEAR 9 – CHEMISTRY CURRICULUM MAP

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Autumn Term (14 weeks)

Themes covered:

C5.5: Atomic structure

Key Concepts: separation and purification techniques for mixtures (filtration, crystallisation, and simple distillation), structure of the atom, atoms, ions, and isotopes, electronic structure, symbol equations including state symbols.

KS3 NC Content links:

-C5.1 - C5.2 – Particle model, separating mixtures (KS3 NC: The particulate nature of matter and Pure and impure substances)

-KS3 knowledge of the law of the conservation of mass

Enrichment/life and work skills: Group work/Collaboration/Practical Work, Research skills, Public speaking , Empathy

DPR - KO1 - 3 formatively assessed throughout term as well as End point assessment.

Homework:

•Assigned tasks as per SOW and Seneca and kerboodle.
•End of topic exam style questions

Revisiting, revising, remembering opportunities

•Assigned tasks on kerboodle
•Regular interleaving tasks during lessons.
•Exam practice questions

Literacy Foci:

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

Numeracy Foci:

- Graphical skills – Drawing and Interpretation
- Using an appropriate number of significant figures in calculations
- SI units and IUPAC chemical nomenclature
- Unit conversions

Working scientifically:

- Separating mixtures practical. Opportunities to plan investigations, to obtain evidence and to analyse data.

Extra -Curricular opportunities and Trips:

- **Virtual science club –via TEAMS Aspiring Scientist**
- **Inter-house and Inter school competitions**

Spring Term (12 weeks)

Themes covered:

C5.6 Periodic Table

Key Concepts: Development of the periodic table, Electronic structures and the periodic table, Group 0, Group 1, and Group 7 elements,
Group 7-the halogens, Explaining trends.

Higher-tier students should also be able to identify trends in properties and reactivity in terms of the electronic structure of the elements.

GCSE chemistry students should be able to compare the properties and reactions of the transition elements with the elements of Group 1, identify that some transition elements can form many different ions, and recognise that they are used as catalysts.

Topic 5.7: Structure and Bonding

Key Concepts: States of matter, Atoms into ions, Ionic Bonding

KS3 Content links:

C5.3 -5.4 – Periodic table, Elements (KS3 NC: Atoms, elements and compounds, The periodic table)

DPR - KO4 - 5 formatively assessed throughout term as well as End point assessment.

Enrichment/life and work skills: Group work/Collaboration / Practical Work, Research skills, Public speaking , Empathy

Homework:

•Assigned tasks as per SOW, Kerboodle and Seneca
•End of topic exam style questions

Revisiting, revising, remembering opportunities

•Assigned tasks on Kerboodle
•Regular interleaving tasks during lessons.
•Exam practice questions

Assessments:

- Exam h.w. Questions
- End of topic Exam based on KOs from **Topic C5.5 and C5.6.**

Literacy Foci:

- Working scientifically and topic specific Key Vocabulary and nomenclature
- Key exam command words,
- 6 mark extended writing questions

Numeracy Foci:

- Graphical skills – Drawing and Interpretation
- Using an appropriate number of significant figures in calculations
- Balancing equations (use of ratios)

Working scientifically:

Summer Term (13 weeks)

Theme covered:

Topic C5.7: Structure and Bonding

Key Concepts: Giant ionic structures, Covalent Bonding, Structure of simple molecules, Giant covalent structures, Fullerenes and graphene, bonding in metals, Giant metallic structures, nanoparticles

KS3 Content links:

KS3 knowledge of the law of the states of matter
C5.3 -5.4 – Periodic table, Elements (KS3 NC: Atoms, elements and compounds, The periodic table)

Enrichment/life and work skills: Group work/Collaboration / Practical Work, Research skills, Public speaking , Empathy

DPR - KO6 - 10 formatively assessed throughout term as well as End point assessment.

Homework:

- Assigned tasks as per SOW and Seneca and kerboodle.
- End of topic exam style questions

Revisiting, revising, remembering opportunities

•Assigned tasks on kerboodle
•Regular interleaving tasks during lessons.
•Exam practice questions

Assessment

Exam h.w. Questions
End of topic Exam based on **KO's for C5.7: Structure and Bonding**
End of Year exam to cover all the KO's from C5.5, C5.6, C5.7.

Literacy/ numeracy foci:

•Reading skills/ Terminology and vocabulary /Writing skills /Analytical Skills

Working scientifically:

- Investigating properties of ionic and covalent compouinds. Opportunities to plan investigations, to obtain evidence and to analyse data.

Extra -Curricular opportunities and Trips:

- **Virtual science club –via TEAMS -Aspiring Scientist**
- Science trip : Big Bang Science Fair

UXBRIDGE HIGH SCHOOL

YEAR 9 – PHYSICS CURRICULUM MAP

Proud to make success happen

Autumn Term (14 weeks)

Themes covered:

P3.5 : Conservation and Dissipation of Energy

Key Concepts: Changes in energy stores, Conservation of energy, Energy and work, Gravitational potential energy stores, Kinetic energy and elastic energy stores, Energy dissipation, Energy and efficiency, Energy and Power

KS3 Content links: energy transfer in Key Stage 3

P3.3 - P3.4 – Work, Heating and cooling (KS3 NC: Energy and changes in systems)

Enrichment/life and work skills: Group work/collaboration/Practical Work, , Research skills, Public speaking , Empathy

Science trip : STEM trip to Brunel University

DPR - KO1 - 4 formatively assessed throughout term as well as End point assessment.

Homework:

- Assigned tasks as per SOW and Seneca and kerboodle.
- End of topic exam style questions

Revisiting, revising, remembering opportunities

•Assigned tasks on kerboodle
•Regular interleaving tasks during lessons.
•Exam practice questions

Literacy Foci:

- Working scientifically and topic specific Key Vocabulary
- Scientific Writing: Writing a plan, drawing a conclusion, evaluating method and presenting findings.

Numeracy Foci:

- Graphical skills – Drawing and Interpretation
- using an appropriate number of significant figures in calculations
- SI units/Unit conversions
- Use of formulae:
- work done = force × distance (moved along the line of action of the force)
- g.p.e. = mass × gravitational field strength × height $[E_p = m\ g\ h]$

Spring Term (12 weeks)

Themes covered:

P3.6: Energy transfer by heating

Key Concepts: Energy transfer by conduction, Infrared Radiation, Specific Heat capacity, Heating and insulating buildings.

Higher-tier only: More about infrared radiation

Higher-tier GCSE Physics students : will need to apply the concept of the Greenhouse Effect and its relationship to the wavelength of the radiation penetrating or being absorbed by Earth's atmosphere

KS3 Content links: energy transfer in Key Stage 3

P3.4 – conduction, convection and infra-red radiation. (KS3 NC: Energy and changes in systems)

Enrichment/life and work skills: Group work/collaboration/Practical Work, , Research skills, Public speaking , Empathy. Science week activities exploring cutting edge advances in Physics plus exciting activities to engage and motivate the students.

DPR - KO5 - 7 formatively assessed throughout term as well as End point assessment.

Homework:

- Assigned tasks as per SOW and Seneca and kerboodle.
- End of topic exam style questions

Revisiting, revising, remembering opportunities

•Assigned tasks on kerboodle
•Regular interleaving tasks during lessons.
•Exam practice questions

Assessments:

- Exam h.w. Questions
- End of topic Exam based on KOs from **Topic P3.5 and P3.6.**

Literacy Foci:

- Working scientifically and topic specific Key Vocabulary and nomenclature, Key exam command words,
- 6 mark extended writing questions

Numeracy Foci:

Summer Term (13 weeks)

Summer 1 -Theme covered:

Topic 3.7: Energy Resources Key Concepts: Energy demands, Energy from wind and water, Power from the sun and Earth, Energy and the environment, Big energy issues

Enrichment/life and work skills: Group work/collaboration/Practical Work, Research skills, Public speaking , Empathy. Science trip :Big Bang Science Fair gives students to see research presentations from universities and tech companies as well as job opportunities in Science.

DPR - KO8-9 formatively assessed throughout term as well as End point assessment.

Homework:

- Assigned tasks as per SOW and Seneca and kerboodle.
- End of topic exam style questions

Revisiting, revising, remembering opportunities

•Assigned tasks on kerboodle
•Regular interleaving tasks during lessons.
•Exam practice questions

Assessment

Exam h.w. Questions

End of topic Exam based on **KO's for P3.7: Emergy resources**

End of Year exam to cover all the KO's from P3.5, P3.6, P3.7.

Literacy Foci:

- Working scientifically and topic specific Key Vocabulary and nomenclature, Key exam command words,
- 6 mark extended writing questions

Numeracy Foci:

- Graphical skills – Drawing and Interpretation