

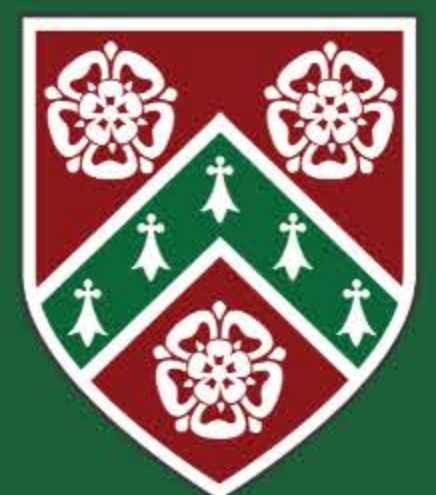
HONLEY HIGH SCHOOL

CURRICULUM GUIDE 2023-2024

SCIENCE

CURRICULUM LEAD: MR J ADDY
Contact: j.addy@honley.tft.school

STRIVE FOR THE HIGHEST





Science Year 7

AUTUMN 1

<p>Introduction to science Lab safety & introduction to lab equipment</p>	<p>Cells 1 Introduction to plant cells, animal cells and microscopy as well as looking at more specialised cells and unicellular organisms</p>	<p>Particle Model 1 An introduction to the particle model starting with solids, liquids and gases before going on to learn about pure and impure substances and how mixtures can be separated</p>	<p>Prior Learning Cells – Animal and Plants (KS2) Particle Model – Properties of Materials (KS2)</p>
--	---	--	---

AUTUMN 2

<p>Energy 1 The concept of energy stores and pathways including Efficiency and Power. Also looking at the different ways we can generate electricity and how energy is stored in food</p>	<p>Speed Investigate factors that affect the speed and velocity of different objects and introduction of graphs of motion</p>	<p>Periodic Table and Elements Atoms, elements and compounds including how we name them and how we use formulae. Looking specifically at the arrangement of the periodic table and the patterns within it</p>	<p>Prior Learning Energy – New Concept Speed – Forces (KS2) Periodic table – Pure substances – particle model 1</p>
--	--	--	--

SPRING 1

<p>Respiration Learn about the different types of respiration in animals and in micro-organisms (Yeast)</p>	<p>Organ Systems Look at the arrangement of cells into tissues, organs and systems focusing on the circulatory system, the skeletal system and the muscular system</p>	<p>Prior Learning Respiration – Breathing and Exercise (KS2) Organ Systems – Circulatory system (KS2)</p>
--	---	--

SPRING 2

<p>Waves 1 Learn about different types of waves, how they move energy, how they can be used, the hazards that they pose and what happens when they combine</p>	<p>Reproduction in Animals Learn about differences between individuals of the same species. Look at the human reproductive system and its role in fertilisation, the development of the foetus and the menstrual cycle. Learn about contraception.</p>	<p>Prior Learning Reproduction in Animals – Variation (KS2) Waves 1 – How light travels (KS2)</p>
---	---	--

SUMMER 1

<p>Reproduction in Animals Look at the human reproductive system and fertilisation, the development of the foetus and the menstrual cycle. contraception.</p>	<p>Reproduction in Plants The adaptation of flowers and sexual reproduction in plants, including pollination and seed dispersal strategies</p>	<p>Electricity 1 Compare static and current. Look at series and parallel circuits and introduce ideas about resistance</p>	<p>Contact Forces Learn about balanced and unbalanced forces including tension, drag and friction</p>	<p>Prior Learning Reproduction in Plants – Types of plants (KS2) Electricity – Circuits and circuit symbols (KS2) Contact Forces – Forces (KS2)</p>
--	---	---	--	--

SUMMER 2

<p>Acids 1 Learn about the difference between acids and alkalis and how indicators are used. Investigate how acids react with some common substances</p>	<p>Photosynthesis Why plants are called producers. How leaves are adapted for photosynthesis and how it can be slowed down or sped up. How the way plants grow help photosynthesis and how the plant uses the sugar it makes</p>	<p>Prior Learning Acids – Periodic Table/metals/Formulae Photosynthesis – organs and organ systems</p>
---	---	---

CAREERS LINKS

Health & safety officer, microbiologist, analytical chemist, physicist, particle physicist, physiotherapist, mechanical engineers, sound engineers, studio technicians, astrophysicist, optician, geologist, aeronautics engineers.

CHARACTER LINKS

Motivation, resilience and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Consideration and construction of moral and ethical arguments in science (moral virtues)

KEY ASSESSMENT DATES

Half termly summative assessments in the following weeks;
Autumn 1 – 23/10/23
Autumn 2 – 04/12/23
Spring 1 – 15/01/24
Spring 2 – 26/02/24
Summer 1 – 06/05/24
Summer 2 – 10/06/24



Science Year 8

AUTUMN 1

Electromagnets 1
Circuit symbols, series and parallel circuits, current, voltage & resistance.

Energy 2
Heating & Cooling, thermal energy transfers. Insulation.

Prior Learning
Construct a series circuit using and identifying cells, wires, bulbs, switches & buzzers (KS2)
Y7 – Energy stores & Transfers and efficiency.
Y8 – Electricity generation

AUTUMN 2

Genes 2
Introduction to genetics, DNA, chromosomes, variation, extinction.

Earth 2
Early atmosphere, today's atmosphere, global warming. Extraction of metals, metal oxides/carbonates, displacement.

Prior Learning
Y7 - Variation between individuals of the same species.
Properties and Reactions of Metals and Non-metals. Acids/alkalis

SPRING 1

Matter 2
The Periodic Table, Metals and non-metals, groups 1, 7, 0. Elements, Compounds, naming conventions & Chemical Formulae.

Reactions 2
Equations, combustion, thermal decomposition, exo/endermotic reactions. Conservation of mass

Prior Learning
Y7 – Properties and Reactions of Metals and Non-metals. Acids/alkalis and the pH scale
Mixtures & pure substance, Properties and Reactions of Metals and Non-metals. Acids/alkalis

SPRING 2

Reactions 2
Equations, combustion, thermal decomposition, exo/endermotic reactions. Conservation of mass

Prior Learning
Y7 – Mixtures & pure substance, Properties and Reactions of Metals and Non-metals. Acids/alkalis and the pH scale

SUMMER 1

Forces 2
Work done, stretching and squashing, moments and levers. Balanced / unbalanced forces, resultant forces, friction, air resistance. Pressure = force / area, water pressure, hydraulics

Ecosystems 2
Respiration equation, circulatory system, anaerobic respiration. Photosynthesis equation, Plant and leaf structure, factors affecting photosynthesis.

Prior Learning
Y7 – Forces, Acceleration, Gravity mass & weight,
Y7 - Communities in Habitats. Food chains and webs, predator/prey cycles.

SUMMER 2

Electromagnets 2
Magnetism, how magnets interact. How you create and change the strength of an electromagnet. The uses of magnets

Waves 2
Transverse and Longitudinal Waves with examples. The behaviour of waves, ultrasound, echolocation.

Prior Learning
KS2 – Magnets
Y7 – Waves 1

CAREERS LINKS

Health & safety officer, microbiologist, analytical chemist, physicist, particle physicist, physiotherapist, mechanical engineers, sound engineers, studio technicians, astrophysicist, optician, geologist, aeronautics engineers.

CHARACTER LINKS

Motivation, resilience and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Consideration and construction of moral and ethical arguments in science (moral virtues)

KEY ASSESSMENT DATES

Half termly summative assessments in the following weeks:
Autumn 1 – 16/10/23
Autumn 2 – 11/12/23
Spring 1 – 29/01/24
Spring 2 – 04/03/24
Summer 1 – 29/04/24
Summer 2 – 03/06/24

NITIMUR IN EXCELSIS – STRIVE FOR THE HIGHEST



Science Year 9

AUTUMN 1

Evolution Ideas about Biodiversity, adaptation and how natural selection drives evolution (and extinction)	Cells 2 Prokaryotic and Eukaryotic cells and more advanced microscopy. Introducing ideas about cell division and multiplication	Particle Model 2 Particle theory when applied to concepts of density and how particles respond to changes in the energy of particles	Atomic Structure The internal structure of atoms (protons, neutrons and electrons). The relevance of the mass of different atoms and how the periodic table is arranged	Prior Learning Evolution – Inheritance Y8 Cells – Cells Y7 Particles – Particle Model Y7 Atomic Structure – Periodic table and elements Y7
--	---	--	---	---

AUTUMN 2

Bonding Learn how atoms bond together to form compounds, including ionic, covalent and metallic bonding	Cell Processes Look at diffusion in organisms and the adaptation of different exchange surfaces. Also consider the interdependence of photosynthesis and respiration	Digestive and Circulatory System The digestive system and diet – how we test for foods and why enzymes are important. The adaptations of the heart, blood and blood vessels	Prior Learning Bonding – Atomic Structure Y9 Cell Processes – organs and organ systems – Y7 Digestive and Circulatory System – Organ systems Y7
---	--	---	---

SPRING 1

Energy 2 Taking ideas about energy further, starting to look in detail about how the quantity in different stores is affected and how it is calculated	Chemical Energy Looking at energy from a chemistry perspective, thinking about how energy is stored by and released during chemical processes	Rates Learn how the rate of chemical processes can be increased or decreased. Using ideas about particles to explain why these changes occur	Prior Learning Energy 2 – Energy Y7 Chemical Energy – Chemical Reactions 1 Y8 Rates – Chemical Reactions 1&2 Y8
--	---	--	---

SPRING 2

Forces 1 Extending ideas about speed and velocity and how they can be calculated. Including the role of acceleration. Bringing in different types of graphs that represent journeys	Control Systems Compare the way that Hormones and Nerves control different processes within the human body then look at concrete examples of each	Disease Learn how and why people get ill. How the body is adapted to stop us getting ill and how we can treat illnesses when people are ill	Prior Learning Forces – Non-Contact Forces Y8 Control Systems – Menstrual Cycle Y7 Disease – Cells 2 Y9
---	---	---	---

SUMMER 1

Electricity 2 Recap concepts such as current and introduce new ideas like potential difference. Look at how electricity can be measured and calculated and how it is moved around the country efficiently and safely.	Acids 2 Recap acid and alkali neutralisations and focus on how acids react with Metals, bases, and carbonates – start to think about the importance of control and accuracy in reactions	Inheritance and Evolution Explain how biological sex is determined and look at the difference between recessive and dominant characteristics and their inheritance and how this drives evolution	Prior Learning Electricity 2 – Electricity 1 Year 7 Acids 2 – Acids 1 Y7 Inheritance and Evolution – Evolution Y9
---	--	--	---

SUMMER 2

Radiation Look at the nature of the 3 different types of nuclear radiation and how this influences their properties and their uses	Resources Look at liquid resources inside the earth and how they are made more useful – namely Oil and Water. Consider the roles of cracking, fractional distillation, filtration and desalination	Ecology Investigate how we can determine the distribution of organisms in ecosystems and consider the negative and positive effects that increasing human populations have on ecosystems	Prior Learning Radiation – Atomic Structure Y9 Resources – Energy 1 Y7 Ecology - Ecosystems Y8
--	--	--	--

CAREERS LINKS

Health & safety officer, microbiologist, analytical chemist, physicist, particle physicist, physiotherapist, mechanical engineers, sound engineers, studio technicians, astrophysicist, optician, geologist, aeronautics engineers.

CHARACTER LINKS

Motivation, resilience and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Consideration and construction of moral and ethical arguments in science (moral virtues)

KEY ASSESSMENT DATES

Half termly summative assessments in the following weeks;
 Autumn 1 – 25/09
 Autumn 2 – 13/11
 Spring 1 – 05/02
 Spring 2 – 18/03
 Summer 1 – 13/05
 Summer 2 – 17/06

NITIMUR IN EXCELSIS – STRIVE FOR THE HIGHEST



Combined Science Year 10

AUTUMN 1

B1 – Cell Biology Cell types, the cell cycle, calculating magnification, stem cells, diffusion, osmosis, active transport exchange surfaces	C1 – Atomic Structure and Bonding Bonding, reactivity and periodicity, the periodic table and its history, alkali metals, halogens, noble gases	P1 – Energy Energy transfers, GPE, KE, EPE, Thermal Energy, Specific Heat Capacity, Conservation of Energy, Energy Resources	B2 - Organisation Digestive System, Enzymes, Food Tests, The Heart, Blood Vessels, Heart, Lungs, Non-communicable disease, cancer	Prior Learning B1 – Cells 2, Cell Processes (Y9) C1 – Atomic Structure (Y9) P1 – Energy 2 (Y9) B2 – Circulatory & Digestive System (Y9)
---	---	--	---	--

AUTUMN 2

C2 – Bonding, Structure and the Properties of Matter Bonding and properties of small covalent, giant covalent, polymers, ionic compounds, metals and alloys	P3 – Particle Model of Matter Density, internal energy, specific latent heat, particle motion in gases	Prior Learning C2 – Bonding (Y9) P3 – Particle Model 2 (Y9)
---	--	--

SPRING 1

B3 – Infection and Response Communicable diseases, pathogens, the immune system, Drug discovery and development and plant diseases	C3 – Quantitative Chemistry Conservation of mass, apparent mass change, Relative formula mass and percentage by mass, Moles, concentration and limiting reactants	C4 – Chemical Changes Reactivity series, redox reactions, salt forming reactions, Electrolysis	Prior Learning B3 – Disease (Y9) C3 – Balancing Equations (Y8) C4 – Acids 2 (Y9)
--	---	--	--

SPRING 2

P4 – Atomic Structure Development of the model of the atom, radioactive decay, half-life, uses of nuclear radiation, contamination and irradiation	B4 - Bioenergetics Photosynthesis, transpiration, translocation, uses of glucose, Limiting factors of photosynthesis, Respiration/response to exercise, metabolism	Prior Learning P4 – Radiation (Y9) B4 – Photosynthesis (Y8) Respiration (Y8)
--	--	--

SUMMER 1

C5 – Energy Changes Exothermic and Endothermic reactions and their reaction profiles. Bond energy calculations and Investigating energy changes	P2 – Electricity Current, Charge, Resistance, Series and Parallel Circuits, Ohmic/Non-ohmic components, Energy and Power in electrical circuits. The national grid and transformers	C8 – Chemical Analysis Pure and Impure substances, formulations and chromatography	Prior Learning C5 – Chemical Energy (Y9) P2 – Electricity 2 (Y9) C8 – Particle Model (Y7/Y8)
---	---	--	--

SUMMER 2

P5 – Forces Scalar and Vector quantities, Resultant Forces, Elastic and inelastic deformation, Speed/Vecloty, graphs of motion. Acceleration and Newtons laws of motion. Momentum	Mock Preparation and Intervention Curriculum based on the needs of students identified from the year 10 summative assessments	Prior Learning P5 – Forces 1 (Y9) Mocks – B1-4, C1-5, P1-4
---	---	---

CAREERS LINKS

Health & safety officer, microbiologist, analytical chemist, physicist, particle physicist, physiotherapist, mechanical engineers, sound engineers, studio technicians, astrophysicist, optician, geologist, aeronautics engineers.

CHARACTER LINKS

Motivation, resilience and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Consideration and construction of moral and ethical arguments in science (moral virtues)

KEY ASSESSMENT DATES

Half termly summative assessments in the following week:
Autumn 1 – 09/10/23 (Chem)
Autumn 2 – 20/11/23 (Bio)
Spring 1 – 08/01/24 (Phys)
Spring 2 – 19/02/24 (Chem)
Summer 1 – 08/04/24 (Bio)
Summer 1 – 20/05/24 (Phys)
Year 10 Mock Exams (19/06-05/07/24)



Combined Science Year 11

AUTUMN 1

P6 - Waves Properties of waves, investigating the behaviour of waves, the EM spectrum and its dangers and uses. Emission and absorption of IR	C8 – Chemical Analysis Pure and Impure substances, formulations and chromatography, testing for gases.	B6 - Inheritance & Evolution Sexual / asexual Reproduction. Genetic disorders and genetic screening, Meiosis, Evolution, Classification of living organisms	Prior Learning P6 – Waves 2 (8) C8 – Particle Model (7/8) B6 – Inheritance and Evolution (9)
---	--	---	--

AUTUMN 2

Mock Revision Targeted revision work in preparation for Mock Exams	Mocks	Feedback and Intervention Identification of and addressing weaknesses in mock performance	Prior Learning Assessed units B1–4 C1-5 P1-4
--	--------------	---	---

SPRING 1

C9 - Chemistry of the Atmosphere Evolution of the atmosphere, composition of the atmosphere, humans and climate change	P7 – Magnets and Electromagnetism Magnetic materials, Magnetic fields, Electromagnets and their uses, The Motor Effect & Fleming Left hand rule, Motors.	Prior Learning C9 – The atmosphere (8) P7 – Non Contact Forces (8)
--	--	---

SPRING 2

C10 - Using Resources Potable water, alt methods of extracting metals, life cycle assessment, corrosion, alloys,	Mock Revision Targeted revision work in preparation for Mock Exams	Mocks	Prior Learning C10 – Resources (9) Assessed units B5-7 C6-10 P5-7
--	--	--------------	---

SUMMER 1

Revision & Exam Preparation Targeting key topics based on Mock feedback and core units. Building exam technique and reducing errors in exam situations. Consolidating the required practicals	Prior Learning B1-7 Biology Units C1-10 Chemistry Units P1-7 – Physics Units
---	--

CAREERS LINKS

Health & safety officer, microbiologist, analytical chemist, physicist, particle physicist, physiotherapist, mechanical engineers, sound engineers, studio technicians, astrophysicist, optician, geologist, aeronautics engineers.

CHARACTER LINKS

Motivation, resilience and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Consideration and construction of moral and ethical arguments in science (moral virtues)

KEY ASSESSMENT DATES

Half termly summative assessments in the following weeks;
 Autumn 1 – 02/10
 Autumn 2 – Year 11 Mock Exams (27/11-08/12)
 Spring 1 – 22/01
 Spring 2 – Year 11 Mock Exams 2 (11/03)
 Summer 1 – 22/04
 Summer 1 – External Exams Start



Biology Year 10

AUTUMN 1

B1 – Cell Biology
 Cell types, the cell cycle, calculating magnification, stem cells, binary fission and Microbiology, diffusion, osmosis, active transport exchange surfaces

Prior Learning
 B1 – Cells 2, Cell Processes (Y9)

CAREERS LINKS

Health & safety officer, microbiologist, analytical chemist, physicist, particle physicist, physiotherapist, mechanical engineers, sound engineers, studio technicians, astrophysicist, optician, geologist, aeronautics engineers.

AUTUMN 2

B2 - Organisation
 Digestive System, Enzymes, Food Tests, The Heart, Blood Vessels, Heart, Lungs, Non-communicable disease, cancer

B3 - Infection & Response
 Communicable diseases, pathogens, the immune system, Drug discovery and development, monoclonal antibodies, plant diseases and defences

Prior Learning
 B2 – Circulatory & Digestive System (Y9)
 B3 – Disease (Y9)

SPRING 1

B3 - Infection & Response
 Communicable diseases, pathogens, the immune system, Drug discovery and development, monoclonal antibodies, plant diseases and defences

B4 - Bioenergetics
 Photosynthesis, transpiration, translocation, uses of glucose, Limiting factors of photosynthesis, Respiration/response to exercise, metabolism

Prior Learning
 B3 – Disease (Y9)
 B4 – Photosynthesis (Y8)
 Respiration (Y8)

CHARACTER LINKS

Motivation, resilience and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Consideration and construction of moral and ethical arguments in science (moral virtues)

SPRING 2

B4 - Bioenergetics
 Photosynthesis, transpiration, translocation, uses of glucose, Limiting factors of photosynthesis, Respiration/response to exercise, metabolism

Prior Learning
 B4 – Photosynthesis (Y8)
 Respiration (Y8)

SUMMER 1

B5 - Homeostasis
 Thermoregulation, The nervous system, reflexes, the brain and the eye. Endocrine system, blood glucose control, the menstrual cycle contraception and fertility. Kidneys, ADH, dialysis & transplant. Plant hormones.

Prior Learning
 B5 – Control Systems (Y9)

KEY ASSESSMENT DATES

Termly summative assessments in the following weeks:
 Autumn 2 – 20/11/23
 Spring 2 – 19/02/24
 Summer 1 – 20/05/24
 Year 10 Mock Exams (19/06-05/07/24)

SUMMER 2

B5 - Homeostasis
 Thermoregulation, The nervous system, reflexes, the brain and the eye. Endocrine system, blood glucose control, the menstrual cycle contraception and fertility. Kidneys, ADH, dialysis & transplant. Plant hormones.

Mocks and Intervention
 Curriculum based on the needs of students identified from the year 10 summative assessments

Prior Learning
 B5 – Control Systems (9)
 B1-4 for Mock Exam

NITIMUR IN EXCELSIS – STRIVE FOR THE HIGHEST



Chemistry Year 10

AUTUMN 1

C1 – Atomic Structure and Bonding

Bonding, reactivity and periodicity, the periodic table and its history, alkali metals, halogens, noble gases and transition metals

C2 – Bonding, Structure and the Properties of Matter

Bonding and properties of small covalent, giant covalent, polymers, ionic compounds, metals, alloys and nanoparticles

Prior Learning

C1 – Atomic Structure (Y9)
C2 – Bonding (Y9)

CAREERS LINKS

Health & safety officer, microbiologist, analytical chemist, physicist, particle physicist, physiotherapist, mechanical engineers, sound engineers, studio technicians, astrophysicist, optician, geologist, aeronautics engineers.

AUTUMN 2

C3 – Quantitative Chemistry

Conservation of mass, apparent mass change, Relative formula mass and percentage by mass, Moles, concentration, limiting reactants. Percentage yield, atom economy, titration calculations and gas volume calculations

Prior Learning

C3 – Balancing Equations (Y8)

SPRING 1

C4 - Chemical Changes

Reactivity series, redox reactions, salt forming reactions, Electrolysis Half equations

Prior Learning

C4 – Acids 2 (Y9)

CHARACTER LINKS

Motivation, resilience and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Consideration and construction of moral and ethical arguments in science (moral virtues)

SPRING 2

C4 - Chemical Changes

Reactivity series, redox reactions, salt forming reactions, Electrolysis Half equations

C5 - Energy Changes

Exothermic and Endothermic reactions and their reaction profiles. Bond energy calculations and Investigating energy changes

Prior Learning

C4 – Acids 2 (Y9)
C5 – Chemical Energy (Y9)

SUMMER 1

C8 – Chemical Analysis

Pure and Impure substances, formulations and chromatography, flame emission spectroscopy, testing for ions in solution

Prior Learning

C8 – Particle Model (Y7/Y8)

KEY ASSESSMENT DATES

Termly summative assessments in the following weeks:
Autumn 2 – 20/11/23
Spring 2 – 19/02/24
Summer 1 – 20/05/24
Year 10 Mock Exams (19/06-05/07/24)

SUMMER 2

Revision & Exam Preparation

Targeting key topics and core units. Building exam technique and reducing errors in exam situations. Consolidating the required practicals

Mocks and Intervention

Curriculum based on the needs of students identified from the year 10 Summative Assessments

Prior Learning

C1-5 for Mock Exam



Physics Year 10

AUTUMN 1

P1 – Energy

Energy transfers, GPE, KE, EPE, Thermal Energy, Insulation, Specific Heat Capacity, Conservation of Energy, Energy Resources

P3 – Particle Model of Matter

Density, internal energy, specific latent heat, particle motion in gases, gas volumes and pressure

Prior Learning

P1 – Energy 2 (Y9)
P3 – Particle Model 2 (Y9)

CAREERS LINKS

Health & safety officer, microbiologist, analytical chemist, physicist, particle physicist, physiotherapist, mechanical engineers, sound engineers, studio technicians, astrophysicist, optician, geologist, aeronautics engineers.

AUTUMN 2

P3 – Particle Model of Matter

Density, internal energy, specific latent heat, particle motion in gases, gas volumes and pressure

P4 – Atomic Structure

Development of the model of the atom, radioactive decay, half-life, uses of nuclear radiation, contamination and irradiation, fission and fusion

Prior Learning

P3 – Particle Model 2 (Y9)
P4 – Radiation (Y9)

SPRING 1

P2 - Electricity

Static, Current, Charge, Resistance, Series and Parallel Circuits, Ohmic/Non-ohmic components, Energy and Power in electrical circuits. The national grid and transformers

Prior Learning

P2 – Electricity 2 (Y9)

CHARACTER LINKS

Motivation, resilience and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Consideration and construction of moral and ethical arguments in science (moral virtues)

SPRING 2

P2 - Electricity

Static, Current, Charge, Resistance, Series and Parallel Circuits, Ohmic/Non-ohmic components, Energy and Power in electrical circuits. The national grid and transformers

Prior Learning

P2 – Electricity 2 (Y9)

SUMMER 1

P5 – Forces

Scalar and Vector quantities, Resultant Forces, Elastic and inelastic deformation, Moments, Levers and gears, Pressure in fluids (upthrust)Speed/Velocity, graphs of motion. Acceleration and Newtons laws of motion. Momentum and conservation of momentum

Prior Learning

P5 – Forces 1 (Y9)

KEY ASSESSMENT DATES

Termly summative assessments in the following weeks:
Autumn 2 – 20/11/23
Spring 2 – 19/02/24
Summer 1 – 20/05/24
Year 10 Mock Exams (19/06-05/07/24)

SUMMER 2

P5 – Forces

Scalar and Vector quantities, Resultant Forces, Elastic and inelastic deformation, Moments, Levers and gears, Pressure in fluids (upthrust)Speed/Velocity, graphs of motion. Acceleration and Newtons laws of motion. Momentum and conservation of momentum

Mocks and Intervention

Curriculum based on the needs of students identified from the year 10 summative assessments

Prior Learning

P5 – Forces 1 (Y9)
P1-4 For Mock Exam



Biology Year 11

AUTUMN 1

B7 - Ecology Competition and Interdependence, Adaptations, Food chains, predator and prey relationships, Pyramids of Biomass, Food Production, Carbon and Water cycles, decay, biomass generators	Prior Learning B7 – Ecology (Y9)
---	--

CAREERS LINKS

Health & safety officer, microbiologist, analytical chemist, physicist, particle physicist, physiotherapist, mechanical engineers, sound engineers, studio technicians, astrophysicist, optician, geologist, aeronautics engineers.

AUTUMN 2

Mock Revision Targeted revision work in preparation for Mock Exams	Mocks	Feedback and Intervention Identification of and addressing weaknesses in mock performance	Prior Learning Assessed units B1–4
--	--------------	---	--

SPRING 1

B6 - Inheritance & Evolution Sexual / asexual Reproduction. Genetic disorders and genetic screening, Meiosis, Evolution, Speciation, Classification of living organisms, cloning	Prior Learning B6 – Inheritance & Evolution (Y9)
--	--

CHARACTER LINKS

Motivation, resilience and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Consideration and construction of moral and ethical arguments in science (moral virtues)

SPRING 2

B6 - Inheritance & Evolution Sexual / asexual Reproduction. Genetic disorders and genetic screening, Meiosis, Evolution, Speciation, Classification of living organisms, cloning	Mock Revision Targeted revision work in preparation for Mock Exams	Mocks	Prior Learning Paper 2 Topics B5-7
--	--	--------------	--

SUMMER 1

Revision & Exam Preparation Targeting key topics and core units. Building exam technique and reducing errors in exam situations. Consolidating the required practical	Prior Learning Paper 1 Topics B1-4 Paper 2 Topics B5-7
---	---

KEY ASSESSMENT DATES

Half termly summative assessments in the following weeks:

- Autumn 1 – 02/10/23
- Autumn 2 – Year 11 Mock Exams (27/11-08/12/23)
- Spring 1 – 22/01/24
- Spring 2 – Year 11 Mock Exams 2 - (11/0/24)
- Summer 1 – 22/04/24
- Summer 1 – External Exams Start

NITIMUR IN EXCELSIS – STRIVE FOR THE HIGHEST



Chemistry Year 11

AUTUMN 1

<p>C8 - Chemical Analysis Pure / impure, formulations, chromatography, testing for gases, ion testing. Flame emission spectroscopy</p>	<p>C7 – Organic Chemistry Crude oil, hydrocarbons and alkanes, fractional distillation, cracking, alkenes, alcohols, carboxylic acids, addition and condensation polymerisation, amino acids and DNA</p>	<p>Prior Learning C8 – Particle Model (Y7/Y8) C7 – Structure and bonding (Y9/Y10)</p>
---	---	--

AUTUMN 2

<p>C7 – Organic Chemistry Crude oil, hydrocarbons and alkanes, fractional distillation, cracking, alkenes, alcohols, carboxylic acids, addition and condensation polymerisation, amino acids and DNA</p>	<p>Mock Revision Targeted revision work in preparation for Mock Exams</p>	<p>Mocks</p>	<p>Feedback and Intervention Identification of and addressing weaknesses in mock performance</p>	<p>Prior Learning C7 – Structure and bonding (Y9/Y10) Assessed units C1-5</p>
---	--	---------------------	---	--

SPRING 1

<p>C9 – Chemistry of the Atmosphere Earth's atmosphere and Earth's early atmosphere, changes in carbon dioxide and oxygen levels, carbon footprint and global climate change, global warming, pollutants from fuel</p>	<p>C10 - Using Resources Potable water, alt methods of extracting metals, life cycle assessment, corrosion, alloys, Ceramics, Composites, polymers, fertilisers</p>	<p>Prior Learning C10 – Resources (Y9)</p>
---	--	---

SPRING 2

<p>C10 - Using Resources Potable water, alt methods of extracting metals, life cycle assessment, corrosion, alloys, Ceramics, Composites, polymers, fertilisers</p>	<p>Mock Revision Targeted revision work in preparation for Mock Exams</p>	<p>Mocks</p>	<p>Prior Learning C10 – Resources (Y9) Paper 2 Topics C6-10</p>
--	--	---------------------	--

SUMMER 1

<p>Revision & Exam Preparation Targeting key topics and core units. Building exam technique and reducing errors in exam situations. Consolidating the required practicals</p>	<p>Prior Learning Paper 1 Topics C1-5 Paper 2 Topics C6-10</p>
--	---

CAREERS LINKS

Health & safety officer, microbiologist, analytical chemist, physicist, particle physicist, physiotherapist, mechanical engineers, sound engineers, studio technicians, astrophysicist, optician, geologist, aeronautics engineers.

CHARACTER LINKS

Motivation, resilience and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Consideration and construction of moral and ethical arguments in science (moral virtues)

KEY ASSESSMENT DATES

Half termly summative assessments in the following weeks:
Autumn 1 – 02/10/23
Autumn 2 – Year 11 Mock Exams (27/11-08/12/23)
Spring 1 – 22/01/24
Spring 2 – Year 11 Mock Exams 2 - (11/03/24)
Summer 1 – 22/04/24
Summer 1 – External Exams Start

NITIMUR IN EXCELSIS – STRIVE FOR THE HIGHEST



Physics Year 11

AUTUMN 1

P6 - Waves Waves: wave types, measuring waves, reflection & refraction. Sound Waves, Uses of waves for exploration, Electromagnetic spectrum, uses and dangers of EM waves	P8 - Space Physics The life cycle of stars, orbital motion and orbits, the Big Bang Theory, Red Shift	Prior Learning P6 – Waves 2 (Y8) P8 – Universe (Y8)
--	---	--

AUTUMN 2

P8 - Space Physics The life cycle of stars, orbital motion and orbits, the Big Bang Theory, Red Shift	Mock Revision Targeted revision work in preparation for Mock Exams	Mocks	Feedback and Intervention Identification of and addressing weaknesses in mock performance	Prior Learning P8 – Assessed units P1-4
---	--	--------------	---	---

SPRING 1

P7 - Electromagnets Magnetic materials, magnetic fields, electromagnets and their uses, The Motor Effect & Fleming left hand rule, motors & loudspeakers, The Generator Effect Inc. microphones, transformers.	Prior Learning P7 – Non-Contact Forces (Y8)
--	---

SPRING 2

P7 - Electromagnets Magnetic materials, magnetic fields, electromagnets and their uses, The Motor Effect & Fleming left hand rule, motors & loudspeakers, The Generator Effect Inc. microphones, transformers.	Mock Revision Targeted revision work in preparation for Mock Exams	Mocks	Prior Learning P7 – Non-Contact Forces (Y8) Paper 2 Topics P5-8
--	--	--------------	--

SUMMER 1

Revision & Exam Preparation Targeting key topics and core units. Building exam technique and reducing errors in exam situations. Consolidating the required practical.	Prior Learning Paper 1 Topics P1-4 Paper 2 Topics P5-8
--	---

CAREERS LINKS

Health & safety officer, microbiologist, analytical chemist, physicist, particle physicist, physiotherapist, mechanical engineers, sound engineers, studio technicians, astrophysicist, optician, geologist, aeronautics engineers.

CHARACTER LINKS

Motivation, resilience and teamwork (performance virtues). Confidence and determination Listening, critical thinking and problem solving (intellectual virtues). Consideration and construction of moral and ethical arguments in science (moral virtues)

KEY ASSESSMENT DATES

Half termly summative assessments in the following weeks:

- Autumn 1 – 02/10/23
- Autumn 2 – Year 11 Mock Exams (27/11-08/12/23)
- Spring 1 – 22/01/24
- Spring 2 – Year 11 Mock Exams 2 - (11/03/24)
- Summer 1 – 22/04/24
- Summer 1 – External Exams Start

NITIMUR IN EXCELSIS – STRIVE FOR THE HIGHEST