

10B2
Photosynthesis
and
Respiration

10B3
Ecosystems
and
Biodiversity

Homeostasis
and the Human
Nervous and
Endocrine
System



11B2
Reproduction,
Variation,
Evolution and
Classification



Science	Year 11	Autumn Term

10B1 Biology Topic 1 – Homeostasis

Topic Outline & Aims (Intent)

- Nervous System: What structures make up the nervous system?
- 2. Reflex Arc: How does the reflex arc protect us?
- 3. **Reactions:** How can we investigate reaction time?
- 4. Homeostasis: How does the human body maintain a stable environment?
- 5. **Endocrine System:** Where are hormones produced and released from?
- 6. **Blood Glucose Levels:** How are blood glucose levels controlled?
- 7. **Diabetes:** What is diabetes and how is it treated?
- 8. **Puberty & The Menstrual Cycle:** What hormones are involved in managing the menstrual cycle?
- 9. Contraception: How can pregnancy be prevented?
- 10. Fertility Treatments: How can fertility be increased?
- 11. Negative Feedback: How is the fight or flight response coordinated?

Key Skills and Knowledge taught through this topic (Intent)

- ✓ Describe the function of the nervous system in humans
- Describe how information is passed through the nervous system
- ✓ Explain how the structure of the nervous system is adapted to its functions
- ✓ Explain how structures in a reflex arc relate to their functions
- ✓ Explain the importance of reflex actions.
- ✓ Required Practical 6: Describe a method to investigate the effect of a factor on human reaction time
- Extract and interpret data about the functioning of the nervous system from graphs, charts and tables
- ✓ Translate information about reaction times between numerical and graphical forms
- ✓ Give a definition of the term homeostasis
- ✓ Explain why homeostasis is important for the body
- Give examples of conditions in the body that are automatically controlled by nervous or chemical responses
- ✓ Describe the role of receptors, coordination centres and effectors in automatic control system
- ✓ Name and identify the main glands that make up the human endocrine system
- ✓ Describe the function of the human endocrine system
- ✓ Describe how hormones are transported to a target organ
- ✓ Compare the effects of the endocrine system to the effects of the nervous system in terms of speed and length of action
- ✓ Describe the function of the pituitary gland

- ✓ Name the gland that monitors and controls blood glucose concentration
- ✓ Explain the changes that take place in the body if the blood glucose concentration is too high
- ✓ Compare the causes of Type 1 and Type 2 diabetes and explain how they can be treated
- Extract information and interpret data from graphs that show the effect of insulin on blood glucose levels in both people with diabetes and without
- ✓ Describe the role of male and female reproductive hormones in puberty
- ✓ Describe the main stages of the menstrual cycle
- Name the hormones involved in the menstrual cycle, and describe their roles
- Give examples of hormone and non-hormonal contraception and evaluate them
- ✓ Explain the changes that take place in the body if blood glucose concentration is too low
- Explain how glucagon interacts with insulin in a negative feedback cycle to control blood glucose levels in the body
- ✓ Explain the interactions of female reproductive hormones
- Explain the use of hormones in modern reproductive technologies to treat infertility
- ✓ Describe the main steps in the process of IVF
- ✓ Explain how the development of microscopy techniques has enabled IVF treatments to develop
- Name the glands that produce thyroxine and adrenaline, and describe their role.

Prior Learning (Context)

KS3: Science Programmes of Study

- Cells and Organisation
- Coordination and response
- Chemical control in organisms
- Interactions and systems

Future Learning (Context)

AQA A-Level Specification

 Organisms respond to changes in their internal and external environment

National Curriculum Links (Context)

KS4: Science Programmes of Study

- Nervous coordination and control
- Structure and function of human nervous system
- Reflex arc











11B2 Reproduction, Variation, **Evolution and** Classification



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Science	Year 11	Autumn Term
	11B1 Biology Topic 1 – Homeostasis	

RRSA Links

ARTICLE 12: Right to be heard. ARTICLE 24: Health, Water, Food, Environment. ARTICLE 28: Right to education. ARTICLE 29: Goals of education.

British Values Links

INDIVIDUAL LIBERTY: Choice over lifestyle factors that impact homeostasis (diet, exercise, drug use)

RULE OF LAW: How laws regulate the use of medical technology (IVF, hormone treatments) DEMOCRACY: How laws regulate the use of medical technology (IVF, hormone treatments) TOLERANCE OF DIFFERENT FAITHS AND BELIEFS: Respecting cultural/religious views about fertility treatment or hormone use

Eco-Schools Links

HEALTHY LIVING: Impact of processed vs fresh foods on blood glucose regulation. SUSTAINABLE LIFESTYLES: Promoting active travel as both healthy and eco-friendly

Me and My Hormones – May Neuron, synapse, Ng neurotransmitter, stimulus, The Biology Book: Big Ideas Simply Explained - DK hormone, insulin, adrenaline, The Idiot Brain - Dean Burnett negative feedback,

Recommended Reading List.

Reading / Enrichment

Key Vocabulary (Literacy)

receptor, effector, reflex arc, gland, thyroxine, oestrogen, testosterone, thermoregulation, osmoregulation, blood glucose, metablism

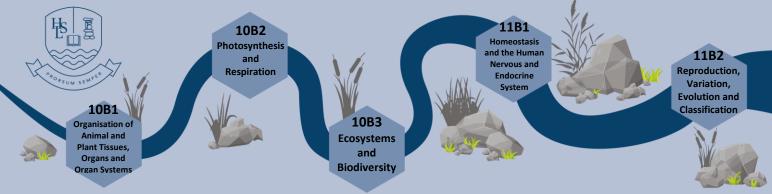
Numeracy Opportunities Making measurements; Comparing size; Converting units; Calculating averages and percentages; Rounding results; Drawing and analysing figures, results tables and scatter graphs.

Assessment of Learning (Impact)

- Individual questioning, lesson and homework activities
- Classwork in student folders with Review lesson
- Practical activities carried out throughout topic
- 11B1 Standard Homework 1 and 2 with Feedback lesson

Career Links

Endocrinologist, neurologist, diabetes specialist nurse, dietitian, biomedical scientist, neuroscientist, pharmacologist, genetic engineer, sports scientist, physiotherapist, occupational therapist



Science	Year 11	Spring Term		
11P2 Piology Tonic 2 Poproduction Variation Evolution and Classification				

11B2 Biology Topic 2 – Reproduction, Variation, Evolution and Classification

Topic Outline & Aims (Intent)

- 1. Classification of Living Things: How are organisms classified?
- Sexual and Asexual Reproduction: How can organisms reproduce?
- 3. <u>DNA and the Genome</u>: What is the importance of DNA?
- 4. Meiosis: How do humans reproduce?
- 5. <u>Genetic Inheritance and Genetic Crosses</u>: How are characteristics inherited?
- 6. <u>Sex Determination and Family Trees</u>: What determines sex?
- 7. <u>Inherited Disorders</u>: How are genetic disorders inherited?
- 8. <u>Embryo Screening</u>: Why screen embryos?

Key Skills and Knowledge taught through this topic (Intent)

- Describe the system of classification Linnaeus developed; Explain what the binomial system is; Explain how developments in biology led to new systems of classification; Describe the three-domain system of classification.
- Describe what sexual reproduction involves in animals and flowering plants in terms of gametes; Describe why sexual reproduction leads to offspring variety; State what type of cell division formation of gametes involves; Describe why asexual reproduction leads to identical offspring; State what cell division type the asexual reproduction involves
- ✓ Discuss the importance of understanding the human genome; Explain how understanding the human genome is important in searching for genes linked to different diseases; Explain how understanding the human genome is important in understanding and treating inherited disorders; Explain how understanding the human genome is important in tracing past human migration patterns.
- Explain what a gamete is; Explain what a chromosome is; Explain what a gene is; Explain what an allele is; Explain what a dominant allele is; Explain what a recessive allele is; Explain what homozygous means; Explain what heterozygous means; Explain what a genotype is; Explain what a phenotype is.
- ✓ Understand the concept of probability in predicting the results of a single gene cross; State that most phenotype features are the result of multiple genes rather than single gene inheritance; Use direct proportion & simple ratios to express outcome of a genetic cross; Complete a Punnett square diagram; Extract and interpret information from genetic crosses and family trees; Construct a genetic cross by Punnett square diagram; Use this genetic cross to make predictions using the theory of probability.
- ✓ State what polydactyly is and how it is caused; State what cystic fibrosis is and how it is caused.
- ✓ Make informed judgements about economic, social and ethical issues concerning embryo screening
- ✓ State the number of chromosomes in a human body cell; State what 22 pairs do and what the other pair does; State the female and male sex chromosomes; Carry out a genetic cross to show sex inheritance.

- 9. Variation: How can organisms differ?
- 10. Natural Selection: How can species evolve naturally?
- 11. Selective Breeding: How can species evolve artificially?
- 12. Genetic Engineering I: What is genetic engineering?
- 13. Genetic engineering II: Should genetic engineering be allowed?
- 14. <u>Evidence for Evolution I</u>: How do fossil show evidence of evolution?
- 15. <u>Evidence for Evolution II</u>: How do resistant bacteria show evidence of evolution?
- 16. Extinction: How can we protect species?
- State what variation is; State what differences in characteristics of individuals in a population may be due to; State that there is usually extensive genetic variation within a population of a species; Recall that all variants arise from mutations and how amounts of mutation affect the phenotype; Describe how mutations can lead to a relatively rapid change in a species.
- ✓ State the theory of evolution by natural selection; Explain how evolution occurs through natural selection; Describe how two new species can be formed from one species.
- Explain impact of selective breeding of food plants and domesticated animals; Explain what selective breeding is and when and what humans first selectively bred; Explain how selective breeding produces desired characteristics; Describe what desired characteristics are chosen for; Describe what inbreeding is.
- Describe how genetic engineering produces a desired characteristic; State how plant crops have been genetically engineered; State how bacterial cells have been genetically engineered; Explain potential benefits and risks of genetic engineering in agriculture and medicine; Explain some people have objections to genetic engineering; Describe the process of "cutting out" genes in genetic engineering; Describe what GM crops are; Describe the features of GM crops; Describe the concerns about GM crops; State why modern medical research is exploring genetic modification; Describe the main steps in the process of genetic engineering.
- ✓ Describe the evidence for evolution; Describe what a fossil is; Describe the three ways fossils may be formed; Describe why many early forms of life have not left fossil evidence; Describe why scientists cannot be certain how life began on Earth; Describe what we can learn from fossils about life on Earth; Extract and interpret information from charts, graphs and tables e.g. evolutionary trees; Describe factors which may contribute to a specie's extinction.
- State why bacteria can evolve rapidly; State how new strains of bacterial pathogens are produced: Explain why a resistant bacterial strain can spread: State a bacteria that is resistant to antibiotics; Describe what can be done to reduce the rate of development of antibiotic resistant strains; Explain why we are unlikely to keep up with emergence of new resistant strains.











11B2 Reproduction, Variation, **Evolution and** Classification



Science Year 11 **Spring Term** 11B2 Biology Topic 2 – Reproduction, Variation, Evolution and Classification

Prior Learning (Context)

KS3: Science Programmes of Study

- Cells and organisation (page 5)
- Reproduction (page 6)
- Inheritance, chromosomes, DNA and genes (page 7)

KS4: Science Programmes of Study

- Cell Biology (page 7)
- Transport systems (page 8)
- Health, disease and the development of medicines (page 8)

Future Learning (Context)

KS5: A-Level Biology

- **AQA A-Level Biology**
- **Edexcel Salters-Nuffield Biology A**
- **Edexcel Biology B**
- **OCR A Biology**
- **OCR B Biology**
- **Edugas A-Level Biology**

National Curriculum Links (Context)

KS4: Science Programmes of Study

- Health, disease and the development of medicines (page 8)
- Coordination and control (pages 8-9)
- Evolution, inheritance and variation (pages 9-10)

RRSA Links

ARTICLE 6: Life, survival and development. ARTICLE 13: Freedom of expression.

ARTICLE 24: Health and health services.

ARTICLE 28: Right to education.

ARTICLE 12: Respect for the views of the child.

ARTICLE 31: Leisure, play and culture

ARTICLE 23: Children with a disability.

ARTICLE 29: Goals of education.

British Values Links

MUTUAL RESPECT: Working together with tolerance and mutual understanding, treating each other with respect.

THE RULE OF LAW: Understanding and following lab rules and the laws of nature.

INDIVIDUAL LIBERTY: Thinking independently and expressing views appropriately with confidence in a safe, supporting environment.

Eco-Schools Links

BIODIVERSITY: Maintaining a high level of plant, insect and animal life locally and globally. GLOBAL CITIZENSHIP: Taking an active role in your community and making our planet more peaceful, sustainable and fair.

LITTER: Reducing litter, which harms wildlife and costs millions to clear every year.

MARINE: Protecting and conserving water-based ecosystems.

WASTE: Refusing, reducing, reusing, repairing, recycling.

Assessment of Learning

(Impact)

- Individual questioning, lesson and homework activities
- Classwork in student folders with Review lesson
- Practical activities carried out throughout topic
- 11B2 Standard Homework 1 and 2 with Feedback lesson
- Mock Biology Paper 2 Exam in March.

Reading / Enrichment

A Brief History of Everyone Who Ever Lived: The Stories

in Our Genes

- Adam Rutherford The Selfish Gene
- Richard Dawkins

Beyond DNA: How **Epigenetics is Transforming** our Understanding of

> **Evolution** – Benjamin Oldroyd

Recommended Reading List.

Key Vocabulary (Literacy)

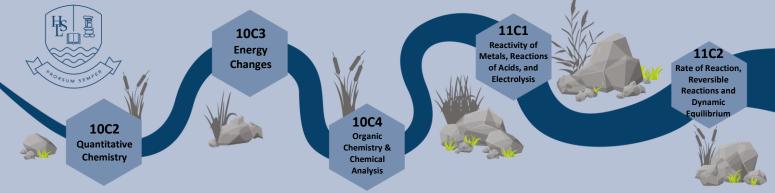
DNA; Gene; Chromosome; Allele; Genotype; Phenotype; Dominant; Recessive; Homozygous; Heterozygous; Gamete; Fertilisation; Mutation; Variation; Genetic Engineering; Selective Breeding; Evolution; Natural Selection; Extinction; Classification. Complete topic glossary provided.

Numeracy Opportunities Identifying magnification;

Making measurements; Comparing size; Converting units; Calculating averages and percentages; Rounding results; Drawing and analysing results tables and scatter graphs.

Career Links

Geneticist; Biotechnologist; Genetic Counsellor; **Evolutionary Biologist;** Bioinformatician; Molecular Biologist; Embryologist; Taxonomist; Conservation Biologist; Forensic Scientist; Agricultural Scientist; Animal Breeder; Teacher; Biomedical Scientist; Zoologist; Ecologist.



11C1 Reactivity of Metals, Reactions of Acids, and Electrolysis

Topic Outline & Aims (Intent)

- 1. **Reactivity series** What is the reactivity series and how can it be used to make predictions about chemical reactions?
- Oxidation of metals What happens to metals in the environment when they are exposed to oxygen?
- 3. <u>Experimental skills review</u> What are the key skills needed for carrying out a successful experiment?
- 4. <u>Displacement reactions</u> What is a displacement reaction and what is the link to the reactivity series?
- 5. Extraction and redox How can we extract metals?
- 6. <u>Reactions of acids with metals</u> What happens when metals come into contact with acids?
- 7. <u>Neutralisation of acids and salt production</u> How can we make different salts?
- 8. Required practical 8 Making copper sulphate
- 9. Soluble salts What happens when salts dissolve?

- 10. pH scale and neutralisation What is the pH scale and what happens during neutralisation?
- 11. Required practical 10 Neutralisation reactions
- 12. Strong and weak acids What is the difference between a strong and weak acid?
- 13. What is electrolysis? Why do we need to use electrolysis to extract certain metals?
- 14. Extraction of aluminium How can aluminium metal be produced from aluminium ore?
- 15. <u>Electrolysis of aqueous compounds</u> How can electrolysis be used to extract other substances?
- 16. Required practical 9 Electrolysis
- 17. <u>Electrolysis half equations</u> What is happening at the anode and the cathode?
- **18.** <u>Electrolysis review</u> A review of the key ideas from electrolysis.

Key Skills and Knowledge taught through this topic (Intent)

- ✓ Explain why a metal reacting with oxygen is an oxidation reaction
- ✓ Explain oxidation in terms of oxygen
- ✓ Explain reduction in terms of oxygen
- Describe the reactions of potassium, sodium, lithium, calcium and magnesium with water.
- Write word and symbol equations for the reactions of metals with water
- Describe the reactions magnesium, zinc. Iron and copper with dilute acids
- Write word and symbol equations for the reactions of metals with dilute acids
- Use observations from reactions of metals to determine the order of their reactivity
- ✓ Recall the full reactivity series
- ✓ Explain what the reactivity series is
- ✓ State which two non-metals are often in the reactivity series
- Describe what happens when a more reactive metal is reacted with a less reactive metal in a compound
- ✓ Write ionic equations for displacement reactions
- Explain why a metal is more or less reactive in terms of its tendency to form an ion
- ✓ State how most metals are found in the Earth
- Describe how metals less reactive than carbon can be extracted by reduction with carbon

- ✓ State that unreactive metals, such as gold, are found native in the Farth
- ✓ Evaluate different methods of metal extraction
- ✓ Identify which substance is oxidised or reduced in terms of oxygen loss or gain
- ✓ Explain what oxidation and reduction are in terms of electrons
- Identify which substance is oxidised or reduced in a given reaction or equation
- ✓ Name the products when any acid reacts with a metal
- Explain these are redox reactions in terms of gain or loss of electrons
- State what is produced when an acid is neutralised by an alkali or base
- ✓ State examples of substances that are bases and alkalis are
- State what is produced when an acid is neutralised by a metal carbonate
- Describe what the salt produced in a reaction between an acid and base or alkali depends on
- ✓ Predict products from given reactants
- ✓ Use formulae of common ions to deduce formulae of salts
- Describe what substances can be reacted with an acid to produce a soluble salt
- ✓ Describe how to make pure, dry samples of named soluble salts
- Required practical 8: preparation of a pure, dry sample of a soluble salt from an insoluble base or carbonate, using a Bunsen burner to heat dilute acid and a water bath or electric heater to evaporate the solution

Prior Learning (Context) KS3: Science Programmes of Study ➤ The particulate nature of matter (page 8) ➤ Atoms, elements and compounds (page 8) ➤ The Periodic Table (Page 9) Future Learning (Context) KS4: Science Programmes of Study ➤ Rate and extent of chemical change (page industries (page 13)) KS4: Science Programmes of Study ➤ Chemical analysis & Chemical and allied industries (page 13)

Science Year 11 Autumn Term

11C1 Reactivity of Metals, Reactions of Acids, and Electrolysis

Key Skills and Knowledge taught through this topic (Intent) *Continued...*

- Describe the use of universal indicator or a wide range indicator to measure the approximate pH of a solution
- ✓ Use the pH scale to identify acidic or alkaline solutions
- Describe the difference between a weak and strong acid in terms of its ionisation in an aqueous solution
- ✓ Give examples of strong acids
- ✓ Give examples of weak acids
- ✓ Describe the relationship between pH and strength of an acid
- Describe the relationship between pH value and hydrogen ion concentration
- ✓ Use the terms dilute and concentrated and weak and strong in relation to acids
- ✓ Explain the terms dilute and concentrated and weak and strong
 in relation to acids
- Describe neutrality in terms of the effect on hydrogen ion concentration and the numerical value of pH
- ✓ Describe relative acidity in terms of the effect on hydrogen ion concentration and the numerical value of pH
- Describe what happens to the ions when an ionic compound is melted or dissolved in water
- ✓ Describe what an electrolyte is
- ✓ Describe what electrolysis is
- ✓ State which ions move to the cathode in electrolysis
- ✓ State which ions move to the anode in electrolysis
- Write half equations for the reactions occurring at the electrodes during electrolysis
- ✓ Complete and balance half equations

- ✓ Describe what is produced at the electrodes when a simple ionic compound is electrolysed in its molten state
- ✓ Predict products of electrolysis of binary ionic compounds in the molten state
- Explain what ions are discharged at the cathode in electrolysis of an aqueous solution
- Explain what ions are discharged at the anode in electrolysis of an aqueous solution
- Explain why the ions discharged when an aqueous solution is electrolysed using inert electrodes depend on the relative reactivity of the elements involved
- ✓ Predict the products of the electrolysis of aqueous solutions containing a single ionic compound
- ✓ Required practical activity 9: investigate what happens when aqueous solutions are electrolysed using inert electrodes. This should be an investigation involving developing a hypothesis.
- Explain what happens at the cathode in terms of electrons and reduction
- Explain what happens at the anode in terms of electrons and oxidation
- Explain why electrolysis is used to extract some metals (in terms of reactivity)
- ✓ Describe how aluminium is manufactured
- Explain why the electrolyte is a mixture in electrolysis to extract metals
- Explain why the positive electrode must be continually replaced

RRSA Links

ARTICLE 6 – Right to Life, Survival and Development ARTICLE 24: Health, Water, Food, Environment.

ARTICLE 17 – Access to Information

ARTICLE 29: Goals of education.

British Values Links

INDIVIDUAL LIBERTY: Students explore different approaches to chemical problems. Make informed decisions about careers, sustainability, and personal health based on evidence

RULE OF LAW: Exploring the legal restrictions on Chemical industries who must follow strict legal regulations to ensure public safety (e.g. handling hazardous substances). DEMOCRACY: In a democracy, citizens need scientific literacy to make informed decisions on issues like; Environmental policy or Sustainable industry.

TOLERANCE OF DIFFERENT FAITHS AND BELIEFS: Some chemical applications (e.g. use of substances in food, cosmetics, medicine) may intersect with religious or cultural beliefs.

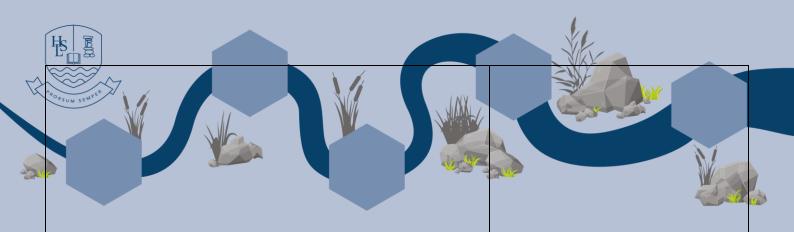
Eco-Schools Links

Extraction of metals (e.g. using carbon or electrolysis) highlights the environmental cost of mining and refining raw materials. - Encourages discussion on recycling metals to reduce energy use and environmental damage. Students can explore life cycle assessments and the sustainability of different extraction methods.

Understanding the impact of mining in developing countries (e.g. for aluminium or copper).

Assessment of Learning (Impact)

- Individual questioning, lesson and homework activities
- Classwork in student folders with Review
 lesson
- Practical activities carried out throughout topic
- 11C1 Standard Homework 1 & 2, with Feedback lesson
- 11C1 End of topic assessment with Feedback lesson



Reading / Enrichment What's Chemistry All About? Alex Frith

Discover the Amazing Effect Chemistry
Has on Every Part of Our Lives
Ann Newmark

Chemistry DeMYSTiFieD Linda D. Williams

Recommended Reading List.

Key Vocabulary

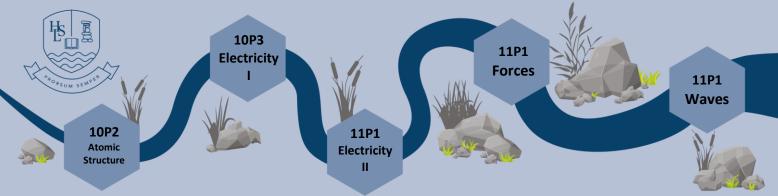
(Literacy) Reactivity series, displacement reaction, oxidation, reduction, redox reaction, acid, base, alkali, neutralisation, salt, pH scale, indicator, universal indicator, strong acid, weak acid, concentrated acid, dilute acid, metal oxide, metal hydroxide, metal carbonate, electrolysis, electrolyte, anode, cathode, ion, cation, anion, aqueous solution, extraction, ore, reactivity, corrosion, tarnish. Complete topic glossary provided.

Numeracy Opportunities

Interpreting data, plotting graphs, reading scales, calculating pH values, using the pH scale, balancing chemical equations, calculating concentration, using molar ratios, calculating volumes, measuring temperature changes, calculating energy changes, using units (mol/dm³, g, cm³), estimating uncertainties, calculating percentage yield, using formulae, calculating mean values, identifying anomalies, using significant figures, converting units.

Career Links

Chemical engineer, analytical chemist, industrial chemist, laboratory technician, environmental scientist, materials scientist, metallurgist, waste management specialist, water quality scientist, pharmaceutical scientist, forensic scientist, science teacher, energy consultant, mining engineer, corrosion specialist, electrochemist, toxicologist, sustainability officer, quality control analyst, research scientist.



Science	Year	Year 11		Autumn Term		
11P1 Physics Topic 1 – Electricity II						
Topic Outline & Aims (Intent) 1. How do resistors affect a circuit? 2. How do we investigate resistance?		 5. How do we use LDRs in sensing circuits? 6. How does a plug work? 7. What is the role of the National Grid? 				
3. What do I-V characteristics tell us? 4. How do we use thermistors in sensing circuits?		8. Why are transformers important to the National Grid? 9. How can we use electricity equations?				
 Key Skills and Knowledge taught through this topic (Intent) ✓ Use electrical circuit symbols, draw and make simple circuits. ✓ Describe resistance, explain how resistors behave when placed in series and in parallel. 		 ✓ Use a thermistor in a circuit to detect changes in temperature. ✓ Use an LDR in a circuit to detect changes in light intensity. ✓ Explain the role of the National Grid. ✓ Use and transform equations relating to electricity. 				
Prior Learning (Context) KS3: Science Programmes of Stude Current electricity (page 12)	Future Learning KS4: Science Program Electricity (page 15 and 2)	nmes of Study	Context) National Curriculum Links (Context) es of Study KS3: Science Programmes of Study			
ARTICLE 1: Definition of the child. ARTICLE 6: Life, survival and development. ARTICLE 12: Respect for the views of the child. ARTICLE 13: Freedom of expression. ARTICLE 24: Health, Water, Food, Environment ARTICLE 28: Right to education. ARTICLE 29: Goals of education.			Assessment of Learning (Impact) Individual questioning, lesson and homework activities Classwork in student folders			
MUTUAL RESPECT: Working to treating each other with respe THE RULE OF LAW: Understand INDIVIDUAL LIBERTY: Thinking with confidence in a safe, support Consider how electrical usage heating. Generating electric	he laws of nature. ews appropriately	 with Review lesson Practical activities carried out throughout topic 11P1 Standard Homework 1 and 2 with Feedback lesson 11P1 Topic Test with Revision and Feedback lessons 				
Reading / Enrichment Electricity & Circuits - Greg Hughes Mad About Physics:	Key Vocabulary (Literacy) Charge; Coulomb; Ammeter; Voltmeter; Current; Ampere; Potential difference; Volt;	Numeracy Oppor Making measurer Comparing size; Co units;	ments;	Career Links Electrician; Electrical Technician; Railway Technician;		

Brainteasers, Paradoxes, and Curiosities - Christopher Jargodzki & Franklin Potter Nikola Tesla: Imagination and the Man That Invented the 20th Century - Sean Patrick Recommended Reading List.

Resistance; Ohm; Ohmic; Watts; Resistor; thermistor; Light-dependent resistor

Complete topic glossary provided.

Using and rearranging equations; Calculating averages, resultant forces and percentages; Rounding results; Drawing and analysing accurate scientific diagrams, results tables, and scatter graphs.

Telecommunications Engineer; Medical Physicist; Electrical Engineer; Electronics Engineer; Power Systems Engineer; Renewable Energy Engineer; Automotive Electrician; Civil / Building Services Engineer; Materials Scientist