



Year 10 Spring Term 1 (January – March 2024)

Curriculum Overview



Core Subjects – All learners

English

Language

Paper 1: Imaginative Writing

- Communicate clearly, effectively, and imaginatively, selecting and adapting tone, style and register for different forms, purposes and audiences.
- Organise information and ideas, using structural and grammatical features to support coherence and cohesion of texts.
- Use a range of vocabulary and sentence structures for clarity, purpose and effect, with accurate spelling and punctuation.

Literature

We continue to study our core exam text: William Shakespeare’s Macbeth

- Students should be able to: maintain a critical style and develop an informed personal response. Use textual references, including quotations, to support and illustrate interpretations.
- Analyse the language, form and structure used by a writer to create meanings and effects, using relevant subject terminology where appropriate.
- Show understanding of the relationships between texts and the contexts in which they were written.

Mathematics

Foundation Mathematics Topics

Algebra:

Plot Horizontal and Vertical Lines e.g. $y=5$ and $x=3$
 Plot Linear Graphs
 Find the Midpoint of a Line Segment
 Find the Gradient and y Intercept of a Line Segment from a Graph
 Plot 2 Linear Equations and Find Intersection

Proportion & Probability:

Direct Proportion (no Equation)
 Solving Problems with Similarity & Defining the word Congruent
 Using a SF to Find a Missing Length
 To understand and Use the Probability Scale
 To know Probability sums to 1 and solve simple problems
 Sample Space Diagrams - Complete and Find Probabilities
 Probability/Frequency Trees Problems
 Solve Probability Problems Using Venn Diagrams
 Solve Probability Problems incl. Relative Frequency

Higher Mathematics Topics

Algebra:

Solve Simultaneous Equations by Elimination
 Plotting Graphs (including Quad, Cubic, Exponential and Reciprocal)
 Find the Midpoint, Gradient and y Intercept of a Line Segment
 Find the equation of a Line from a Graph and 2 Points
 Find Parallel and Perpendicular Gradients and Equations
 Rearrange Equations/Expression
 Simplify Algebraic Fractions
 Add and Subtract with Algebraic Fractions
 Multiply and Divide with Algebraic Fractions
 1 and 2 Step Inequalities and Expression in Centre
 Graph Inequalities and Shade Regions

Number:

Surds – multiply, divide, simplify, add, subtract, expand brackets, rationalise

Combined Science

Biology

B8 Photosynthesis

- Recall the word and symbol equation for photosynthesis
- Describe photosynthesis as an endothermic reaction.
- Explain the effects of light intensity, carbon dioxide concentration, temperature, and amount of chlorophyll on the rate of photosynthesis.
- Interpret graphs showing how these variables affect the rate of photosynthesis.
- Investigate the effect of light intensity on rate of photosynthesis in an aquatic plant.

Required practical: Investigating the effect of light intensity on the rate of photosynthesis

B9 Respiration

- Recall the word and symbol equations for aerobic and anaerobic respiration.
- Describe respiration as an exothermic reaction and explain the importance of energy in cells.
- Describe the differences between aerobic and anaerobic respiration.
- Describe how the body reacts to an increased demand for energy.
- Define the term metabolism and give examples of metabolic reactions

Chemistry

C5 Chemical changes

- Describe how the reactivity of metals can be compared.
- Use word and symbol equations to explain how displacement reactions can be used to compare the reactivity of metals.
- Describe and explain the steps used in methods to produce pure, dry soluble salt crystals.
- Use word and balanced symbol equations to represent chemical reactions from general equations.
- Use the pH scale to compare solutions and explain how neutralisation occurs.
- **Required practical:** Producing soluble salts by neutralisation.

C6 Electrolysis

- Define the terms electrolysis, electrolyte, ion, oxidation, and reduction.
- Describe the process of electrolysis of molten ionic compounds.
- Make predictions about the products of electrolysis.
- Explain the products of the electrolysis of aluminium oxide.
- Explain the products of the electrolysis of aqueous sodium hydroxide
- **Required practical:** Electrolysis of solutions

Physics

P5 Electricity in the home

- Describe the difference between Alternating Current (A.C) and Direct Current (D.C) electrical sources.
- Explain the components in a 3 - pin plug.
- Explain how energy is conserved in terms of current and Potential Difference (P.D.) during energy transfers by an electric current.
- Use the equations $E = P \times t$, $P = V \times I$ and $P = I^2 \times R$ and $Q = I \times t$.
- Calculate and compare the electrical efficiency of an electrical device and the cost of using it.

Core Physical Education

Shared Goals

Learners will understand the importance of a vision or goal and how to achieve that alongside others.

Communication

Learners will understand a range of communication techniques and to develop the ability to communicate effectively within a team.

ARRK Lessons

Core Values
Aspirational
Resilient
Respectful
Kind

Relationships

Learners should know:

The concepts of, and laws relating to, sexual consent, sexual exploitation, abuse, grooming, coercion, harassment, rape, domestic abuse, forced marriage, honour-based violence and FGM, and how these can affect current and future relationships.

Option Subjects Overview

Humanities

History	<p>The challenges of Natural Hazards: Tectonic and Weather. The risks posed by natural hazards. The physical processes involved in creating natural hazards. The effects of and responses to natural hazards, comparisons between LIC, NEE and HIC. Global atmospheric circulation. Tropical storms, their impact, and effects on people. <i>Case study – Typhoon Haiyan</i> <i>Case study – Nepal Earthquake 2015</i> Extreme weather in the UK and the risks of Climate Change and its impacts.</p> <p>Students will know:</p> <ul style="list-style-type: none"> • How natural hazards are created. • How we can manage the risks of living with natural hazards. • How different countries prepare for and respond to natural hazards.
Geography	<p>Urban Challenges How urban planning is improving the quality of life for the urban poor? Urban change in UK cities. A case study of a major city in a LIC or NEE - Lagos, Nigeria case study of a major city in the UK – London.</p> <p>Learners will know:</p> <ul style="list-style-type: none"> • Location and importance of each city. • The causes of growth in each city. • How urban growth has created opportunities and challenges (social and economic)?
Philosophy and Ethics	<p>Paper 1 Section 3: Living a Christian Life</p> <ul style="list-style-type: none"> • Pilgrimage – What is the purpose of pilgrimages in Christianity? • The future of the church at a local, national and international level.

Modern Foreign Languages

French	<p>10.5 Free Time and Leisure</p> <ul style="list-style-type: none"> • Discussion of free time activities including sports, music and TV, using the present tense conjugation of regular and irregular verbs. • Use of the perfect and imperfect past tense to discuss what you did when you were younger and last weekend. • Use of adverbs of frequency to explain how often we complete certain activities. <p>10.6 Future Plans after School</p> <ul style="list-style-type: none"> • Use of the near and simple future to discuss future study and job plans, with a focus on irregular verbs. • Expressing future opinions with the use of negative structures. • retrieval of the conditional tense to discuss future desires.
Spanish	<p>10.5 Free Time and Leisure</p> <ul style="list-style-type: none"> • Discussion of free time activities including sports, music and TV, using the present tense conjugation of regular and irregular verbs. • Use of the perfect and imperfect past tense to discuss what you did when you were younger and last weekend. • Use of adverbs of frequency to explain how often we complete certain activities. <p>10.6 Future Plans after School</p> <ul style="list-style-type: none"> • Use of the near and simple future to discuss future study and job plans, with a focus on irregular verbs. • Expressing future opinions with the use of negative structures. • retrieval of the conditional tense to discuss future desires.

<p>3D Product Design</p>	<p>Experimentation with materials and techniques</p> <ul style="list-style-type: none"> Learners build on their accurate and controlled skills by exploring more expressive and experimental types of mark making. Learners start to explore techniques that provide opportunities to extend the personal, emotional and meaningful impact of their ideas linking to their chosen theme.
<p>Engineering</p>	<p>R040 - Product analysis and research</p> <p>This unit will enable students to perform effective product analysis. They will research existing solutions and assess the development of engineered products.</p> <p>Topics/skills covered in the R040 unit include:</p> <ul style="list-style-type: none"> Development of dexterous skills. Practical experience of product assembly and disassembly to appreciate manufacturing processes, design features and materials used. Development of creativity and critical analysis through an understanding of the principles behind good design. What makes a good product sell by analysing existing solutions. Commercial production methods, including one-off, batch, mass, and continuous production The importance of conformity to legislation. Quality and safety standards. <p>The protection of intellectual property.</p>
<p>Textiles</p>	<p>Experimentation</p> <p>Experimentation in the following specialisms:</p> <ul style="list-style-type: none"> Mark Making Fabric Construction Dyeing and Printing Embellishment Fabric Manipulation Pattern Making Presentation <p>Students build on their accurate and controlled skills by exploring more expressive and experimental ways of working with textile media. They will develop new practical skills by emulating the style of their chosen artist/designer</p> <p>Students start to explore techniques that provide opportunities to extend the personal, emotional, and meaningful impact of their ideas linking to their chosen theme where appropriate. An example of this could be basing developmental samples on their own photographs and drawings. Throughout Y10 students will learn about new textile artists and designers and develop their knowledge of the meaning behind many works of textile art and design.</p>
<p>Food Technology</p>	<p>Food Science</p> <p>This unit will enable learners to develop an understanding of the different scientific processes that are involved in food production and preparation.</p> <p>Topics and Skills Covered:</p> <p>Why food is cooked and the different methods of heat transfer.</p> <ul style="list-style-type: none"> Learners will learn a range of preparation and cooking methods, alongside the importance of time, to achieve the desired characteristics in practicals. Learners will study the functional and chemical properties of food, including denaturation, coagulation, gluten formation, foam formation, gelatinisation, dextrinization, caramelisation. Learners will understand the use and importance of chemical and mechanical raising agents.
<p>Art</p>	<p>Experimentation with materials and techniques</p> <ul style="list-style-type: none"> Learners build on their accurate and controlled skills by exploring more expressive and experimental types of mark making. Learners start to explore techniques that provide opportunities to extend the personal, emotional and meaningful impact of their ideas linking to their chosen theme.

Physical Education

1.2a Components of fitness
Components of fitness testing booklets (scores for coursework)

1.2b Principles of Training
Principles of training (FITT & SPOR) and optimising Training (training methods, warmups & cool downs)

1.1e Effects of exercise on the body
Short / Long term effects of exercise on the body

Health and Social Care

Health conditions
Learners will look at common lifelong factors that affect our health and care needs

Arthritis Cardiovascular conditions Coronary heart disease Cerebral vascular accident	Diabetes (type 2) Dementia Obesity	Asthma Chronic obstructive pulmonary disease COPD	Sensory impairments Physical impairments Learning disability.
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Learners will look at common lifelong health Diseases Health services available:

Primary Care	Secondary Care	Tertiary Care	Multidisciplinary team working
GP surgeries Dental care Out-of-hours services Telephone services Accident and emergency departments	Specialist medical care that includes: Rheumatology Respiratory medicine Cardiology Endocrinology	Specialist medical care that includes: Oncology Transplant services Physiotherapy Speech and language therapy Occupational therapy Dietetics	How services work together, including referrals between services?

Business

Human resources

- What are the different methods of recruitment that businesses use?
- What are the various stages of recruitment?
- What the different types of employment contracts that employers can issue to employees?

Staff development

- What are the various ways of developing staff and monitoring their work activities?

Information Technology

How can we create a user interface to meet a given audience's needs?

Learning Aim B: Creating a project plan, defining the project requirements, project risk and constraints, project timescales, storyboard and sketches, hardware, software and testing strategies.

Learning Aim C: Develop a functional user interface, reviewing and refining a user interface