



Year 10 HT1

This term, the following aspects of the curriculum will be covered in your child's class:

Art & Design/Textiles

Students will be introduced three specialist pathways. They will discover how the design or making cycle works in art and design practice and learn about the specialist materials, techniques and processes of these specialist pathways. They will learn how professionals research widely from different sources to gain inspiration and how this helps them to generate ideas. Whichever vocational pathway students work in; they will continuously review their work to ensure that it meets their creative intentions. They will explore, experiment with and learn how to use specialist materials and techniques relevant to their brief. Students will develop their chosen specialist skills either in fine art, photography or textile. They will also learn about, and record, the health and safety issues associated with the traditional and contemporary media, techniques and processes that you use.

Business

We offer 2 different pathways in year 10 business studies.

GCSE Business Studies

The theme 1 topics students will study this term are:

- The dynamic nature of business
- Risk and reward
- The role of business enterprise
- Customer needs
- Market research
- Market segmentation

OCR Enterprise and Marketing

Students will begin to produce their first piece of controlled assessment which is worth 25% of their total grade.

- Select appropriate primary and secondary market research methods and data types in order to complete meaningful research
- Sampling methods
- Use appropriate market research tools for a business proposal
- Review the results of market research

Computing

Computer Systems – Von Neuman Architecture

In this AP we will be looking at the different types of computer systems which are used by individuals, organisations and business. We also look at the different types of memory in a computer system and compare the difference between memory and storage devices. There is also a review and comparison of the different types of storage devices.

Students understand the importance of Von Neuman Architecture within a computer system and the components which make up the CPU.

English

Language

Students will be able to:

Select relevant evidence from both texts. Offer clear interpretation of relevant implicit information.

Make relevant developed comments on how writers use language/structure to achieve effects.

Make clear and accurate use of subject terminology to support views.

Evaluate clearly the effect(s) on the reader.

Show developed understanding of writer's methods.

Select a range of relevant textual references.

Make a clear and developed response to the focus of the statement.

Literature

Power and Conflict Poetry

Students will be able to:

Form a clear response to the tasks across Papers 1 & 2.

Use clear evidence from the texts to support a developed response.

Clearly explain the writer's methods, and support explanations supported with references.

Clearly explain the effects of the writer's methods on the reader.

Clearly explain the ideas/contextual features and make links with the texts.

Romeo and Juliet

Students will be able to:

Form a clear response to the task about Romeo & Juliet

Use clear evidence from Romeo & Juliet to support a developed response.

Clearly explain the writer's methods, and support explanations supported with references.

Clearly explain the effects of the writer's methods on the reader.

Clearly explain the ideas/contextual features and make links with Romeo & Juliet.

Food Nutrition

Unit 1: Principles of Food and Nutrition Written examination. Learners should be given the opportunity to develop their knowledge and understanding of the six areas of content. Learners should also be given the opportunity to develop technical skills through carrying out practical and experimental work. This opportunity will allow learners to develop sound technical skills whilst exploring and consolidating knowledge and understanding relating to food preparation and nutrition.

Areas of content:

1. Food commodities
2. Principles of nutrition
3. Diet and good health
4. The science of food
5. Where food comes from
6. Cooking and food preparation

French

Students will be able to understand extracts of spoken French and write on the topic of:

- Who am I; relationships; when I was younger; what my friends and family are like; what makes a good friend; interests; socialising with friends & family; role models.

Geography

Students begin GCSE by studying tectonic hazards, part of hazardous world, in HT1.

- The Earth's layered structure and physical properties is key to plate tectonics
- There are different plate boundaries, each with characteristics volcanic and earthquake hazards
- Tectonic hazards affect people, and are managed differently
- Students will investigate a two earthquake case studies and compare the effects and responses in a developed and emerging country.

History

Medicine and Health in Britain, c1250–present and The Historic Environment Study: The British Sector of The Western Front c1914–c1918.

Introduction and overview to Medicine and Health in Britain, c1250–present.

Students will understand:

- How and why have ideas about the cause of disease changed over time
- How have preventions and treatments changed over time
- An overview of key features in the development of crime and punishment and how these were linked with the key features of society in Britain in the periods studied.

c1250–c1500: Medicine and Health in medieval England.

Brief overview of the period: Medieval England. Nature and changing ideas about the cause of disease, prevention and treatment.

Students will understand:

- Supernatural ideas and the power of The Church. Hippocrates, Galen and The Theory of The Four Humours.
- Hospitals and caring for the sick.

Case studies

Students will understand:

- The impact of The Black Death in 1348.

c1500–c1700: Medicine and health in early modern/Renaissance England.

Brief overview of the period: medieval England. Nature and changing ideas about the cause of disease, prevention and treatment.

Students will understand:

- Vesalius, Harvey, Pare, Sydenham and the scientific approach

Case studies

Students will understand:

- The impact of The Great Plague

ICT

BTEC Tech Award in Digital Information Technology is a practical introduction to life and work in the industry.

Students will be:

- developing technical skills and techniques
- planning a digital solution for a given brief
- developing an understanding of what cyber security is and the importance of legal and ethical considerations when using modern technologies

Students will be completing 2 components in Y10. They will be:

Component 1 - Exploring User Interface Design Principles and Project Planning Techniques

Aim: How to project plan the design and development of a user interface.

Assessment: internally assessed assignments

During Component 1 students will:

- explore user interface design and development principles
- discover how to develop and review a digital user interface
- investigate how to use project planning techniques to manage a digital project

Component 2 - Collecting, Presenting and Interpreting Data

Aim: process and interpret data and draw conclusions

Assessment: internally assessed assignments

During Component 2 students will:

- explore how data impacts on individuals and organisations
- develop a dashboard using data manipulation tools
- draw conclusions and make recommendations on data intelligence

Maths

- Y10HT1 Students will study
- Plot and read Coordinates in all four quadrants
- Draw, label and scale axes
- Plot straight line graphs
- Recognise, sketch and interpret straight line graphs
- Find approximate solutions using a graph
- Find the coordinates of the midpoint of a line segment
- Real life graphs: ready reckoner graphs, conversion graphs, fuel bills graphs,
- fixed charge and cost per unit
- Identify and interpret gradients and intercepts of straight line graphs
- Identify and interpret gradient from an equation $y = mx + c$
- Interpret distance–time graphs, and calculate: the speed of individual sections,
- total distance and total time
- Change between standard units e.g. time, mass, length, money, volume, area
- Change between compound units e.g. speed, rates of pay, prices
- Work out time intervals for graph scales
- Recognise, sketch and interpret graphs of ... quadratic functions

Music

Unit 1: The Music Industry (External Exam)

In this unit students will gain a good understanding of the scope of the music industry with a view to getting work in and using the organisations that exist. They will investigate music organisations to find out about the work they do and how they relate to and rely on one another. They will also be given the opportunity to find out about the people who work in these organisations, from performers to people who work in technical, production and administrative roles

Unit 5 Introducing Music Performance (Internal Coursework)

In this unit students will develop their musical performance techniques in relation to their instrument or voice. This will be evidenced through recordings of milestone session, Students will also track their own progress, and identify strengths and areas for development through a unit log. Students will apply the skills they have explored and developed to a performance of a specific piece or pieces of music. They will present a solo or work together to produce an ensemble performance.

Performing Arts

Students will complete Component 1 (Performance work 1)

- Describe the stylistic qualities of practitioners' work, with reference to relevant examples across three performance styles.
- Describe the roles, responsibilities and skills of practitioners, using relevant examples across three performance styles.
- Discuss the stylistic qualities of practitioners' work using appropriate examples to justify how roles, responsibilities and skills contribute to creative intentions and purpose across three performance styles.
- Assess the stylistic qualities of practitioners' work using considered examples to show how roles, responsibilities and skills contribute to creative intentions and purpose across three performance styles.
- Describe the processes, skills and approaches used by practitioners to create performance work, with relevant reference to examples of repertoire.
- Describe the interrelationships between components used in performance, with reference to relevant examples of repertoire.
- Discuss the interrelationships between processes, skills and approaches used by practitioners, with appropriate reference to examples of repertoire used to demonstrate how they contribute to performance work.
- Explain the interrelationships between processes, skills and approaches used by practitioners, with considered reference to examples of repertoire used to demonstrate how they contribute effectively to performance work.

Physical Education

Students will study Unit 1 – Fitness for Sport and Exercise

Learning Aim A: Know about the components of fitness and the principles of training

Learning Aim B: Explore different fitness training methods

Learning Aim C: Investigate fitness testing to determine fitness levels.

Religious Education

In Y10 and Y11 RE is taught within the Opening Minds program.

Science

Organisation

Students will be able to:

-Describe the nature of enzyme molecules and relate their activity to temperature and pH changes.

-Carry out rate calculations for chemical reactions.

-Use the 'lock and key theory' as a simplified model to explain enzyme action.

-Recall the sites of production and the action of amylase, proteases and lipases.

-Understand simple word equations for enzymatic reactions but no chemical symbol equations are required.

- Describe the structure and functioning of the human heart.
- Describe what an artificial pacemaker is and explain how they work.
- Explain how the structure of blood vessels relates to their functions.
- Describe the structure and functioning of the human lungs, including how they are adapted for gaseous exchange.
- Use simple compound measures such as rate and carry out rate calculations for blood flow.
- Describe the functions of plasma, red blood cells, white blood cells and platelets.
- Recognise different types of blood cells in a photograph or diagram. -Explain how different types of blood cells are adapted to their functions.
- Evaluate the advantages and disadvantages of treating cardiovascular diseases by drugs, mechanical devices or transplant.
- Explain how the structures of plant tissues are related to their functions.

Bonding, structure, and the properties of matter

Students will be able to:

- Explain chemical bonding in terms of electrostatic forces and the transfer or sharing of electrons.
- Draw dot and cross diagrams for ionic compounds formed by metals in Groups 1 and 2 with non-metals in Groups 6 and 7.
- Work out the charge on the ions of metals and non-metals from the group number of the element, limited to the metals in Groups 1 and 2, and non-metals in Groups 6 and 7.
- Describe the structure of sodium chloride.
- Deduce that a compound is ionic from a diagram of its structure.
- Work out the empirical formula of an ionic compound from a given model or diagram that shows the ions in the structure.
- Recognise common substances that consist of small molecules from their chemical formula.
- Draw dot and cross diagrams for the molecules of hydrogen, chlorine, oxygen, nitrogen, hydrogen chloride, water, ammonia and methane.
- Predict the states of substances at different temperatures given appropriate data.
- Explain the different temperatures at which changes of state occur in terms of energy transfers and types of bonding
- Recognise that atoms themselves do not have the bulk properties of materials.
- Describe the limitations of using dot and cross, ball and stick, two and three-dimensional diagrams to represent a giant ionic structure.
- Recognise substances as small molecules, polymers from diagrams showing their bonding.
- Represent the covalent bonds in small molecules, in the repeating units of polymers and in parts of giant covalent structures, using a line to represent a single bond.
- Describe the limitations of using dot and cross, ball and stick, two and three-dimensional diagrams to represent molecules or giant structures.
- Deduce the molecular formula of a substance from a given model or diagram showing the atoms and bonds in the molecule.
- Recognise substances as metallic giant structures from diagrams showing their bonding.
- Describe the properties of ionic compounds including melting points, solubility and conductivity.
- Use the idea that intermolecular forces are weak compared with covalent bonds to explain the bulk properties of molecular substances.
- Recognise polymers from diagrams showing their bonding and structure.
- Recognise giant covalent structures from diagrams showing their bonding and structure.
- Explain the properties of diamond in terms of its structure and bonding.
- Explain the properties of graphite in terms of its structure and bonding.
- Know that graphite is similar to metals in that it has delocalised electrons.
- Explain why metals are good conductors of electrical charge and thermal energy.
- Explain why alloys are harder than pure metals in terms of distortion of the layers of atoms in the structure of a pure metal.
- Recognise graphene and fullerenes from diagrams and descriptions of their bonding and structure.
- Give examples of the uses of fullerenes, including carbon nanotubes.

- Include appropriate state symbols in chemical equations for reactions.
- (HT only) Explain the limitations of the particle theory in relation to changes of state when particles are represented by solid inelastic spheres which have no forces between them.

Energy

Students will be able to:

- Describe all the changes involved in the way energy is stored when a system changes.
- Calculate the amount of energy associated with a moving object, a stretched spring and an object raised above ground level.
- Recall and apply the equation for kinetic energy.
- Apply the equation for elastic potential energy.
- Recall and apply the equation for gravitational potential energy.
- Define specific heat capacity.
- Recall and apply the equation for change in thermal energy.
- Required Practical 14
- Recall and apply the equations $\text{power} = \text{energy transferred}/\text{time}$ and $\text{power} = \text{work done}/\text{time}$
- Give examples that illustrate the definition of power.
- Describe with examples where there are energy transfers in a closed system, that there is no net change to the total energy.
- Describe, with examples, how in all system changes energy is dissipated, so that it is stored in less useful ways.
- Explain ways of reducing unwanted energy transfers, for example through lubrication and the use of thermal insulation.
- Describe how the rate of cooling of a building is affected by the thickness and thermal conductivity of its walls.
- Recall and apply both equations for efficiency.
- Describe ways to increase the efficiency of an intended energy transfer.
- Describe the main energy sources available
- Distinguish between energy resources that are renewable and energy resources that are non-renewable.
- Compare ways that different energy resources are used, the uses to include transport, electricity generation and heating.
- Understand why some energy resources are more reliable than others.
- Describe the environmental impact arising from the use of different energy resources.
- Explain patterns and trends in the use of energy resources.
- Consider the environmental issues that may arise from the use of different energy resources.

Art & Design/Textiles

Students will be introduced three specialist pathways. They will discover how the design or making cycle works in art and design practice and learn about the specialist materials, techniques and processes of these specialist pathways. They will learn how professionals research widely from different sources to gain inspiration and how this helps them to generate ideas. Whichever vocational pathway students work in; they will continuously review their work to ensure that it meets their creative intentions. They will explore, experiment with and learn how to use specialist materials and techniques relevant to their brief. Students will develop their chosen specialist skills either in fine art, photography or textile. They will also learn about, and record, the health and safety issues associated with the traditional and contemporary media, techniques and processes that you use. Creative intentions. They will explore, experiment with and learn how to use specialist materials and techniques relevant to their brief. Students will develop their chosen specialist skills either in fine art, photography or textile. They will also learn about, and record, the health and safety issues associated with the traditional and contemporary media, techniques and processes that you use.

Business**GCSE**

- The competitive environment
- Aims and objectives
- Costs and revenue
- Breakeven
- Cashflow

OCR Enterprise and marketing

Carrying on with producing the 1st piece of controlled assessment students will study:

- How to apply market segmentation to build a customer profile
- Create a design mix for a new product
- Produce designs for their product proposal

Computing**Data representation**

You should understand:

- bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte, petabyte
- how data needs to be converted into a binary format to be processed by a computer

Numbers

You should understand:

- how to convert positive denary whole numbers (0–255) into 8 bit binary numbers and vice versa
- how to add two 8 bit binary integers and explain overflow errors which may occur
- binary shifts
- how to convert positive denary whole numbers (0–255) into 2 digit hexadecimal numbers and vice versa
- how to convert from binary to hexadecimal equivalents and vice versa
- check digits

Characters

You should understand:

- the use of binary codes to represent characters
- the term 'character-set'
- the relationship between the number of bits per character in a character set and the number of characters which can be represented (for example ASCII, extended ASCII and Unicode)

Images

You should understand:

- how an image is represented as a series of pixels represented in binary
- metadata included in the file
- the effect of colour depth and resolution on the size of an image file

Sound

You should understand:

- how sound can be sampled and stored in digital form
- how sampling intervals and other factors affect the size of a sound file and the quality of its playback

Compression

You should understand:

- need for compression

English

Language

Students will be able to:

Select relevant evidence from both texts. Offer clear interpretation of relevant implicit information.

Make relevant developed comments on how writers use language/structure to achieve effects.

Make clear and accurate use of subject terminology to support views.

Evaluate clearly the effect(s) on the reader.

Show developed understanding of writer's methods.

Select a range of relevant textual references.

Make a clear and developed response to the focus of the statement.

Consistently match the tone of their writing to the audience.

Use increasingly sophisticated vocabulary for effect as well as a range of successful methods.

Make effective use of a range of clear and connected paragraphs with integrated connectives.

Use punctuation to create a range of sentences that are mostly accurate.

Spell and use grammar correctly, including complex and irregular words.

Literature

A Christmas Carol

Students will be able to:

Form a clear response to the task Literature Paper 1

Use clear evidence from texts on Literature Paper 1 to support a developed response.

Clearly explain the writer's methods, and support explanations supported with references.

Clearly explain the effects of the writer's methods on the reader.

Clearly explain the ideas/contextual features and make links with the texts on Literature Paper 1.

AND

Unseen Poetry

Students will be able to:

Form a clear response to the tasks across Papers 1 & 2.

Use clear evidence from the texts to support a developed response.

Clearly explain the writer's methods, and support explanations supported with references.

Clearly explain the effects of the writer's methods on the reader.

Clearly explain the ideas/contextual features and make links with the texts.

Food Nutrition

Unit 1: Principles of Food and Nutrition Written examination. Learners should be given the opportunity to develop their knowledge and understanding of the six areas of content. Learners should also be given the opportunity to develop technical skills through carrying out practical and experimental work. This opportunity will allow learners to develop sound technical skills whilst exploring and consolidating knowledge and understanding relating to food preparation and nutrition.

Areas of content:

1. Food commodities
2. Principles of nutrition
3. Diet and good health
4. The science of food
5. Where food comes from
6. Cooking and food preparation

French

Students will be able to understand extracts of written French and take part in a conversation on the topic of:

- What school is like: school types; school day; subjects; rules and pressures; celebrating success.
- School activities: school trips; events & exchanges.

Geography

Students continue to study the hazardous earth topic

Climate change:

- The atmosphere operates as a system which transfers heat around the Earth
- Climate has changed in the past through natural causes
- Global climate is now changing as a result of human activity

Tropical storms:

- Tropical cyclones are caused by particular meteorological conditions
- Tropical cyclones present major natural hazards to people and places
- The impacts of tropical cyclones are linked to a country's ability to prepare and respond to them.

History

Medicine and Health in Britain, c12500–present and The Historic Environment Study: The British Sector of The Western Front c1914–c1918.

Medicine and Health in Britain, c1700-present

Students will understand:

- How and why have ideas about the cause of disease changed over time
- How have preventions and treatments changed over time
- An overview of key features in the development of crime and punishment and how these were linked with the key features of society in Britain in the periods studied.

c1700–c1900: Medicine and Health in Industrial England

Brief overview of the period: Industrial England: Nature and changing ideas about the cause of disease, prevention and treatment.

Students will understand:

- Louis Pasteur, Robert Koch, John Snow, Edward Jenner and their significance in regards to ideas about the cause of disease, prevention and treatment.
- Hospitals and caring for the sick.

Case studies

Students will understand:

- The impact of John Snow and the cholera epidemic

c1900–present: Medicine and health in Modern England.

Brief overview of the period: Modern England. Nature and changing ideas about the cause of disease, prevention and treatment.

Students will understand:

- Watson, Crick, Bevan and their significance in regard to ideas about the cause of disease, prevention and treatment.
- Hospitals and caring for the sick.

Case studies

Students will understand:

- The impact of lung cancer

ICT

Component 1 - Exploring User Interface Design Principles and Project Planning Techniques

Aim: How to project plan the design and development of a user interface.

Assessment: internally assessed assignments

During Component 1 students will:

- explore user interface design and development principles
- discover how to develop and review a digital user interface
- investigate how to use project planning techniques to manage a digital project

Maths

- Solve two simultaneous equations in two variables (linear/linear) algebraically
- Find approximate solutions using a graph
- Derive two simultaneous equations, solve the equation and interpret the solution
- Recognise and sketch cubic graphs and the reciprocal graph
- Plot and interpret ... reciprocal graphs
- Recognise and interpret graphs that illustrate direct and inverse proportion

Music

Unit 1: The Music Industry (External Exam)

In this unit students will gain a good understanding of the scope of the music industry with a view to getting work in and using the organisations that exist. They will investigate music organisations to find out about the work they do

and how they relate to and rely on one another. They will also be given the opportunity to find out about the people who work in these organisations, from performers to people who work in technical, production and administrative roles

Unit 5 Introducing Music Performance (Internal Coursework)

In this unit students will develop their musical performance techniques in relation to their instrument or voice. This will be evidenced through recordings of milestone session, Students will also track their own progress, and identify strengths and areas for development through a unit log. Students will apply the skills they have explored and developed to a performance of a specific piece or pieces of music. They will present a solo or work together to produce an ensemble performance.

Performing Arts

Students will complete Component 1 (Performance work 2)

- Describe the stylistic qualities of practitioners' work, with reference to relevant examples across three performance styles.
- Describe the roles, responsibilities and skills of practitioners, using relevant examples across three performance styles.
- Discuss the stylistic qualities of practitioners' work using appropriate examples to justify how roles, responsibilities and skills contribute to creative intentions and purpose across three performance styles.
- Assess the stylistic qualities of practitioners' work using considered examples to show how roles, responsibilities and skills contribute to creative intentions and purpose across three performance styles.
- Describe the processes, skills and approaches used by practitioners to create performance work, with relevant reference to examples of repertoire.
- Describe the interrelationships between components used in performance, with reference to relevant examples of repertoire.
- Discuss the interrelationships between processes, skills and approaches used by practitioners, with appropriate reference to examples of repertoire used to demonstrate how they contribute to performance work.

Explain the interrelationships between processes, skills and approaches used by practitioners, with considered reference to examples of repertoire used to demonstrate how they contribute effectively to performance work.

Physical Education

Students will study Unit 1 – Fitness for Sport and Exercise

Learning Aim A: Know about the components of fitness and the principles of training

Learning Aim B: Explore different fitness training methods

Learning Aim C: Investigate fitness testing to determine fitness levels.

Religious Education

In Y10 and Y11 RE is taught within the Opening Minds program.

Science

Quantitative Chemistry

Students will be able to:

-Use of multipliers in equations in normal script before a formula and in subscript within a formula.

-Define relative formula mass.

-Explain any observed changes in mass in non-enclosed systems during a chemical reaction given the balanced symbol equation for the reaction and explain these changes in terms of the particle model.

-Represent distributions of results, make estimations of uncertainty and use the range of a set of measurements about the mean as a measure of uncertainty.

-(HT only) - Define the term mole.

-(HT only) Understand that the measurement of amounts in moles can apply to atoms, molecules, ions, electrons, formulae and equations.

- (HT only) Use the relative formula mass of a substance to calculate the number of moles in a given mass of that substance and vice versa.
- (HT only) Calculate the masses of substances shown in a balanced symbol equation.
- (HT only) Calculate the masses of reactants and products from the balanced symbol equation and the mass of a given reactant or product.
- (HT only) Balance an equation given the masses of reactants and products
- Change the subject of a mathematical equation.
- (HT only) Explain the effect of a limiting quantity of a reactant on the amount of products it is possible to obtain in terms of amounts in moles or masses in grams.
- Calculate the mass of solute in a given volume of solution of known concentration in terms of mass per given volume of solution.
- (HT only) Explain how the mass of a solute and the volume of a solution is related to the concentration of the solution.

Infection and Response

Students will be able to

- Describe the relationship between health and disease and the interactions.
- Describe the symptoms of fungal diseases (Rose black spot) and protist diseases (Malaria).
- Explain how fungal (Rose black spot) and protist diseases (Malaria) are spread in animals and plants.
- Describe how fungal diseases (Rose black spot) and protist diseases (Malaria) are treated.
- Describe the non-specific defence systems of the human body against pathogens.
- Explain the role of the immune system in the defence against disease.
- Explain how vaccination will prevent illness in an individual, and how the spread of pathogens can be reduced by immunising a large proportion of the population.
- Evaluate the global use of vaccination in the prevention of disease.
- Explain the use of antibiotics and other medicines in treating disease.
- Describe the process of discovery and development of potential new medicines, including preclinical and clinical testing.

This term, the following aspects of the curriculum will be covered in your child's class:

Art & Design/Textiles

Students will focus their project through planning and organising, taking their ideas from concept to outcome. They will develop creative ideas, skills and intentions in response to a project brief and produce final outcomes that meet the requirements of the brief.

Business

GCSE Business Studies

- Sources of finance
- Options available to a start-up business
- Business location
- Marketing mix
-

OCR Enterprise and Marketing

- Review their designs and produce a final product proposal
- Review whether the business proposal is financially viable by looking at predicted costs, revenues, profit and breakeven
- Apply an appropriate pricing strategy to their product
- Review the risks and challenges faced by the business proposal

Computing

Students should understand:

- the use of variables, constants, operators, inputs, outputs and assignments
- the use of the three basic programming constructs used to control the flow of a program
- the use of basic string manipulation
- the use of basic file handling operations:
- the use of records to store data
- the use of SQL to search for data
- the use of arrays (or equivalent) when solving problems, including both one and two dimensional arrays
- how to use sub programs (functions and procedures) to produce structured code
- the use of data types:
- the common arithmetic operators
- the common Boolean operators

Algorithms

Students should understand:

- computational thinking:
 - abstraction
 - decomposition
 - algorithmic thinking
- standard searching algorithms:
 - binary search
 - linear search
- standard sorting algorithms:
 - bubble sort
 - merge sort
 - insertion sort
- how to produce algorithms using:
 - pseudocode
 - using flow diagrams
- interpret, correct or complete algorithms

Translators and facilities of languages

Students should understand:

- characteristics and purpose of different levels of programming language, including low level languages
- the purpose of translators
- the characteristics of an assembler, a compiler and an interpreter
- common tools and facilities available in an integrated development environment (IDE):
 - editors
 - error diagnostics
 - run-time environment
 - translators

English

Language

Students will be able to:

Select relevant evidence from both texts. Offer clear interpretation of relevant implicit information.

Make relevant developed comments on how writers use language/structure to achieve effects.

Make clear and accurate use of subject terminology to support your views.

Compare ideas and perspectives in a clear, relevant and developed way.

Explain clearly how writers' methods are used.

Make relevant references to both texts.

Literature

A Christmas Carol

Students will be able to:

Form a clear response to the task Literature Paper 1

Use clear evidence from texts on Literature Paper 1 to support a developed response.

Clearly explain the writer's methods, and support explanations supported with references.

Clearly explain the effects of the writer's methods on the reader.

Clearly explain the ideas/contextual features and make links with the texts on Literature Paper 1.

Food Nutrition

Unit 1: Principles of Food and Nutrition Written examination. Learners should be given the opportunity to develop their knowledge and understanding of the six areas of content. Learners should also be given the opportunity to develop technical skills through carrying out practical and experimental work. This opportunity will allow learners to develop sound technical skills whilst exploring and consolidating knowledge and understanding relating to food preparation and nutrition.

Areas of content:

1. Food commodities
2. Principles of nutrition
3. Diet and good health

- 4. The science of food
- 5. Where food comes from
- 6. Cooking and food preparation

French

Students will be able to understand extracts of spoken French and write on the topic of:

- Holidays: preferences; experiences; destinations.
- Travel and tourist transactions: travel & accommodation; asking for help & dealing with problems; directions; eating out; shopping.
- Town, region and country: weather; places to see; things to do.

Geography

Students now move to studying development dynamics

- There are different ways of defining and measuring development
- Theories of how inequalities are reduced and the approaches to development vary
- Students will investigate the development of a named case study

History

The Historic Environment Study: The British Sector of The Western Front c1914–c1918.

Students will understand:

- Illnesses and wounds in the trenches.
- New developments

The Historic Environment Study: The British Sector of The Western Front c1914–c1918.

Brief overview of the context of the theatre of war.

ICT

Component 1 - Exploring User Interface Design Principles and Project Planning Techniques

Aim: How to project plan the design and development of a user interface.

Assessment: internally assessed assignments

During Component 1 students will:

- explore user interface design and development principles
- discover how to develop and review a digital user interface
- investigate how to use project planning techniques to manage a digital project

Maths

- Y10HT3 Students will study
- Apply systematic listing strategies
- Describe probability using the probability scale, tables and frequency trees
- Apply ideas of randomness, fairness and equally likely events to calculate expected outcomes of multiple future experiments
- Calculate expected outcomes
- Mutually exclusive events sum to one
- Experimental and theoretical probability
- Venn diagrams and appropriate notation
- Possibility spaces/sample spaces
- Find a missing probability from a list or table including algebraic terms
- Convert large and small numbers into standard form and vice versa
- Add and subtract numbers in standard form
- Multiply and divide numbers in standard form
- Use of a calculator in standard form calculations

Music

Unit 1: The Music Industry (External Exam)

In this unit students will gain a good understanding of the scope of the music industry with a view to getting work in and using the organisations that exist. They will investigate music organisations to find out about the work they do and how they relate to and rely on one another. They will also be given the opportunity to find out about the people who work in these organisations, from performers to people who work in technical, production and administrative roles

Unit 5 Introducing Music Performance (Internal Coursework)

In this unit students will develop their musical performance techniques in relation to their instrument or voice. This will be evidenced through recordings of milestone session, Students will also track their own progress, and identify strengths and areas for development through a unit log. Students will apply the skills they have explored and developed to a performance of a specific piece or pieces of music. They will present a solo or work together to produce an ensemble performance.

Performing Arts

Students will complete Component 3 (Formal Examination)

- Understand how to respond to a brief
- Select and develop skills and techniques in response to a brief
- Apply skills and techniques in a workshop performance in response to a brief

Evaluate the development process and outcome in response to a brief

Physical Education

Students will complete Unit 2 – Practical Performance in Sport

Learning Aim A: Understand the rules, regulations and scoring systems for selected sports.

Learning Aim B- Practically demonstrate skills, techniques and tactics in selected sports.

Learning Aim C- Be able to review sports performance.

Religious Education

In Y10 and Y11 RE is taught within the Opening Minds program.

Science

Electricity

Students will be able to:

- Draw and interpret circuit diagrams.
- Recall and apply the equation for charge flow and current.
- Recall and apply the equation for potential difference.
- Required Practical 15
- Explain that, for some resistors, the value of R remains constant but that in others it can change as the current changes.
- Explain the design and use of a circuit to measure the resistance of a component by measuring the current through, and potential difference across, the component.
- Draw an appropriate circuit diagram using correct circuit symbols.
- Use graphs to explore whether circuit elements are linear or non-linear and relate the curves produced to their function and properties.
- Required Practical 16
- Use circuit diagrams to construct and check series and parallel circuits that include a variety of common circuit components.
- Describe the difference between series and parallel circuits.
- Explain qualitatively why adding resistors in series increases the total resistance whilst adding resistors in parallel decreases the total resistance.
- Explain the design and use of dc series circuits for measurement and testing purposes.
- Calculate the currents, potential differences and resistances in dc series circuits.

- Solve problems for circuits which include resistors in series using the concept of equivalent resistance.
- Explain the difference between direct and alternating potential difference.
- Explain that a live wire may be dangerous even when a switch in the mains circuit is open.
- Explain the dangers of providing any connection between the live wire and Earth.
- Recall and apply the equation $\text{power} = \text{potential difference} \times \text{current}$ and $\text{power} = (\text{current})^2 \times \text{resistance}$
- Describe how different domestic appliances transfer energy from batteries or ac mains to the kinetic energy of electric motors or the energy of heating devices.
- Recall and apply the equations for energy transferred.
- Explain how the power of a circuit device is related to:
 - the potential difference across it and the current through it.
 - the energy transferred over a given time.
- Describe, with examples, the relationship between the power ratings for domestic electrical appliances and the changes in stored energy when they are in use.
- Explain why the National Grid system is an efficient way to transfer energy.

This term, the following aspects of the curriculum will be covered in your child's class:

Art & Design/Textiles

Students will focus their project through planning and organising, taking their ideas from concept to outcome. They will develop creative ideas, skills and intentions in response to a project brief and produce final outcomes that meet the requirements of the brief.

Business

GCSE Business studies

- Marketing mix (continued from last term)
- The business plan
- Stakeholders
- Technology and business
- Legislation and business

OCR Enterprise and Marketing

This term students will begin the second piece of controlled assessment. This looks at how they will promote and brand their business idea.

- Develop a brand identity for their product to target a specific customer profile including the branding methods they would use.
- Produce a competitor analysis
- Identify opportunities and threats in the external environment.

Computing

You should understand:

- types of networks:
 - LAN (Local Area Network)
 - WAN (Wide Area Network)
- factors that affect the performance of networks
- the different roles of computers in a client-server and a peer-to-peer network
- the hardware needed to connect stand-alone computers into a Local Area network:
- routers/switches

English

Language

Students will be able to:

Select relevant evidence from both texts. Offer clear interpretation of relevant implicit information.

Make relevant developed comments on how writers use language/structure to achieve effects.

Make clear and accurate use of subject terminology to support your views.

Compare ideas and perspectives in a clear, relevant and developed way.

Explain clearly how writers' methods are used.

Make relevant references to both texts.

Evaluate clearly the effect(s) on the reader.

Show developed understanding of writer's methods.

Select a range of relevant textual references.

Make a clear and developed response to the focus of the statement.

Consistently match the tone of your writing to the audience.

Use increasingly sophisticated vocabulary for effect as well as a range of successful methods.

Make effective use of a range of clear and connected paragraphs with integrated connectives.

Use punctuation to create a range of sentences that are mostly accurate.

Spell and use grammar correctly, including complex and irregular words.

Literature

Macbeth

Students will be able to:

Form a clear response to the task about Macbeth

Use clear evidence from Macbeth to support a developed response.

Clearly explain the writer's methods, and support explanations supported with references.

Clearly explain the effects of the writer's methods on the reader.

Clearly explain the ideas/contextual features and make links with Macbeth.

Food Nutrition

Unit 1: Principles of Food and Nutrition Written examination. Learners should be given the opportunity to develop their knowledge and understanding of the six areas of content. Learners should also be given the opportunity to develop technical skills through carrying out practical and experimental work. This opportunity will allow learners to develop sound technical skills whilst exploring and consolidating knowledge and understanding relating to food preparation and nutrition.

Areas of content:

1. Food commodities
2. Principles of nutrition
3. Diet and good health
4. The science of food
5. Where food comes from
6. Cooking and food preparation

French

Students will be able to understand extracts of written French and take part in a role play and conversation on the topic of:

- Using languages beyond the classroom: **employment**.
- Ambitions: further study; volunteering; training.
- Work: jobs; careers & professions.

Geography

Students now study challenges of an urbanising world

- The world is becoming increasingly globalised
- Cities and their land use change over time

- Students study a named case study and investigate how urbanisation has influenced it.

History

Anglo-Saxon and Norman England c1060-c1088

Students will understand:

- The Anglo-Saxon social system, Edward the Confessor, The Anglo-Saxon Church, House Godwin, The uprising against Earl Tostig, The Battle of Gate Fulford, The Battle of Stamford Bridge, The Battle of Hastings.

ICT

Students will begin to look at the different components which are required to create a professional user interface.

Hardware and software breakdown. Students will be asked the questions, "What software do we use to complete specific tasks".

Using this information, they will begin to develop a user interface for a specific task and for a specific organisation.

Maths

- Simplify ratios
- Divide a quantity into a given ratio
- Write ratios as fractions
- Compare lengths, areas and volumes using ratio notation and scale factors

Music

Unit 1: The Music Industry (External Exam)

In this unit students will gain a good understanding of the scope of the music industry with a view to getting work in and using the organisations that exist. They will investigate music organisations to find out about the work they do and how they relate to and rely on one another. They will also be given the opportunity to find out about the people who work in these organisations, from performers to people who work in technical, production and administrative roles

Unit 5 Introducing Music Performance (Internal Coursework)

In this unit students will develop their musical performance techniques in relation to their instrument or voice. This will be evidenced through recordings of milestone session, Students will also track their own progress, and identify strengths and areas for development through a unit log. Students will apply the skills they have explored and developed to a performance of a specific piece or pieces of music. They will present a solo or work together to produce an ensemble performance.

Performing Arts

Students will complete Component 3 (Formal Examination)

- Understand how to respond to a brief
- Select and develop skills and techniques in response to a brief
- Apply skills and techniques in a workshop performance in response to a brief
- Evaluate the development process and outcome in response to a brief

Physical Education

Students will complete Unit 2 – Practical Performance in Sport

Learning Aim A: Understand the rules, regulations and scoring systems for selected sports.

Learning Aim B- Practically demonstrate skills, techniques and tactics in selected sports.

Learning Aim C- Be able to review sports performance

Religious Education

In Y10 and Y11 RE is taught within the Opening Minds program.

Science

Atomic structure

Students will be able to:

- Use the names and symbols of common nuclei and particles to write balanced equations that show single alpha (α) and beta (β) decay.
- Explain the concept of half-life and how it is related to the random nature of radioactive decay.
- Determine the half-life of a radioactive isotope from given information.
- (HT only) Calculate the net decline, expressed as a ratio, in a radioactive emission after a given number of half-lives.
- Compare the hazards associated with contamination and irradiation.
- Understand that it is important for the findings of studies into the effects of radiation on humans to be published and shared with other scientists so that the findings can be checked by peer review.

Chemical Changes

Students will be able to:

- Recall and describe the reactions, if any, of potassium, sodium, lithium, calcium, magnesium, zinc, iron and copper with water or dilute acids and where appropriate, to place these metals in order of reactivity.
- Explain how the reactivity of metals with water or dilute acids is related to the tendency of the metal to form its positive ion.
- Deduce an order of reactivity of metals based on experimental results.
- Interpret or evaluate specific metal extraction processes when given appropriate information.
- Identify the substances which are oxidised or reduced in terms of gain or loss of oxygen.
- (HT only) Write ionic equations for displacement reactions.
- (HT only) Identify in a given reaction, symbol equation or half equation which species are oxidised and which are reduced.
- State that acids react with some metals to produce salts and hydrogen.
- (HT only) Explain in terms of gain or loss of electrons, that metal-acid reactions are redox reactions.
- Predict products of neutralisation reactions from given reactants.
- Use the formulae of common ions to deduce the formulae of salts produced in neutralisation reactions.
- Describe how to make pure, dry samples of named soluble salts from information provided.
- 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.
- (HT only) Describe neutrality and relative acidity in terms of the effect on hydrogen ion concentration and the numerical value of pH (whole numbers only).
- Required Practical Activity 8
- (HT only) Use and explain the terms dilute and concentrated (in terms of amount of substance), and weak and strong (in terms of the degree of ionisation) in relation to acids.
- Predict the products of the electrolysis of binary ionic compounds in the molten state.
- Explain why a mixture is used as the electrolyte.
- Explain why the positive electrode must be continually replaced.
- Predict the products of the electrolysis of aqueous solutions containing a single ionic compound.
- (HT only) Write and balance half equations for the reactions occurring at the electrodes during electrolysis.
- Required Practical Activity 9

Bioenergetics

Students will be able to:

- Describe the process of transpiration and translocation, including the structure and function of the stomata.
- Explain how the structure of root hair cells, xylem and phloem are adapted to their functions.
- Explain the effect of changing temperature, humidity, air movement and light intensity on the rate of transpiration.
- Interpret graphical data on transpiration.
- Use simple compound measures such as the rate of transpiration.
- Measure and calculate rates of photosynthesis.

- Extract and interpret graphs of photosynthesis rate involving one limiting factor and plot and draw appropriate graphs selecting appropriate scale for axes.
- Translate information between graphical and numeric form.
- (HT only) Explain graphs of photosynthesis rate involving two or three factors and decide which is the limiting factor.
- Understand and use inverse proportion – the inverse square law and light intensity in the context of photosynthesis.
- (HT only) Use data to relate limiting factors to the cost effectiveness of adding heat, light or carbon dioxide to greenhouses.
- Compare the processes of aerobic and anaerobic respiration (including in yeast and plant cells) with regard to the need for oxygen, the differing products and the relative amounts of energy transferred.
- Recognise the chemical symbols: $C_6H_{12}O_6$, O_2 , CO_2 and H_2O .
- Describe the effect on exercise on the human body.
- (HT only) Explain the term oxygen debt.
- Explain the importance of sugars, amino acids, fatty acids and glycerol in the synthesis and breakdown of carbohydrates, proteins and lipids.

Year 10 HT5

This term, the following aspects of the curriculum will be covered in your child's class:

Art & Design/Textiles

Students will be introduced three specialist pathways. They will discover how the design or making cycle works in art and design practice and learn about the specialist materials, techniques and processes of these specialist pathways. They will learn how professionals research widely from different sources to gain inspiration and how this helps them to generate ideas. Whichever vocational pathway students work in; they will continuously review their work to ensure that it meets their creative intentions. They will explore, experiment with and learn how to use specialist materials and techniques relevant to their brief. Students will develop their chosen specialist skills either in fine art, photography or textile. They will also learn about, and record, the health and safety issues associated with the traditional and contemporary media, techniques and processes that you use.

Business

GCSE Business

- The economy and business
- External influences
- A research activity based on all the learning so far this year before starting theme 2 activities
- Business growth
-

OCR Enterprise and Marketing

- Creation of a promotional campaign for their brand and product
- Plan and practice a pitch to explain their business idea to an external panel

Computing

Network topologies, protocols and layers

You should understand:

- star and mesh network topologies
- wifi:
 - frequency and channels
 - control Protocol/Internet Protocol
- the concept of layers
- packet switching

English

Language

Students will be able to:

Select relevant evidence from both texts. Offer clear interpretation of relevant implicit information.

Make relevant developed comments on how writers use language/structure to achieve effects.

Make clear and accurate use of subject terminology to support your views.

Compare ideas and perspectives in a clear, relevant and developed way.

Explain clearly how writers' methods are used.

Make relevant references to both texts.

Evaluate clearly the effect(s) on the reader.

Show developed understanding of writer's methods.

Select a range of relevant textual references.

Make a clear and developed response to the focus of the statement.

Consistently match the tone of your writing to the audience.

Use increasingly sophisticated vocabulary for effect as well as a range of successful methods.

Make effective use of a range of clear and connected paragraphs with integrated connectives.

Use punctuation to create a range of sentences that are mostly accurate.

Spell and use grammar correctly, including complex and irregular words.

Use increasingly sophisticated vocabulary.

Literature

Paper 1 Revision

Students will be able to:

Form a clear response to the tasks across Papers 1.

Use clear evidence from the texts to support a developed response.

Clearly explain the writer's methods, and support explanations supported with references.

Clearly explain the effects of the writer's methods on the reader.

Clearly explain the ideas/contextual features and make links with the texts.

Food Nutrition

Unit 1: Principles of Food and Nutrition Written examination. Learners should be given the opportunity to develop their knowledge and understanding of the six areas of content. Learners should also be given the opportunity to develop technical skills through carrying out practical and experimental work. This opportunity will allow learners to develop sound technical skills whilst exploring and consolidating knowledge and understanding relating to food preparation and nutrition.

Areas of content:

1. Food commodities
2. Principles of nutrition
3. Diet and good health
4. The science of food
5. Where food comes from
6. Cooking and food preparation

French

Students will be able to understand extracts of spoken French and can write on the topic of:

- Bringing the world together: sports events; music events; campaigns and good causes.
- Environmental issues: being "green"; access to natural resources.

Geography

Students move to paper 2 and study the UK's physical landscape along with coastal processes.

Following this students will prepare for their Pre Public Exams.

History

Anglo-Saxon and Norman England, 1060-1088.

Establishing control.

Students will understand:

- The submission of the earls, 1066.
- Rewarding followers and establishing control on the borderlands through the use of earls.
- The Marcher earldoms.
- Reasons for the building of castles; their key features and importance.

The causes and outcomes of AngloSaxon resistance, 1068–71.

Students will understand:

- The revolt of Earls Edwin and Morcar in 1068.
- Edgar the Aethling and the rebellions in the North, 1069.
- Hereward the Wake and rebellion at Ely, 1070–71.

The legacy of resistance to 1087.

Students will understand:

- The reasons for and features of Harrying of the North, 1069–70. Its immediate and long-term impact, 1069–87.
- Changes in landownership from Anglo-Saxon to Norman, 1066–87.
- How William I maintained royal power.

Revolt of the Earls, 1075.

Students will understand:

- Reasons for and features of the revolt.
- The defeat of the revolt and its effects.

The feudal system and the Church.

Students will understand:

- The feudal hierarchy. The role and importance of tenants-in-chief and knights.
- The nature of feudalism
- (Landholding, homage, knight service, labour service); forfeiture.
- The Church in England: its role in society and relationship to government, including the roles of Stigand and Lanfranc.
- The Normanisation and reform of the Church in the reign of William I.

ICT

Design principles – How do we ensure target audience is engaged and understands the interface created

Students will develop the following design principles:

Who is the project aimed at/ who is the target audience?

What hardware will the target audience feel comfortable using and why?

What type of software will they find easy to use?

What type of user interface is best suited to the target audience and why?

Students will then ensure that all planning document which are created replicate the original research which was carried out in AP2.

Maths

- Draw and Interpret Frequency tables, bar charts, composite bar charts, pie charts, pictograms, vertical line charts, stem and leaf (including back-to-back)
- Mean, mode, median, modal class
- Range and outliers
- Compare the mean, median, mode and range (as appropriate) of two
- distributions using bar charts, dual bar charts, pictograms and back-to-back stem and leaf
- Recognise the advantages and disadvantages between measures of average
- Scatter graphs - recognise correlation

- Recognise types of data: primary secondary, quantitative and qualitative
- Understand sample and population
- Listing combinations

Music

Unit 1: The Music Industry (External Exam)

In this unit students will gain a good understanding of the scope of the music industry with a view to getting work in and using the organisations that exist. They will investigate music organisations to find out about the work they do and how they relate to and rely on one another. They will also be given the opportunity to find out about the people who work in these organisations, from performers to people who work in technical, production and administrative roles

Unit 5 Introducing Music Performance (Internal Coursework)

In this unit students will develop their musical performance techniques in relation to their instrument or voice. This will be evidenced through recordings of milestone session, Students will also track their own progress, and identify strengths and areas for development through a unit log. Students will apply the skills they have explored and developed to a performance of a specific piece or pieces of music. They will present a solo or work together to produce an ensemble performance.

Performing Arts

Students will complete Component 3 (Formal Examination)

Learning Aim A: Develop skills and techniques for performance

Learning Aim B: Apply skills and techniques in rehearsal and performance

Learning Aim C: Review own development and performance.

Physical Education

Students will complete Unit 2 – Practical Performance in Sport

Learning Aim A: Understand the rules, regulations and scoring systems for selected sports.

Learning Aim B- Practically demonstrate skills, techniques and tactics in selected sports.

Learning Aim C- Be able to review sports performance

Religious Education

In Y10 and Y11 RE is taught within the Opening Minds program.

Science

Homeostasis and response

Students will be able to:

- Explain that homeostasis is the regulation of the internal conditions of a cell or organism to maintain optimum conditions for function in response to internal and external changes.
- Describe the structure of control systems.
- Describe what negative feedback is.
- Give an example of a negative feedback mechanism.
- Explain how the structure of the nervous system is adapted to its functions.
- Explain how the various structures in a reflex arc relate to their function.
- Understand why reflex actions are important.
- Extract and interpret data from graphs, charts and tables, about the functioning of the nervous system.
- Translate information about reaction times between numerical and graphical forms.
- Describe the principles of hormonal coordination and control by the human endocrine system.
- Identify the position of the following glands on a diagram of the human body: pituitary gland, pancreas, thyroid, adrenal gland, ovary, testes.
- Explain how insulin controls blood glucose (sugar) levels in the body.
- Evaluate information around the relationship between obesity and diabetes, and make recommendations taking into account social and ethical issues.
- Compare Type 1 and Type 2 diabetes and explain how they can be treated.

- (HT only) Explain how glucagon interacts with insulin in a negative feedback cycle to control blood glucose (sugar) levels in the body.
- Describe the roles of hormones in human reproduction, including the menstrual cycle.
- (HT only) Explain the interactions of FSH, oestrogen, LH and progesterone, in the control of the menstrual cycle.
- (HT only) Extract and interpret data from graphs showing hormone levels during the menstrual cycle
- Evaluate the different hormonal and non-hormonal methods of contraception.
- Explain why issues around contraception cannot be answered by science alone.
- Explain the use of hormones in modern reproductive technologies to treat infertility.
- Describe the process of IVF treatment and understand social and ethical issues associated with IVF treatments.
- Evaluate from the perspective of patients and doctors the methods of treating infertility.
- Explain the roles of thyroxine and adrenaline in the body.

This term, the following aspects of the curriculum will be covered in your child's class:

Art & Design/Textiles

Students will be introduced three specialist pathways. They will discover how the design or making cycle works in art and design practice and learn about the specialist materials, techniques and processes of these specialist pathways. They will learn how professionals research widely from different sources to gain inspiration and how this helps them to generate ideas. Whichever vocational pathway students work in; they will continuously review their work to ensure that it meets their creative intentions. They will explore, experiment with and learn how to use specialist materials and techniques relevant to their brief. Students will develop their chosen specialist skills either in fine art, photography or textile. They will also learn about, and record, the health and safety issues associated with the traditional and contemporary media, techniques and processes that you use.

Business

GCSE Business

- Sources of finance for business growth
- Changes in aims and objectives
- Business and globalisation
- Ethics and the business environment

OCR Enterprise and Marketing

- Review their brand based on a range of sources
- Review their pitch and presentation skills

Computing

System security

You should understand:

- forms of attack
- threats posed to networks:
 - 'weak point' in secure systems (social engineering)
 - interception and theft
 - the concept of SQL injection
 - poor network policy
- identifying and preventing vulnerabilities:
 - penetration testing
 - network forensics
 - network policies
 - anti-malware software
 - firewalls
 - user access levels
 - passwords
 - encryption

English

Language

Students will be able to:

Select relevant evidence from both texts. Offer clear interpretation of relevant implicit information.

Make relevant developed comments on how writers use language/structure to achieve effects.

Make clear and accurate use of subject terminology to support your views.

Compare ideas and perspectives in a clear, relevant and developed way.

Explain clearly how writers' methods are used.

Make relevant references to both texts.

Evaluate clearly the effect(s) on the reader.

Show developed understanding of writer's methods.

Select a range of relevant textual references.

Make a clear and developed response to the focus of the statement.

Consistently match the tone of your writing to the audience.

Use increasingly sophisticated vocabulary for effect as well as a range of successful methods.

Make effective use of a range of clear and connected paragraphs with integrated connectives.

Use punctuation to create a range of sentences that are mostly accurate.

Spell and use grammar correctly, including complex and irregular words.

Use increasingly sophisticated vocabulary.

Literature

Paper 2 Revision

Students will be able to:

Form a clear response to the tasks across Papers 1.

Use clear evidence from the texts to support a developed response.

Clearly explain the writer's methods, and support explanations supported with references.

Clearly explain the effects of the writer's methods on the reader.

Clearly explain the ideas/contextual features and make links with the texts.

Food Nutrition

Unit 1: Principles of Food and Nutrition Written examination. Learners should be given the opportunity to develop their knowledge and understanding of the six areas of content. Learners should also be given the opportunity to develop technical skills through carrying out practical and experimental work. This opportunity will allow learners to develop sound technical skills whilst exploring and consolidating knowledge and understanding relating to food preparation and nutrition.

Areas of content:

1. Food commodities
2. Principles of nutrition
3. Diet and good health
4. The science of food
5. Where food comes from
6. Cooking and food preparation

French

Half term 6 centres on revision and consolidation of the key topics covered over the course of Y10:

1. Family/Self
2. School
3. Holidays
4. Jobs
5. The Environment

Students will be able to access GCSE level texts and questions, use a range of tenses, and express themselves competently and confidently in speech and writing.

Geography

Students continue with paper 2 and coasts. They will also complete their GCSE fieldwork.

History

Weimar and Nazi Germany; 1918-1939.

The origins of the Republic, 1918–19.

Students will understand:

- The legacy of the First World War.
- The abdication of the Kaiser, the armistice and revolution, 1918–19.
- The setting up of the Weimar Republic.
- The strengths and weaknesses of the new Constitution.

ICT

Accessibility features on computer systems

Impact of the use of sound/ voice within interfaces. The accessibility available and how it has changed the world for people who have disabilities/ learning difficulties

Maths

- Y10HT6 Students will study
- Identify properties of the faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres
- Draw sketches of 3D solids
- Interpret Plans and elevations of 3D shapes
- Draw circles and arcs to a given radius or given the diameter
- Measure and draw lines, to the nearest mm
- Measure and draw angles, to the nearest degree

Music

Unit 1: The Music Industry (External Exam)

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In this unit students will develop their musical performance techniques in relation to their instrument or voice. This will be evidenced through recordings of milestone session, Students will also track their own progress, and identify strengths and areas for development through a unit log. Students will apply the skills they have explored and

developed to a performance of a specific piece or pieces of music. They will present a solo or work together to produce an ensemble performance.

Performing Arts

Students will complete Component 1 (Performance work 3)

- Describe the stylistic qualities of practitioners' work, with reference to relevant examples across three performance styles.
- Describe the roles, responsibilities and skills of practitioners, using relevant examples across three performance styles.
- Discuss the stylistic qualities of practitioners' work using appropriate examples to justify how roles, responsibilities and skills contribute to creative intentions and purpose across three performance styles.
- Assess the stylistic qualities of practitioners' work using considered examples to show how roles, responsibilities and skills contribute to creative intentions and purpose across three performance styles.
- Describe the processes, skills and approaches used by practitioners to create performance work, with relevant reference to examples of repertoire.
- Describe the interrelationships between components used in performance, with reference to relevant examples of repertoire.
- Discuss the interrelationships between processes, skills and approaches used by practitioners, with appropriate reference to examples of repertoire used to demonstrate how they contribute to performance work.

Explain the interrelationships between processes, skills and approaches used by practitioners, with considered reference to examples of repertoire used to demonstrate how they contribute effectively to performance work.

Physical Education

Students will complete Unit 2 – Practical Performance in Sport

Learning Aim A: Understand the rules, regulations and scoring systems for selected sports.

Learning Aim B- Practically demonstrate skills, techniques and tactics in selected sports.

Learning Aim C- Be able to review sports performance

Religious Education

In Y10 and Y11 RE is taught within the Opening Minds program.

Science

Forces

Students will be able to:

- Describe the difference between a linear and non-linear relationship between force and extension.
- Calculate a spring constant in linear cases.
- Interpret data from investigations of the relationship between force and extension.
- Calculate work done in stretching (or compressing) a spring (up to the limit of proportionality) using the equation for elastic potential energy.
- Required Practical Activity 18
- Recall typical values of speed for a person walking, running and cycling as well as the typical values of speed for different types of transportation systems.
- Make measurements of distance and time and then calculate speeds of objects.
- Recall and apply the equation for distance travelled.
- Calculate average speed for non-uniform motion.
- Use ratios and proportional reasoning to convert units and to compute rates.
- Draw distance–time graphs from measurements and extract and interpret lines and slopes of distance–time graphs.
- Determine speed from a distance–time graph.
- (HT only) Draw a tangent and measure the gradient of the distance–time graph at that time to determine the speed of an accelerating object.

- Explain the vector–scalar distinction as it applies to displacement, distance, velocity and speed.
- (HT only) Explain qualitatively, with examples, that motion in a circle involves constant speed but changing velocity.
- Recall and apply the equation for acceleration.
- Estimate the magnitude of everyday accelerations.
- Draw velocity–time graphs from measurements and interpret lines and slopes to determine acceleration.
- (HT only) Interpret enclosed areas in velocity–time graphs to determine distance travelled (or displacement).
- (HT only) Measure, when appropriate, the area under a velocity– time graph.
- Apply the equation for final velocity.
- Apply Newton’s First Law to explain the motion of objects moving with a uniform velocity and objects where the speed and/or direction changes.
- Recall and apply the equation linking force and acceleration.
- (HT only) Explain that inertial mass is a measure of how difficult it is to change the velocity of an object.
- (HT only) Explain that inertial mass is defined as the ratio of force over acceleration.
- Estimate the speed, accelerations and forces involved in large accelerations for everyday road transport.
- Apply Newton’s Third Law to examples of equilibrium situations.
- Required Practical 19
- Explain the term terminal velocity.
- Explain methods used to measure human reaction times and recall typical results.
- Interpret and evaluate measurements from simple methods to measure the different reaction times of students.
- Evaluate the effect of various factors on thinking distance based on given data.
- Explain the factors which affect the distance required for road transport vehicles to come to rest in emergencies, and the implications for safety.
- Estimate how the distance required for road vehicles to stop in an emergency varies over a range of typical speeds.
- Explain the dangers caused by large decelerations.
- (HT only) Estimate the forces involved in the deceleration of road vehicles in typical situations on a public road.
- Recall and apply the equation for momentum.
- Use the concept of momentum as a model to describe and explain examples of momentum in an event, such as a collision.