KEY STAGE THREE

Years 7 – 9: International Lower Secondary Curriculum (Edexcel)

As from September 2012, the BES will implement the **Edexcel International Lower** Secondary Curriculum. Designed specifically for international schools, the Edexcel International Lower School Curriculum caters for pupils in Years 7 to 9 (ages 12-14) and is available for **English, Mathematics and Science.**

Based on the UK National Curriculum Key Stage 3, it gives pupils a well-rounded education while giving teachers an excellent framework and a sound way to monitor pupil progress.

Designed by experienced examiners, educators and authors, the Edexcel International Lower School Secondary Curriculum:

• provides excellent preparation for IGCSE and GCE A Level, or equivalent – through a structured curriculum for English, mathematics and science.

• provides a solid benchmark of achievement, with externally marked achievement tests and certification at the end of Year 9 **that comply with rigorous international standards**

• allows teachers and parents to track pupils' progress and identify barriers to learning through a variety of **progress and achievement tests**

• offers a comprehensive, well structured and up-to-date learning platform to ease the transition to upper secondary education.

LOWER SECONDARY ENGLISH SPECIFICATION

English Scheme of Work – Year 7

Autumn term Objectives

Unit 1: Biography
• Develop an understanding of **genre**
• Understand b**iography** and **autobiography**
• Using inference and explicit information
• Use of mind maps
• Create timelines
• Develop questioning skills
• Realise the difference between open and closed questions
• Develop the skill of making notes
• Expanding notes
• Realise the difference between fact and opinion
• Realise the difference between objective and subjective texts
• Use grammar accurately and appropriately

Unit 2: News

* Read and engage with a wide and varied range of texts
* Relate texts to the social, historical and cultural contexts in which they were written
* Understand structure of texts
* Understand the elements of a newspaper
* Develop writing for a specific purpose
● Creating headlines
● Understand the idea of a target audience
● Brainstorming to develop ideas
● Vary sentences and punctuation for clarity and effect
● Understand the importance of the right word
● Use of the apostrophe
● Structure, organise and present texts in a variety of forms on paper and on screen
● Develop and use editing and proofreading skills on paper and on screen
● Use grammar accurately and appropriately

Spring term Objectives

Unit 3: Stories – creative writing
* Develop and adapt active reading and skills strategies
● Understand and respond to ideas, viewpoint, themes and purposes in text
● Read and engage with a wide and varied range of texts
● Relate texts to the social, historical and cultural contexts in which they were written
● Generate story beginnings
● Settings of stories
● Realise the importance of endings
● Develop the use of dialogue in a narrative
● Develop characters
● Understand the use of dialogue in plays
● Use grammar accurately and appropriately
● Use of commas
● Suffixes
● Punctuation of speech

Unit 4: Our World
● Make a sustained contribution to a group discussion
● Understand how to isolate the main ideas in a text
● Appreciate the importance of the choice of vocabulary
● Study variations in regional speech
● Colloquial and standard English
● Point of view in a narrative
● Writing short stories
● Reviewing a text
● Structuring views
● Structuring an argument
● Listen carefully in order to solve problems
● Use a range of reading strategies to retrieve relevant information
● Respond to a text by making precise points and providing relevant evidence
● Explain how specific structural and organisational choices in texts create particular effects
● Plan writing and develop ideas to suit a specific audience
● Select technique and devices used by writers
● Draw on their knowledge of wide range of sentence lengths
● Experiment with different ways of presenting text
● Draw on their knowledge of grammatical conventions to write accurate texts
● Spell correctly

Summer term Objectives

Unit 5 Poetry Read a range of verse types
● Develop a definition of poetry
● Understand the use of layout form and presentation
● Understand the role of rhythm in poetry
● Use and appreciate alliteration and onomatopoeia
● Use adverbs and adjectives for effect
● Create syllable and shape poems.

● Haiku
● Know how and why writers use varying degrees of formality and informality
● Draw on their knowledge of grammatical conventions
● Apply knowledge of spelling skills and strategies
● Investigate poems from a range of historical periods to show how the English language has changed   and varied over time

Unit 6: Take action
●   Develop and adapt discussion skills and strategies in formal and informal contexts
●   Develop and adapt active reading
●   Develop skimming and scanning
●   Understand the different kinds of textual information
●   How to use and index
●   Understand the effect of compressing information
●   The use of emotive language
●   The use of repetition and rhetorical language
●   Revising work
●   Read and engage with a wide and varied range of texts
●   Analyse how writers' use of linguistic and literary features shapes and influences meaning
●   Analyse writers' used of organisation, structure, layout and presentation
●   Use and adapt the conventions and forms of texts
●   Develop viewpoint, voice and ideas

Literature Books studied in Year 7
●   **Canon Fire – (A collection of Short Stories)**
●   **The Hound of the Baskervilles:** *Sir Arthur Conan Doyle*
●   **The Foreshadowing:** *Marcus Sedgwick*
●   **You Don't Know Me:** *David Klass*
●   **New Moon:** *Meyer*

ASSESSMENT
Each unit is assessed by a **Unit Test and Mark Scheme** provided by Edexcel in order to judge the progress made by learners. There will be a formal **Progress Test and Mark Scheme** provided by Edexcel at the end of Year 7. This will be internally assessed by the school using the Mark Scheme provided.

English Scheme of Work – Year 8

Autumn term Objectives

Unit 1: Advertising - the language of persuasion
●   Analyse features in speech and suggest areas for improvement
●   Select the most appropriate way to structure speech
●   Engage listeners' attention and interest by using a range of different verbal and non-verbal techniques
●   Listen carefully in order to solve a problem
●   Use a range of reading strategies to retrieve relevant information
●   How different audiences respond to texts
●   Make some appropriate selections from a range of conventions and forms in speech
●   Respond to a text by making precise points and providing relevant evidence
●   Recognise and comment on writers' language choices
●   Explain how specific choices of form, layout or combinations of text formats create particular effects
●   Draw on their knowledge of a wide variety of sentence lengths
●   Experiment with different ways of presenting texts

Unit 2: Drama – working with a script
●   Engage listeners' attention and interest by using a range of different vocal and non-verbal techniques
●   Make a sustained contribution to a group discussion

- Use specific dramatic approaches and conventions in a structured way
- Develop and sustain processes, narratives and performances
- Evaluate the impact and effectiveness of a range of dramatic conventions
- Use inference and deduction to explore layers of meaning
- Broaden their experience of reading and express preferences and opinions about texts
- Explain how specific structural and organisational choices in texts create particular effects
- Plan writing and develop ideas to suit a specific audience
- Draw on a repertoire of linguistic and literary techniques
- Experiment with different ways of presenting texts

Spring term Objectives

Unit 3: Detective Stories – creative writing
- Develop and adapt active reading and skills strategies
- Understand and respond to ideas, viewpoint, themes and purposes in text
- Read and engage with a wide and varied range of texts
- Relate texts to the social, historical and cultural contexts in which they were written
- Generate ideas, planning and drafting
- Use and adapt the conventions and forms of text on paper and on screen
- Develop a viewpoint, voice and ideas
- Vary sentences and punctuation for clarity and effect
- Structure, organise and present texts in a variety of forms on paper and on screen
- Develop and use editing and proofreading skills on paper and on screen
- Use grammar accurately and appropriately

Unit 4: Communication – developing an opinion

- Make a sustained contribution to a group discussion
- Listen carefully in order to solve problems
- Use a range of reading strategies to retrieve relevant information
- Use inference and deduction to explore layers of meaning
- Respond to a text by making precise points and providing relevant evidence
- Explain how specific structural and organisational choices in texts create particular effects
- Plan writing and develop ideas to suit a specific audience
- Select technique and devices used by writers
- Draw on their knowledge of wide range of sentence lengths
- Create considered and appropriate effects by drawing independently on the range and variety of their own vocabulary
- Draw on a repertoire of linguistic and literary techniques
- Use a range of cohesive devices with audience and purpose in mind
- Experiment with different ways of presenting text
- Draw on their knowledge of grammatical conventions to write accurate texts
- Spell correctly

Summer term Objectives

Unit 5: Language – then and now
- Use a range of reading strategies to retrieve relevant information
- Make relevant notes
- Know how and why writers use varying degrees of formality and informality
- Draw on their knowledge of grammatical conventions to write accurate texts
- Apply knowledge of spelling skills and strategies with increasing independence
- Investigate texts from a range of historical periods to show how the English language has changed and varied over time
- Explain some ways in which language varies
- Explain why linguistic concepts are related

Unit 6: Places and Perspectives – travel writing to guide or inform

- Develop and adapt discussion skills and strategies in formal and informal contexts
- Develop and adapt active reading skills
- Read and engage with a wide and varied range of texts
- Analyse how writers' use of linguistic and literary features shapes and influences meaning
- Analyse writers' used of organisation, structure, layout and presentation
- Use and adapt the conventions and forms of texts on paper and screen
- Develop viewpoint, voice and ideas
- improve vocabulary for precision and impact
- Develop varied linguistic and literary techniques
- Structure, organise and present texts in a variety of forms on paper and on screen
- Develop and use editing and proofreading skills on paper and on screen

ASSESSMENT

Each unit is assessed by a **Unit Test and Mark Scheme** provided by Edexcel in order to judge the progress made by learners. There will be a **formal Progress Test and Mark Scheme** provided by Edexcel at the end of Year 8. This will be internally assessed by the school using the Mark Scheme provided.

Literature books studied in Year 8

- **A Christmas Carol: *Charles Dickens***
- **Hope Springs: *Richard Conlon***
- **The Skin I'm In: *Sharon Flake***
- **Romeo and Juliet: *Shakespeare***
- **Twilight: *Meyer***

English Scheme of Work – Year 9
Autumn term Objectives

Unit 1: Magazines
- Analyse features in speech and suggest areas for improvement
- Consider and evaluate a range of magazines
- Understand the concept of target audience
- Use standard English
- Use a range of reading strategies to retrieve relevant information
- How different audiences respond to texts
- Select and use a range of strategies to locate information
- Analyse and use literary and rhetorical techniques
- Analyse how texts are shaped by audiences preferences and opinions
- Respond to a text by making precise points and providing relevant evidence
- Recognise and comment on writers' language choices
- Explain how specific choices of form, layout or combinations of text formats create particular effects
- Draw on their knowledge of a wide variety of sentence lengths
- Experiment with different ways of presenting texts

Unit 2: Poetry

- Engage listeners' attention and interest by using a range of different vocal and non-verbal techniques
- Make a sustained contribution to a group discussion
- Discover how a poet uses form
- Appreciate how rhyme and repetition are used
- Learn how to use figures of speech
- Learn how to compare poems
- Learn how to interpret a poem
- Analyse writers' use of literary, rhetorical and grammatical features
- Develop interpretations of texts supporting points with detailed textual evidence
- Use inference and deduction to explore layers of meaning

- Broaden the experience of reading and express preferences and opinions about texts
- Explain how specific structural and organizational choices in texts create particular effects
- Plan writing and develop ideas to suit a specific audience
- Draw on a repertoire of linguistic and literary techniques
- Experiment with different ways of presenting texts

Spring term Objectives
Unit 3: Telling stories
- Develop and adapt active reading and skills strategies
- Explore short story structures and use that knowledge in creative work
- Understand and respond to ideas, viewpoint, themes and purposes in text
- Read and engage with a wide and varied range of texts
- Relate texts to the social, historical and cultural contexts in which they were written
- Generate ideas, planning and drafting
- Explore the ideas, viewpoints and themes in a variety of short stories
- Establish and sustain distinctive character, point of view and voice in their fiction writing by drawing on techniques used by writers
- Develop a viewpoint, voice and ideas
- Vary sentences and punctuation for clarity and effect
- Structure, organise and present texts in a variety of forms on paper and on screen
- Develop and use editing and proofreading skills
- Use grammar accurately and appropriately

Unit 4: Thinking about work
- Make a sustained contribution to a group discussion
- Listen carefully in order to solve problems
- Use a range of reading strategies to retrieve relevant information
- Recognise strengths and identify areas for development in their own and others' contributions
- Choose appropriately from a wide variety of roles and apply the skills they require to plan, organise or sustain a range of different discussions
- Analyse and exemplify the way that forms and varieties of English used by writers and speakers can be influenced by context and purpose
- Select the most appropriate text, format, layout and presentation to create impact and engage the reader
- Use inference and deduction to explore layers of meaning
- Respond to a text by making precise points and providing relevant evidence
- Use standard English with a level of formality suited to listeners and purpose
- Explain how specific structural and organisational choices in texts create particular effects
- Plan writing and develop ideas to suit a specific audience
- Select technique and devices used by writers
- Draw on their knowledge of wide range of sentence lengths
- Create considered and appropriate effects by drawing independently on the range and variety of their own vocabulary
- Draw on a repertoire of linguistic and literary techniques
- Use a range of cohesive devices with audience and purpose in mind
- Experiment with different ways of presenting text
- Draw on their knowledge of grammatical conventions to write accurate texts
- Spell correctly

Summer term Objectives
Unit 5: Some revision
- Use a range of reading strategies to retrieve relevant information from a substantial text
- Develop and adapt active reading skills
- Make relevant notes
- Know how and why writers use varying degrees of formality and informality
- Draw on their knowledge of grammatical conventions to write accurate texts
- Apply knowledge of spelling skills and strategies with increasing independence
- Explain some ways in which language varies

Unit 6: Types of writing
- Develop and adapt discussion skills and strategies in formal and informal contexts
- Develop the ability to structure an essay
- Read and engage with a wide and varied range of texts

Literature books studied in Year 9

- **Millions:** *Boyce*
- **Whispers in the Graveyard:** *Breslin*
- **Brave New Words:** *Short Stories*
- **Iqbal:** *D'Adamo*
- **Oliver Twist:** *Charles Dickens*

ASSESSMENT

Each unit is assessed by **a Unit Test and a Mark Scheme** provided by Edexcel in order to judge the progress made by learners. At the end of **Year 9** there will be an **Achievement Test** which will be **set and externally assessed** by Edexcel. The purpose of these Tests is to enable students to demonstrate the progress they have made during the Lower Secondary Stage of their education. Students will gain **internationally recognized certification** of their achievement.

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LOWER SECONDARY MATHEMATICS SPECIFICATION

Mathematics Scheme of Work Year 7 – Overview

Term One Objectives
Unit 1 (Algebra 1)
- Generate and describe simple integer sequences
- Generate terms of a simple sequence, given a rule (eg finding a term from the previous term, finding a term given its position in the sequence)
- Generate terms of a linear sequence using term-to-term definitions of the sequence, on paper and using a spreadsheet or graphical calculator
- Generate sequences from practical contexts and describe the general term in simple cases
- Begin to use linear expressions to describe the nth term of an arithmetic sequence
- Express simple functions in words, then using symbols
- Represent simple functions in mappings
- Use letter symbols to represent unknown numbers or variables
- Begin to distinguish the different roles played by letter symbols in equations, formulae and functions
- Know the meanings of the words 'term', 'expression', 'equation', 'formula' and 'function'
- Know that algebraic operations follow the same conventions and order as arithmetic operations
- Use index notation for small positive powers
- Simplify linear algebraic expressions by collecting like terms
Unit 2 (Number 1)
- Understand and use decimal notation and place value
- Compare and order decimals in different contexts
- Know that when comparing measurements they must be in the same units
- Understand negative numbers (integers) as positions on a number line
- Add and subtract integers
- Order, add and subtract positive and negative integers in context
- Add, subtract, multiply and divide integers
- Consolidate the rapid recall of number facts, including positive integer complements to 100
- Use standard column procedures to add and subtract whole numbers and decimals up to two decimal places
- Use standard column procedures to add and subtract integers and decimals of any size, including a mixture of large and small numbers with a differing number of decimal places
- Understand addition and subtraction of whole numbers and decimals
- Extend written methods to: HTU □ U, TU □ TU
- Know how to use the laws of arithmetic and inverse operations
- Use known facts to derive unknown facts, including products such as 0.7 and 6, and 0.03 and 8

- Consider if an answer is realistic, and check it by working the problem backwards
- Know squares to at least 10 □ 10
- Work out squares of numbers beyond 10 □ 10 and the corresponding roots
- Use the square root key
- Consolidate and extend mental methods of calculation, working with squares and square roots
- Use squares and positive and negative square roots
- Round up or down after division, depending on the context
- Consolidate the rapid recall of number facts, including multiplication facts to 10 □ 10, and quickly derive associated division facts
- Extend written methods to HTU □ U
- Divide three-digit by two-digit whole numbers

Unit 3 (Geometry and measures 1)
- Calculate perimeters or side lengths of polygons or shapes made from rectangles
- Use names and abbreviations of units of measurement to measure, estimate and solve problems involving length and time
- Find the area of rectangles and triangles
- Find the area of shapes made from rectangles and triangles
- Deduce and use formulae for the area of a triangle, parallelogram and trapezium
- Measure and draw lines to the nearest millimetre
- Recognise metric units of measure and convert between them
- Solve problems involving units of measure
- Make simple scale drawings

Term One Objectives
Unit 4 (Number 2)
- Use fraction notation to describe parts of a shape and use a diagram to compare two or more simple fractions
- Simplify fractions using common factors and identify equivalent fractions
- Convert terminating decimals to fractions, eg 0.23 □ 100 23
- Use mental methods and suitable jottings to calculate fractions
- Add and subtract simple fractions and add and subtract fractions by writing them with a common denominator
- Consolidate and extend mental methods of calculation to include fractions, accompanied where appropriate, by suitable jottings, solve simple word problems using mental methods
- Change an improper fraction into a mixed number
- Check a result by working the problem backwards
- Calculate simple fractions of quantities and measurements
- Multiply and divide an integer by a fraction
- Understand effects of multiplying and dividing by numbers from 0 and 1
- Understand percentage as the 'number of parts per 100'
- Recognise the equivalence of percentages, fractions and decimals
- Know that a recurring decimal can be written as a fraction
- Use division to convert fractions to decimals and recall conversions
- Write fractions in order of size by writing them with a common denominator or by converting them to decimals
Unit 5 (Statistics 1)
- Find the mode and range for a small set of discrete data
- Find the modal class for grouped discrete data and continuous data
- Calculate the mean for a simple frequency table
- Find the median
- Recognise when it is appropriate to use range, mean, median or mode in simple cases or in more complex cases
- Draw conclusions from simple statistics for a simple distribution
- Find the mode from any bar chart
- Draw and interpret data from compound and comparative bar charts
- Interpret data and draw conclusions from bar charts and line graphs
- Interpret data in population pyramids
- Interpret conversion graphs
- Use the vocabulary of probability
- Use a probability scale with words
- Understand and use the probability scale 0 to 1
- Find the probabilities of equally likely outcomes
- Identify all possible mutually exclusive outcomes of a single event
- Collect data from a simple experiment and record in a frequency table
- Estimate probabilities based on data from simple experiments
- Use relative frequency as an estimate of probabilities

● Compare experimental and theoretical probabilities

Unit 6 (Algebra 2)
 ● Express simple functions in words, and then in symbols
● Represent algebraic expressions using simple mapping diagrams
● Know that algebraic operations follow the same conventions and order as arithmetic operations
● Use index notation for small positive powers
● Understand that algebraic operations follow the same conventions and order as arithmetic operations
● Simplify linear algebraic expressions by collecting like terms
● Multiply a single term over a bracket
● Use simple formulae from mathematics and other subjects
● Substitute integers into simple linear expressions and formulae, including examples that lead to an equation to solve, and positive integers into expressions involving small powers (eg $3x_2 + 4$ or $2x_3$)
● In routine cases, derive a simple formula

Term One Objectives
Unit 7 (Geometry and measures 2)
● Use the correct vocabulary for notation and labeling conventions of lines, angles and shapes
● Use angle measure; distinguish between and estimate the size of acute, obtuse and reflex angles
● Identify parallel and perpendicular lines
● Know the sum of angles at a point, on a straight line and in a triangle and recognise vertically opposite angles
● Identify alternate and corresponding angles
● Understand a proof that i) the sum of the angles of a triangle is 180° and of a quadrilateral is 360°, and ii) the exterior angle of a triangle is equal to the sum of the two interior opposite angles
● Read and plot coordinates in the first quadrant
● Use conventions and notation for 2-D coordinates in all four quadrants; find coordinates of points determined by geometric information
● Given the coordinates of points A and B, find the mid-point of the line segment AB

Term Two Objectives

Unit 8 (Statistics 2)
 ● Identify different nets for an open cube
● Use 2-D representations to visualise 3-D shapes and their properties
● Measure and draw lines to the nearest millimetre
● Record estimates and readings from scales to a suitable degree of accuracy
● Use names and abbreviations of units of measurements to measure, estimate and solve problems in everyday contexts involving length and area
● Make simple scale drawings
● Understand that area is measured in square centimetres
● Understand, measure and calculate perimeters of rectangles and regular polygons
● Know and use the formula for the area of a rectangle; calculate the perimeter and area of shapes made from rectangles
● Deduce and use formula for the area of a triangle, parallelogram and trapezium
● Use nets to calculate the surface area of simple cuboids
● Know and use the formula for the volume of a cuboid

Term Two Objectives
Unit 9 (Number 3)
● Round positive whole numbers to the nearest 10, 100 or 1000 and to any given power of 10
● Read and write positive integer powers of 10
● Round decimals to the nearest whole number or to one or two decimal places
● Write decimals in order of size, and compare and write decimals in order of size in different contexts
● Give solutions in context, using appropriate degrees of accuracy
● Understand where to position the decimal point by considering equivalent calculations
● Consolidate and extend mental methods of calculation, working with decimals and squares, accompanied where appropriate by suitable jottings
● Multiply and divide integers and decimals by 0.1 and 0.01
● Multiply and divide three-digit by two-digit whole numbers
● Extend to multiplying or dividing decimals with one or two places by single-digit whole numbers
● Multiply and divide integers and decimals including by decimals such as 0.6 and 0.06
● Make and justify estimates and approximations of calculations
● Consider if an answer is realistic, and check it by working the problem backwards
● Know and use the order of operations, including brackets
● Develop calculator skills and use a calculator effectively, use the appropriate calculator key to square numbers and

use the square root and sign change keys
● Enter numbers and interpret the display in different contexts (decimals, money, metric measures, time)
● Use the 'brackets' and the 'memory' functions on the calculator for calculations with more than one step

Unit 10 (Algebra 3)
● Generate terms of a simple sequence, given a rule (eg find a term from the previous term, find a term given its position in the sequence)
● Generate terms of a linear sequence using term-to-term definitions of the sequence
● Begin to use linear expressions to describe the nth term of an arithmetic sequence
● Use an activity or practical context to generate, and justify, an nth term
● Express simple functions in symbols, represent algebraic expressions using simple mappings
● Generate coordinate pairs that satisfy a simple linear rule
● Plot the graphs of linear functions, where y is given explicitly in terms of x
● Recognise straight-line graphs parallel to the x-axis or $y$axis
● Generate points in all four quadrants and plot the graphs of linear functions
● Plot the graphs of linear functions, where y is given explicitly in terms of x

Unit 11 (Geometry and measures 3)
● Use a ruler to measure and draw lines, to the nearest millimetre, and a protractor to measure angles, including reflex angles, to the nearest degree
● Use a ruler and protractor to construct a triangle given two sides and the included angle (SAS) or two angles and the included side (ASA)
● Use a ruler and compasses to construct:
– the perpendicular bisector of a line segment
– the bisector of an angle
– a triangle given three sides (SSS)
● Use a ruler and protractor to construct simple nets of 3-D shapes, using squares, rectangles and triangles; for example regular tetrahedron, square-based pyramid, triangular prism
● Solve geometrical problems using side and angle properties of equilateral, isosceles and right-angled triangles and special quadrilaterals
● Use bearings to specify direction

Term Two Objectives
Unit 12 (Number 4)
● Understand percentage as the 'number of parts per 100'
● Find simple percentages of whole-number quantities and express one given number as a percentage of another
● Use fraction notation to express a smaller whole number as a fraction of a larger one
● Solve simple problems using ideas of ratio ('one for every ...')
● Use ratio notation and reduce a ratio to its simplest form
● Divide a quantity into two or more parts in a given ratio
● Understand the relationship between ratio and proportion
● Solve simple problems on ratio and proportion using informal strategies
● Use direct proportion in simple contexts
● Recognise the equivalence of percentages, fractions and decimals
● Use percentages to compare simple proportions
● Understand the relationship between ratio and proportion and use the equivalence of fractions, decimals and percentages to compare proportions
● Consider if an answer is realistic, and check it by working the problem backwards
● Interpret solutions in the context of the original problem
● Use the unitary method to solve simple word problems involving ratio and direct proportion

Term Two Objectives
Unit 13 (Statistics 2)
● Construct and solve simple linear equations with integer coefficients (unknown on one side only) using an appropriate method (eg inverse operations)
● Solve linear equations of the form $ax \pm b \square c$
● Construct and solve linear equations of the form $ax \pm b \square cx \pm d$

Term Three Objectives
Unit 14 (Geometry and measures 4)
● Understand and use language associated with translations, reflections, rotation and enlargement

- Recognise and visualise a reflection in a given line of reflection and the translation of a 2-D shape
- Recognise and visualise the transformation of a 2-D shape after a rotation
- Transform 2-D shapes by simple combinations of rotations
- Describe and carry out rotations on a four-quadrant coordinate grid
- Solve problems to find an angle of rotation
- Make generalisations and work algebraically
- Recognise and visualise line and rotation symmetry of 2-D shapes
- Identify all the symmetries of 2-D shapes
- Know and understand the term 'congruent'
- Identify congruent shapes and know that corresponding sides and angles are equal
- Transform 2-D shapes by simple and complex combinations of rotations, reflections and translations
- Enlarge 2-D shapes, given a centre of enlargement and a positive whole number scale factor
- Solve problems to find areas and which link perimeter or area to other topics in mathematics
- Write algebraic expressions for side lengths or areas

Term Two Objectives
Unit 15 (Statistics 3)
- Find the mode and range and mean for a small set of discrete data
- Find the modal class for a small set of grouped discrete data
- Calculate the mean from a simple frequency table and from a set of data using an assumed mean
- Draw conclusions from simple statistics for a single distribution
- Construct on paper simple pie charts using categorical data
- Interpret and/or compare bar graphs and frequency diagrams which are misleading
- Identify which graphs are the most useful in the context of the problem
- Compare two simple distributions using the range and either the mode or the median or the mean and using the shape of the distributions
- Choose and justify appropriate diagrams, graphs and charts to illustrate a short report of a statistical enquiry
- Recognise when modal class is most appropriate for grouped data
- Select statistics most appropriate to the problem – selecting range and choosing mean or median – using and applying the measures appropriately
- Compare two distributions given summary statistics in more complex cases
- Construct and use stem-and-leaf diagrams
- Use simple and then more complex two-way tables,
- Make inferences about data through extracting information from a two-way table
- Construct and interpret simple scatter graphs (no line of best fit)
- Understand and use a probability scale with words and from 0 to 1
- Find and justify probabilities based on equally likely outcomes in simple contexts
- Know that if the probability of an event is p, the probability of it not occurring is $1 \square p$
- Identify all possible mutually exclusive outcomes of a single event; for two successive events with two outcomes in each event and for two successive events with three outcomes in each event
- Calculate the probability of the final event of a set of mutually exclusive events
- Use the vocabulary of probability to assign a probability to a complex event
Unit 16 (Number 5)
- Make and justify estimates and approximations of calculations
- Extend mental calculations to squares, square root, cubes and cube roots
- Read and write positive integer powers of 10
- Use index notation for small positive integer powers
- For calculations with more than one step, use the 'brackets' and the 'memory' functions on the calculator
- Use the calculator keys for square roots and change of sign
- Know how to enter complex calculations using the function keys of a calculator for powers and roots
- Identify factors of two-digit numbers
- Recognise and use multiples, factors (divisors), common factor, highest common factor and lowest common multiple and primes (less than 100)
- Use simple tests of divisibility
- Recognise prime numbers
- Find the prime factor decomposition of a number
- Consolidate and extend mental methods to include decimals, fractions and percentages, accompanied where appropriate by suitable jottings
- Recall known facts, including fraction to decimal conversions
- Calculate fractions of quantities and measurements (whole number and fraction answers); multiply and divide an integer by a fraction
- Multiply a fraction by an integer
- Add and subtract fractions by writing them with a common denominator

● Use efficient methods to add, subtract, multiply and divide fractions, interpreting division as a multiplicative inverse
● Cancel common factors before multiplying
● Approximate first and use informal pencil and paper methods to support addition and subtraction
● Consider if an answer is realistic, and check it by working the problem backwards
● Use written methods for multiplying decimals
● Enter numbers and interpret the display of a calculator in different contexts (negative numbers, fractions, decimals, percentages, money, metric measures, time)
● Know that a recurring decimal is a fraction
● Understand where to position the decimal point by considering equivalent calculations
● Use known facts to derive unknown facts, including products such as 0.7 and 6, and 0.03 and 8
● Multiply and divide integers and decimals, including by decimals such as 0.6 and. 0.06

Unit 17 (Algebra 5)
● Generate sequences from practical contexts
● Describe the general term in simple cases
● Begin to use linear expressions to describe the nth term of an arithmetic sequence
● Construct and solve linear equations of the form $ax \pm b \square c$
● Construct and solve linear equations of the form $ax \pm b \square cx \pm d$
● Construct and solve equations of the form $a(x \pm b) \square c(x \pm d)$
● Construct and solve equations of the form $a(bx \pm c) \square d(ex \pm f)$
● Use formulae from mathematics and other subjects
● Substitute numbers into expressions and formulae
● Derive a formula
● Read and plot coordinates in all four quadrants
● Plot and interpret the graphs of simple linear functions arising from real-life situations
● Begin to use graphs and set up equations to solve simple problems involving direct proportion

Unit 18 (Geometry and measures 5)
● Use a ruler and protractor to measure and draw acute and obtuse angles to the nearest degree
● Calculate angles in a triangle and angles around a point
● Use a ruler and protractor to construct a triangle given two angles and the included side (ASA) and given two sides and the included angle (SAS)
● Use a straight edge and compasses to construct a triangle given three sides (SSS), the bisector of an angle and the mid-point and perpendicular bisector of a line segment
● Visualise a wide range of 2-D representations of 3-D objects

Term Two Objectives
Unit 18 (Geometry and measures)
● Begin to use plans and elevations
● Analyse 3-D shapes through informal 2-D representations
● Know and use the geometric properties of cuboids
● Identify and construct simple nets of 3-D shapes – cubes and cuboids
● Deduce properties of simple 2-D representations of 3-D shapes
● Identify simple nets of 3-D regular polyhedra and accurately construct simple nets of 3-D shapes: regular tetrahedron, square-based pyramid, triangular prism
● Calculate surface area of simple cuboids, with and without the use of nets
● Calculate the surface areas of shapes made from cuboids for lengths given as whole numbers
● Use units of measurement to solve problems in everyday contexts involving surface area and volume
● Know and use the formulae for the volume of a cube and cuboid
● Calculate the volumes of shapes made from cubes and cuboids
● Suggest the appropriate units and methods to measure a volume

ASSESSMENT

Each unit is assessed by a **Unit Test and Mark Scheme** provided by Edexcel in order to assess the progress made by learners. There will be a formal **Progress Test and Mark Scheme** provided by Edexcel at the end of Year 7. This will be internally assessed by the school using the Mark Scheme provided.

Mathematics Scheme of Work Year 8 – Overview

Term One Objectives
Unit 1 (Number / Algebra 1)
● Add, subtract, multiply and divide integers
● Recognise squares of numbers to at least 12 x 12 and the corresponding roots
● Use squares, positive and negative square roots, cubes and cube roots, and index notation for small positive integer powers
● Use known facts to derive unknown facts
● Strengthen and extend mental methods of calculation, working with squares and square roots, cubes and cube roots
● Use index notation for integer powers and simple instances of index laws
● Recognise and use multiples, factors (divisors), common factors, highest common factors, lowest common multiples and primes numbers
● Find the prime factor decomposition of a number
● Use the prime factor decomposition of a number
● Generate and describe sequences using integers
● Generate terms of a linear sequence using term-to-term rules
● Generate sequences from practical contexts
● Generate terms of a sequence using term-to-term and position-to-term rules, on paper and using ICT
● Find the next term of quadratic sequences
Unit 2 (Geometry and measures 1)
● Understand a proof that: the sum of the angles of a triangle is 180°; and of a quadrilateral is 360°; and the exterior angle of a triangle is equal to the sum of the two interior opposite angles
● Distinguish between conventions, definitions and derived properties
● Use a ruler and protractor to measure and draw angles, including reflex angles, to the nearest degree; and to construct a triangle, given two sides and the included angle (SAS) or two angles and the included side (ASA)
● Use a straight edge and a pair of compasses to construct triangles, given the right angle, hypotenuse and side (RHS)
● Solve geometrical problems using side and angle properties of equilateral, isosceles and right-angled triangles, and special quadrilaterals, explaining reasoning with diagrams and text; classify quadrilaterals by their geometrical properties
● Solve problems using the properties of angles, of parallel and intersecting lines, and of triangles and other polygons
● Use a straight edge and a pair of compasses to construct: a perpendicular bisector of a line segment; a bisector of an angle; a perpendicular from a point above or below a line; a perpendicular from a point on a line
● Know the definition of a circle and the names of its parts
● Explain how to find, calculate and use the sums of the interior and exterior angles of quadrilaterals, pentagons and hexagons; and the interior and exterior angles of
regular polygons
Unit 3 (Statistics 1)
● Understand and use the probability scale from 0 to 1; find and justify probabilities based on equally likely outcomes in simple contexts
● Know that if the probability of an event occurring is P, then the probability of it not occurring is $1 - P$
● Identify all the mutually exclusive outcomes of an experiment; know that the sum of probabilities of all mutually exclusive outcomes is 1, and use this when solving problems
● Use the vocabulary of probability when interpreting the results of an experiment; appreciate that random processes are unpredictable
● Use the vocabulary of probability in interpreting results involving uncertainty and prediction
● Find and record all the possible mutually exclusive outcomes for single events and two successive events in a systematic way using diagrams and tables
● Collect data from a simple experiment and record in a frequency table; estimate probabilities based on this data
● Estimate probabilities from experimental data; understand that: if an experiment is repeated there may be, and usually will be, different outcomes; increasing the number of times an experiment is repeated generally leads to better estimates of probability
● Estimate probabilities from experimental data
● Compare experimental and theoretical probabilities in a range of contexts; appreciate the difference between mathematical explanation and experimental evidence
Term One Objectives
Unit 4 (Number 2)
● Use fraction notation to express a smaller whole number as a fraction of a larger whole number
● Use division to convert a fraction into a decimal
● Know that a recurring decimal can be written as a fraction
● Write fractions in order of size by using a common denominator or by converting the fractions into decimals
● Add and subtract fractions by writing them with a common denominator
● Understand addition and subtraction of fractions
● Use the laws of arithmetic and inverse operations
● Calculate fractions of quantities

● Multiply and divide fractions, interpreting division as a multiplicative inverse; cancel common factors before multiplying or dividing
● Interpret percentage as the operator 'so many hundredths of' and express one given number as a percentage of another
● Use the equivalence of fractions, decimals and percentages to compare proportions
● Calculate percentages
● Find the outcome of a given percentage increase or decrease
● Solve problems involving percentage change
● Recall equivalent fractions, decimals and percentages; use known facts to derive unknown facts, including products involving numbers such as 0.7 and 0.6, and 0.03 and 8
● Know where to position the decimal point by considering
equivalent calculations
● Recap and extend mental methods of calculation, working with decimals, fractions and percentages; solve problems using mental methods

Unit 5 (Algebra 2)
● Express simple functions in symbols and then algebraically; and represent them in mappings
● Find the inverse of a linear function
● Recognise straight-line graphs parallel to the x-axis or $y$axis
● Generate points in all four quadrants and plot the graphs of linear functions, where y is given explicitly in terms of x, on paper and using ICT
● Understand the meaning of m and c in linear functions of the form $y = mx + c$
● Find the gradient of a straight-line graph
● Construct linear functions arising from real-life problems and plot their corresponding graphs
● Discuss and interpret graphs arising from real situations, eg distance–time graphs

Unit 6 (Geometry and measures 2)
● Convert one metric unit to another, eg grams to kilograms
● Know rough metric equivalents of imperial measures in common use, such as feet, miles, pounds, pints and gallons
● Convert between area measures (eg mm_2 to cm_2, cm_2 to m_2, and vice versa) and between volume measures (e.g. mm_3 to cm_3, cm_3 to m_3, and vice versa)
● Calculate the perimeter and area of shapes made from rectangles
● Derive and use formulae for the area of a triangle, parallelogram and trapezium
● Calculate areas of compound shapes made from triangles and rectangles
● Know and use the formulae for the circumference and area of a circle
● Know and use the formula for the volume of a cuboid
● Calculate volumes and surface areas of cuboids and shapes made from cuboids
● Calculate the surface area and volume of right prisms
● Choose and use units of measurement to measure, estimate, calculate and solve problems in a range of contexts

Term Two Objectives

Unit 7 (Algebra 3)
● Use letter symbols to represent unknown numbers or variables; know the meanings of 'term', 'expression' and 'equation'
● Know the meanings of 'formula' and 'function'
● Distinguish the different roles played by letter symbols in equations, identities, formulae and functions
● Know that algebraic operations follow the same conventions and order as arithmetic operations; use index notation for small positive integer powers
● Evaluate expressions using the correct order of operations
● Collect like terms by applying the distributive law
● Know that expressions with repeated multiplication can be written as powers
● Know and use the general forms of the rules of powers for multiplication and division of positive integer powers
● Simplify expressions by multiplying out brackets and collecting like terms
● Substitute integers into formulae with powers
● Factorise expressions with a single bracket
● Substitute numbers into expressions and formulae
● Derive expressions and formulae

Unit 8 (Number 3)
● Consolidate and extend mental methods of calculation to include negative integers
● Consolidate standard column procedures for addition and subtraction of integers and decimals with up to two decimal places
● Use efficient written methods to add and subtract integers and decimals of any size, including numbers with different decimal places
● Multiply and divide decimals by 10, 100 and 1000
● Read and write positive integer powers of 10; multiply and divide integers and decimals by 0.1, 0.01
● Round positive numbers to any given power of 10; round decimals to the nearest whole number or one or two decimal

places
- Write decimals in order of size
- Extend knowledge of integer powers of 10; recognise the equivalence of 0.1, $\frac{1}{10}$ and 10^{-1}
- Strengthen and extend mental methods of calculation, working with decimals, squares and square roots, and cubes and cube roots
- Multiply and divide integers and decimals by 0.1, 0.01
- Solve problems mentally
- Understand where to position the decimal point by considering equivalent calculations
- Multiply three-digit by two-digit whole numbers; extend to multiplying decimal numbers with one or two decimal places by single-digit whole numbers
- Use efficient written methods for multiplication of integers and decimals, including by decimals such as 0.6 or 0.06
- Recognise that a recurring decimal can be written as a fraction
- Make and justify estimates and approximations of calculations
- Consider if an answer is realistic, and check it by working the problem backwards
- Use rounding to make estimates
- Select from a range of checking methods, including estimating in context and using inverse operations
- Carry out more difficult calculations effectively and efficiently using the function keys of a calculator for sign change, powers, roots and fractions; use brackets and the memory function keys of a calculator
- Enter numbers and interpret the display of a calculator in different contexts (extend to negative numbers, fractions)
- Carry out calculations with more than one step using brackets and the memory
- Use a calculator efficiently and appropriately to perform complex calculations with numbers of any size, knowing not to round during intermediate steps of a calculation

Unit 9 (Geometry and measures 3)
- Know that if two 2-D shapes are congruent, corresponding sides and angles are equal
- Know that translations, rotations and reflections preserve length and angle; map objects on to congruent images
- Identify all the symmetries of 2-D shapes and reflection symmetry in 3-D shapes
- Transform 2-D shapes by more complex combinations of rotations, reflections and translations, for example a reflection, followed by a rotation, reflection in $y = x$, $x = -3$ and rotations about points other than the origin
- Understand the relationship between ratio and proportion
- Solve simple problems about ratio and proportion using informal strategies
- Use proportional reasoning to solve problems; interpret and use ratio in a range of contexts
- Understand and use the language and notation associated with enlargement
- Enlarge 2-D shapes, given a centre of enlargement and a positive integer scale factor
- Enlarge 2-D shapes, given a centre of enlargement and negative integer scale factor, on paper
- Identify the scale factor of an enlargement as the ratio of the lengths of any two corresponding line segments
- Recognise that enlargements preserve angle but not length, and understand the implications of enlargement for perimeter

Unit 10 (Algebra 4)
- Describe the meaning of letters in an expression
- Construct expressions and equations from worded descriptions
- Solve simple linear equations
- Represent equations using area diagrams
- Solve one- and two-step equations where the solutions might be positive, negative or fractions
- Recognise equivalent equations
- Given an equation with x on both sides, generate an equivalent equation which has x on one side only
- Solve an equation with x on both sides
- Write an equation involving brackets
- Solve an equation with brackets on one or both sides, including multiplying a bracket by a negative number
- Substitute values into a formula and use the correct order of operations
- Use a formula and find the value of a variable that is not the subject of the formula
- Change the subject of a formula
- Generalise, using letters for variables
- Write formulae

Unit 11 (Statistics 2)
- Discuss a problem that can be addressed by statistical methods and identify related questions to explore
- Decide which data to collect to answer a question, and the degree of accuracy needed; identify possible sources; consider appropriate sample size
- Discuss how different sets of data relate to the problem; identify possible primary or secondary sources
- Plan how to collect the data; construct two-way tables for recording discrete data
- Gather data from specified secondary sources, including printed tables and lists, and ICT-based sources, including the internet
- Calculate statistics for sets of discrete data: find the mode, median and range; calculate the mean, including from a simple frequency table, using a calculator for a

larger number of items
● Recognise when it is appropriate to use the range, mean, median and mode
● Construct and use stem-and-leaf diagrams
● Interpret tables, graphs and diagrams for discrete data, relating summary statistics and findings to the questions being explored
● Construct graphical representations and identify which are most useful in the context of the problem; including pie charts for categorical data; bar charts and frequency diagrams for discrete data; line graphs for time series

Term Three Objectives
Unit 12 (Number 4)
● Calculate fractions of quantities
● Use efficient methods to add, subtract, multiply and divide fractions, interpret division as the inverse of multiplication; cancel common factors before multiplying or dividing
● Make and justify estimates and approximations of calculations
● Understand and use the laws of arithmetic and inverse operations in the context of integers and fractions
● Multiply and divide integers and decimals by 0.1, 0.01
● Understand the effects of multiplying and dividing by numbers between 0 and 1
● Strengthen and extend mental methods of calculation, working with decimals, fractions, percentages, squares and square roots, and cubes and cube roots
● Understand the order of operations, including powers
● Use efficient written methods to add and subtract integers and decimals of any size; multiply by decimals; divide by decimals by transforming to division by an integer
● Know where to position the decimal point by considering equivalent calculations
● Convert one metric unit to another, eg grams to kilograms
● Choose and use units of measurement to measure, estimate, calculate and solve problems in a range of contexts; know rough metric equivalents of imperial measures in common use, such as feet, miles, pounds and pints
● Convert between area measures (eg mm^2 to cm^2, cm^2 to m^2, and vice versa)
● Enter numbers and interpret the display in different contexts (money, metric measures, time)
● Use a calculator efficiently and appropriately; use the function keys for fractions
Unit 13 (Algebra 5)
● Read and plot coordinates in all four quadrants
● Generate coordinate pairs that satisfy a linear rule
● Recognise linear functions where y is given implicitly in terms of x
● Rearrange linear functions into the form $y = mx + c$
● Understand what it means for two variables to be in direct proportion
● Use graphs to solve problems involving direct proportion
● Recognise straight-line graphs parallel to the x-axis or $y$axis
● Understand that if variables are in direct proportion, their ratios are equal
● Use algebra to solve problems involving variables in direct proportion
● Construct and solve linear equations with integer coefficients and where the unknowns may be on both sides
● Solve simple equations involving x^2
● Construct and solve equations that involve brackets and division
● Explore alternative ways of solving equations
● Solve problems involving number and algebra
● Break complex problems into simpler steps
● Choose and use efficient techniques for algebraic manipulation
● Use trial and improvement methods where a more efficient method is not obvious
Unit 14 (Solving problems) ● Use proportional reasoning to solve problems; interpret and use ratio in a range of contexts
● Apply understanding of the relationship between ratio and proportion; simplify ratios, including those expressed in different units
● Divide a quantity into two or more parts in a given ratio
● Use logical argument to interpret the mathematics in a given context or to establish the truth of a statement; give accurate solutions appropriate to the context or problem
● Understand the significance of a counter-example
● Solve more demanding problems and investigate in a range of contexts: number and measures
● Choose and use units of measurement to measure, estimate, calculate and solve problems in a range of contexts
● Identify the mathematical features of a context or problem; select appropriate procedures and tools
● Break down substantial tasks to make them more manageable; represent problems and synthesise information in algebraic, geometrical or graphical form

Term Three Objectives

Unit 15 (Geometry and measures 4)
● Use 2-D representations to visualise 3-D shapes and deduce some of their properties
● Know and use geometric properties of cuboids and shapes made from cuboids
● Visualise and use 2-D representations of 3-D objects; analyse 3-D shapes through 2-D projections, including plans and elevations
● Begin to use plans and elevations
● Use ruler and protractor to construct simple nets of 3-D shapes, eg cuboid, regular tetrahedron, square-based pyramid, triangular prism
● Use a ruler and protractor to construct a triangle, given two sides and the included angle (SAS) or two angles and the included side (ASA)
● Use straight edge and compass to construct a triangle, given three sides (SSS) or right angle, hypotenuse and side (RHS)
● Make simple accurate scale drawings; use and interpret maps and scale drawings
● Use a ruler and protractor to measure and draw lines to the nearest millimetre and draw angles to the nearest degree
● Use bearings to specify direction and solve problems, including making simple scale drawings
● Use conventions and notation for 2-D coordinates in all four quadrants; find coordinates of points determined by geometric information
● Given the coordinates of points A and B, find the mid-point of the line segment AB
● Find loci by reasoning and produce shapes and paths
● Solve problems: shape, space and measures
● Use logical argument

Term Three Objectives
Unit 16 (Statistics 3)
● Decide which data to collect to answer a question, and the degree of accuracy needed; identify possible sources; consider appropriate sample size
● Design a data collection sheet or questionnaire to use in a simple survey; construct frequency tables for gathering discrete or continuous data, grouped where appropriate in equal class intervals
● Design a survey or experiment to capture the necessary data from one or more sources; design, trial and if necessary refine data collection sheets; construct tables for gathering large discrete and continuous sets of raw data, choosing suitable class intervals
● Calculate statistics for sets of data, including with a calculator; recognise when it is appropriate to use the range, mean, median and mode and, for grouped data, the modal class
● Calculate a mean using an assumed mean
● Collect data using a suitable method (e.g. observation, controlled experiment, data logging using ICT, questionnaire)
● Interpret tables, graphs and diagrams for discrete and continuous data, relating summary statistics and findings to the questions being explored
● Select, construct and modify, on paper and using ICT, suitable graphical representation to progress an enquiry, and identify the key features present in the data; including bar charts and frequency diagrams for discrete data, pie charts for categorical data and simple scatter graphs
● Compare two or more distributions and make inferences, using the shape of the distributions, the range of data and appropriate statistics
● Write a short report of a statistical enquiry, including appropriate diagrams, graphs and charts, using ICT as appropriate; justify the choice of presentation and the methods used
● Compare experimental and theoretical probabilities in a range of contexts; appreciate the difference between mathematical explanation and experimental evidence

ASSESSMENT

Each unit is assessed by a **Unit Test and Mark Scheme** provided by Edexcel in order to judge the progress made by learners. There will be a formal **Progress Test and Mark Scheme** provided by Edexcel at the end of Year 8. This will be internally assessed by the school using the Mark Scheme provided.

Mathematics Scheme of Work Year 9 – Overview
Term One Objectives
Unit 1 (Algebra 1–2)
● Generate terms of a linear sequence using term-to-term Rules
● Generate terms of a linear sequence using position-toterm definitions
● Generate terms of a quadratic sequence given a rule for finding each term from the position
● Use linear expressions to describe the nth term in an arithmetic sequence

● Use the pattern in the first difference to find the nth term in an arithmetic sequence
● Justify the form of the nth term by reference to the structure of the context in which it is generated
● Find any term in a quadratic sequence given the rule for the nth term
● Find the nth term of a quadratic sequence where the rule of the form $T(n) = an^2$, $T(n) = an^2 \pm b$ or $T(n) = an^2 \pm bn \pm c$
● Justify the nth term of a quadratic sequence
● Explore fraction sequences
● Explore spatial patterns
● Generate terms and sequences from spatial patterns
● Find the general term for a spatial pattern
● Find the sum of a series generated from spatial patterns
● Express functions in symbols
● Draw mapping diagrams for algebraic expressions
● Find the inverse of linear functions
● Draw graphs of linear functions
● Know the properties of quadratics
● Plot a simple straight-line graph
● Discuss and interpret line graphs and graphs of functions from a range of sources
● Draw and use graphs to solve distance–time problems
● Calculate average speed from a travel graph

Unit 2 (Algebra 3)
● Describe what letters stand for in formulae and functions
● Distinguish between expressions, equations and identities
● Expand brackets and simplify expressions
● Write expressions
● Construct and solve equations with x on one side only in order to solve problems
● Construct and solve equations with a positive number of x on both sides in order to solve simple practical problems
● Identify equivalent equations
● Solve equations with x on both sides and which include negative signs and brackets on one or both sides
● Use ICT and trial and improvement to solve quadratic and cubic equations
● Draw a straight-line graph
● Find the point of intersection of two straight-line graphs and link this to the solution to simultaneous equations
● Recognise that two parallel lines have no point of intersection
● Solve simultaneous equations with two variables algebraically

Unit 3 (Number 1)
● Order decimals; order fractions by writing them with a common denominator or by converting them to decimals
● Express a smaller whole number as a fraction of a larger one
● Use division to convert a fraction to a decimal
● Understand and use the rules of arithmetic and inverse operations in the context of fractions; use efficient methods to add, subtract, multiply and divide fractions, interpreting division as an inverse of multiplication; cancel common factors before multiplying or dividing
● Add simple algebraic fractions
● Recognise and use reciprocals; understand 'reciprocal' as a multiplicative inverse; know that any number multiplied by its reciprocal is 1
● Understand the effects of multiplying and dividing by numbers between 0 and 1
● Express one given number as a percentage of another
● Calculate percentages and find the outcome of a given percentage increase or decrease; solve problems involving percentage changes
● Recognise when fractions or percentages are needed to compare proportions
● Use a multiplier raised to a power to represent and solve problems involving repeated proportional change, for example compound interest
● Use proportional reasoning to solve problems, by making the correct number 100% or a whole
● Understand and use proportionality and calculate the result of any proportional change using multiplicative methods
● Divide a quantity into two or more parts in a given ratio; compare two ratios; interpret and use ratio in a range of contexts, including solving word problems
● Understand and use the effects of enlargement on areas and volumes of shapes and solids
● Understand the order of precedence of operations
● Extend mental methods of calculation, working with decimals, fractions, percentages, powers and roots; solve word problems mentally
● Use known facts to derive unknown facts
● Multiply and divide integers and decimals by 0.1, 0.01
● Use rounding to make estimates; round to a given number of significant figures

● Make and justify estimates and approximations of calculations by rounding numbers to one significant figure and multiplying or dividing mentally

Unit 4 (Geometry and measures 1)
● Distinguish between conventions, definitions and derived properties, and distinguish between practical demonstration and proof
● Identify alternate angles and corresponding angles
● Understand a proof that the sum of the angles of a triangle is 180° and of a quadrilateral is 360°; the exterior angle of a triangle is equal to the sum of the two interior opposite angles
● Solve geometrical problems using side and angle properties of special triangles and quadrilaterals
● Classify quadrilaterals by their geometric properties
● Explain how to find, calculate and use: the sums of the interior and exterior angles of quadrilaterals, pentagons and hexagons, the interior and exterior angles of regular polygons
● Solve problems using properties of angles, of parallel and intersecting lines, and of triangles and other polygons, justifying inferences and explaining reasoning (diagrams and text)
● Know, understand and apply Pythagoras' theorem
● Understand and apply Pythagoras' theorem to find one of the two shorter sides in a right-angled triangle
● Use a straight edge and a pair of compasses to construct a triangle, given right angle, hypotenuse and side (RHS)
● Draw triangles accurately using a ruler and protractor; construct them using compasses and a ruler
● Know from experience of constructing triangles, that those given SSS, SAS, ASA or RHS are unique, but triangles given SSA or AAA are not
● Know the definition of a circle, and the names of its parts; explain why inscribed regular polygons can be constructed by equal divisions of a circle
● Know that the tangent at any point on a circle is perpendicular to the radius at that point; explain why the perpendicular from the centre to the chord bisects the chord

Unit 5 (Statistics 1)
● Discuss how to relate data to a problem; identify possible sources, including primary and secondary sources; identify possible sources of bias
● Construct tables for large discrete and continuous sets of raw data, choosing suitable class intervals
● Design and use two-way tables
● Calculate statistics, including with a calculator; recognize when it is appropriate to use the range, mean, median and mode
● Find summary values that represent the raw data, and select the statistics most appropriate to the problem
● Construct and use stem-and-leaf diagrams
● Compare two or more distributions and make inferences, using the shape of the distributions, the range of data and appropriate statistics
● Select, draw and modify, on paper and using ICT, suitable graphical representation to progress an enquiry, including line graphs for time series and frequency polygons; identify key features presented in the data
● Interpret tables, graphs and diagrams for both discrete and continuous data, and draw inferences that relate to the problem being discussed; relate summarised data to the questions being explored
● Draw bar charts and frequency diagrams for discrete and continuous data

Term Two Objectives
Unit 6 (Geometry and measures 2)
● Use units of measurement to calculate, estimate, measure and solve problems
● Convert between area measures and volume measures
● Calculate upper and lower bounds
● Recognise that measurements given to the nearest whole unit may be inaccurate by up to half a unit in either direction
● Understand and use measures of speed (and other compound measures such as density and pressure) to solve problems
● Calculate upper and lower bounds of compound measures
● Know and use the formulae for the circumference and area of a circle
● Know and use the formulae for length of arcs and area of sectors of circles
● Find areas of compound shapes
● Deduce and use the formula for the area of a triangle, parallelogram and trapezium
● Know and use the formula for the volume of a cuboid; calculate volumes and surface area of cuboids and shapes made from cuboids and prisms
● Calculate lengths, areas and volumes in prisms, including cylinders

Unit 7 (Number 2)
● Round decimals to the nearest whole number or to one or two decimal places; round to a given number of significant figures; use rounding to make estimates and to give solutions to problems to an appropriate degree of accuracy
● Know that a recurring decimal can be written as an exact fraction
● Distinguish between fractions with denominators that have only prime factors 2 or 5 (terminating decimals), and other fractions (recurring decimals)

● Use an algebraic method to convert a recurring decimal to a fraction
● Use the function keys on a calculator for fractions, powers and roots; use the brackets and the memory function; use an extended range of function keys, including the reciprocal
● Recognise and use reciprocals; know that any number multiplied by its reciprocal is 1
● Understand upper and lower bounds
● Use standard index form, expressed in conventional notation and on a calculator display; know how to enter numbers in standard index form
● Calculate with standard index form, using a calculator as appropriate
● Use efficient written methods to add and subtract integers and decimals
● Multiply by decimals; divide by decimals by transforming to division by an integer
● Use a calculator efficiently and appropriately to perform complex calculations with numbers of any size, knowing not to round during intermediate steps of a calculation
● Use known facts to derive unknown facts
● Break down substantial tasks to make them more manageable
● Represent problems through moving between algebraic, geometrical or graphical forms of the problem in order to gain a different perspective on the problem
● Make accurate mathematical diagrams, graphs and constructions on paper and using ICT
● Manipulate numbers, algebraic expressions and equations, and apply routine algorithms
● Record methods, solutions and conclusions

Unit 8 (Algebra 4)
● Find the HCF and LCM of three numbers less than 100
● Find the prime factor decomposition of any whole number; use the prime factor decomposition to find the HCF and LCM of a group of numbers
● Solve problems using factors and multiples
● Simplify algebraic fractions such as *bd*
ad bc
d
c
b
a $\square$
$\square$ $\square$

● Find square roots and cube roots using factors
● Know and use the index laws for multiplication and division of positive powers; know and use the index law for raising a power to another power; know that any number or variable to the power zero is 1
● Apply index laws to negative and fractional powers of numbers and variables; know that when a number is raised to a negative power it is smaller than 1
● Plot graphs of linear functions in four quadrants
● Find out if a point lies on a straight line
● Know that all linear functions in y and x can be rearranged in the form $y = mx + c$; understand the meaning of m and c in $y = mx + c$
● Explain the difference between straight lines of the form $y = mx + c$ when the gradient m or intercept c changes

Term Two Objectives
● Compare the properties of straight-line graphs of the form $y = mx + c$ without drawing the graphs
● Know that for $y = mx + c$, increasing the value of x by 1 increases y by m
● Work out the gradient of a straight-line graph
● Identify parallel and perpendicular lines on a graph; know that parallel lines have the same gradient; know the gradient of a line perpendicular to $y = mx + c$
● Construct a table of values, including negative numbers, for a quadratic function and draw its graphs; construct a table of values, including negative numbers, for a cubic function of the form $y = ax_3$ and draw its graph
● Recognise graphs of the form $y = ax_2 + b$ and $y = x_3$ and know their properties
● Create functions to model real-life situations; plot and draw graphs for real-life situations
● Interpret linear and non-linear line graphs
● Sketch a line graph for the approximate relationship between two variables
● Interpret graphs including points of intersection of pairs of lines

Unit 9 (Statistics 2)
● Talk about the likelihood of different outcomes occurring
● Work out if a game is fair
● Identify mutually exclusive outcomes of an experiment
● Write the probability of event n as P(n)
● Know that the sum of the probabilities of all the mutually exclusive outcomes is 1
● Calculate probabilities using the fact that the sum of mutually exclusive probabilities is 1

- Draw and use tree diagrams
- Use probabilities from experimental data to predict outcomes
- Understand relative frequency
- Use relative frequency to compare experiments
- Plot and use relative frequency diagrams

Unit 10
(Geometry and measures 3)
- Distinguish between practical demonstration and proof
- Understand congruence
- Apply the conditions SSS, SAS, ASA or RHS to establish the congruence of triangles
- Know that if two 2-D shapes are similar, corresponding angles are equal and corresponding sides are in the same ratio
- Transform 2-D shapes by combinations of translations, rotations and reflections
- Know that translations, rotations and reflections preserve length and angle, and map objects onto congruent images
- Draw diagrams to scale
- Use and interpret maps using proper map scales
- Use and interpret scale drawings in a range of contexts
- Given the coordinates of points A and B, find the mid-point of the line segment AB
- Recognise that enlargements preserve angle but not length
- Use proportional reasoning to solve a problem; interpret and use ratio in a range of contexts
- Use sine, cosine and tangent in right-angled triangles to solve problems in two dimensions

Term Three Objectives
Unit 11 (Algebra 5)
- Simplify expressions by multiplying out single brackets and collecting like terms
- Factorise expressions involving a single bracket
- Multiply out double brackets
- Use the difference of two squares to do mental calculations
- Factorise a quadratic expression
- Use factorisation to simplify algebraic fractions
- Substitute integers into formulae and use the correct order of operations
- Write expressions and construct formulae
- Use a formula and find the value of a letter which is not the subject of a formula
- Change the subject of a formula
- Understand inequality signs
- Identify and represent inequalities on a number line
- Solve inequalities
- Show inequalities graphically and link to practical problems

Term Three Objectives
Unit 12 (Solving problems)
- Pose questions and make convincing arguments to justify generalisations or solutions; recognise the impact of constraints or assumptions
- Use a range of forms to communicate findings effectively to different audiences
- Work through the entire data handling cycle to explore relationships within bivariate data
- Break down substantial tasks to make them more manageable
- Calculate accurately, selecting mental methods or calculating devices as appropriate
- Justify and explain solutions to problems involving an unfamiliar context
- Make progress by exploring mathematical tasks, developing and following alternative approaches; examine and extend generalisations
- Produce simple proofs
- Generate fuller solutions by presenting a concise, reasoned argument using symbols, diagrams, graphs and related explanations
- Solve problems using properties of angles, of parallel and intersecting lines, and of triangles and other polygons, justifying inferences and explaining reasoning with diagrams and text
- Use graphs and set up equations to solve simple problems involving direct proportion; use algebraic methods to solve problems involving direct proportion; relate algebraic solutions to graphs of the equations
- Understand and use proportionality and calculate the result of any proportional change using multiplicative methods
- Use a multiplier raised to a power to represent and solve problems involving repeated proportional change, for example, compound interest
- Represent problems and synthesise information in algebraic, geometrical or graphical form; move from one form to another to gain a different perspective on the problem; compare and evaluate representations
- Use connections with related contexts to improve the analysis of a situation

● Plot the graphs of linear functions, where *y* is given explicitly in terms of *x* and where *y* is given implicitly in terms of *x*
● Explore ways of constructing models of real-life situations by drawing graphs and constructing algebraic equations and inequalities

Term Three Objectives
Unit 13 (Statistics 3
 ● Discuss how data relates to a problem; identify possible sources, including primary and secondary sources
● Identify possible sources of bias
● Identify bias in questionnaires
● Estimate the mean and median of a large set of grouped data
● Construct cumulative frequency tables
● Construct cumulative frequency charts
● Estimate the median, upper and lower quartiles and interquartile range of a set of grouped data using a cumulative frequency chart
● Select, construct and modify suitable graphical representation to progress an enquiry, including scatter graphs to develop further understanding of correlation; identify key features presented in the data
● Identify misleading graphs and statistics
● Interpret graphs and charts, drawing conclusions by using a variety of statistical measures
● Recognise the limitations of the conclusions drawn from data interpretation
● Compare two distributions using appropriate statistics
● Compare two distributions using the shape of the distributions
Unit 14
(Geometry and measures 4)
● Solve geometrical problems using side and angle properties of equilateral, isosceles and right-angled triangles and special quadrilaterals; explaining reasoning with diagrams and text
● Understand and apply Pythagoras' theorem
● Solve problems using properties of angles, parallel and intersecting lines, and of triangles and other polygons, justifying inferences and explaining reasoning with diagrams and text
● Visualise and use 2-D representations of 3-D objects, including plans and elevations
● Analyse 3-D shapes through 2-D projections, including plans and elevations
● Use and interpret maps and scale drawings
● Know and use the formula for the volume of a cuboid; calculate volumes and surface areas of cuboids and shapes made from cuboids
● Calculate the surface area and volume of prisms
● Calculate lengths, areas and volumes in prisms, including cylinders
● Begin to use sine, cosine and tangent in right-angled triangles to solve problems in two dimensions

Term Three Objectives
Unit 15 (Statistics 4)
● Use the vocabulary of probability in interpreting results involving uncertainty and prediction
● Find and record all the possible mutually exclusive outcomes for single and two successive events in a systematic way using diagrams and tables
● Identify all the mutually exclusive outcomes of an experiment; know that the sum of mutually exclusive outcomes is 1 and use this when solving problems
● Estimate probabilities from experimental data
● Understand relative frequency as an estimate of probability and use this to compare outcomes of experiments
● Draw tree diagrams of complex independent events
● Draw tree diagrams for events where the probability of a second event depends on the outcome of the first event
● Compare experimental and theoretical probabilities in a range of contexts
● Appreciate the difference between mathematical explanation and experimental evidence
● Solve problems involving probability
● Interpret results involving uncertainty and prediction

ASSESSMENT

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LOWER SECONDARY SCIENCE SPECIFICATION

Science Scheme of Work – Year 7 Overview
Term One Objectives
Unit 1 (Tissues and transplants)
● Describe a range of organ transplants, and how they can save lives
● Explain why some people may not want to have an organ transplant
● Describe how evidence from microscopes has changed theories about what organisms are made from, and identify some jobs that require a knowledge of cells and organs
● Be able to use a microscope to see cells clearly, and prepare a slide safely
● Calculate microscope magnifications and draw observations to a scale
● Be able to use a microscope to see cells clearly, and prepare a slide safely
● Describe the differences between animal and plant cells, and explain the functions of the parts of cells
● Describe all seven life processes
● Explain how some cells are specialised to carry out certain functions
● Describe what happens in, and the purpose of, cell division
● Describe the functions of the main organs in plants and humans
● Identify the variables in an investigation, and plan how to control them, but also recognise that some experiments do not involve fair tests
● Be able to make predictions and present results as drawings, tables or charts

Unit 2 (Sex and science)
● Develop understanding of human reproduction and consider how offspring are protected and nurtured
● Consider and compare reproductive patterns in other animals with those in humans
● Develop knowledge about human reproduction, growth and the menstrual cycle
● Consider sample size in biological investigations and present data in bar charts and graphs
Unit 3 (Ecology matters)
 ● Know how habitats can vary and how plants and animals are adapted to live in a particular habitat
● Know how plants and animals interact with their environment and with each other, including feeding relationships
● Consider the importance of sample size
● Make measurements of environmental changes and interpret these

Term One Objectives
Unit 4 (Classified)
● Explore variation within and between species and investigate patterns of variation in living things and ways of representing and explaining the occurrence of variations
● Consider why classification is important
● Make qualitative observations and record these in a variety of ways
● Investigate variation between individuals of the same species using an appropriate sample size and draw conclusions using scientific language.

Term Two Objectives
Unit 5 (Acids and alkalis)
● Recognise that different people will have different views on the development of an industrial site
● Recognise hazard warning symbols and act accordingly (maybe using secondary sources to find out the dangers)
● Describe how to lessen the risks of working with acids and alkalis
● Link the pH of an acid or alkali to its hazards
● Describe differences between acids and alkalis
● List some common uses of acids and alkalis
● Name something that is an acid
● Use a knowledge of acids and alkalis to identify questions that can be investigated and suggest appropriate data to collect
● Explain what happens to pH during neutralisation.
● List some common uses of neutralisation

● Recognise that the modern understanding of acids and alkalis is based on work from many scientists, including Arabic scientists
● Use an indicator to work out if something is acidic, alkaline or neutral
● Be able to classify solutions as acidic, alkaline or neutral using indicator colours and pH values
● Identify relationships in data
● Use a knowledge of acids and alkalis to identify questions that can be investigated and suggest appropriate data to collect
● Explain what happens to pH during neutralisation.
● List some common uses of neutralisation

Term Two Objectives
Unit 6 (Bubbles, bangs and burning)
● Know that chemical change results in new substances that are different from the ones from which they were made, and explore some simple chemical reactions including those of acid and metal
● Identify hydrogen and carbon dioxide as substances made during some of these reactions, and understand that gases are real materials
● Use word equations as shorthand descriptions of some simple chemical reactions
Unit 7 (What a waste!)
● Understand how the particle model can be used to explain differences between solids, liquids and gases
● Explore how experimental evidence relates to theories and models, and how the particle model can be used to the interplay between scientific theories and evidence
● Evaluate whether evidence supports or refutes explanations of phenomena
Unit 8 (Materials from the Earth)
 ● Develop knowledge of dissolving and how the separation of the components of a solution is a revese process and relate this to particle theory
● Begin to distinguish between a 'pure' substance and a mixture, and apply the particle model of solids, liquids and gases in a range of contexts
● Make measurements of temperature and mass and describe and interpret patterns in graphs and chromatograms
Term Three Objectives
Unit 9 (Energy and sustainable living)
● Explain how our personal use of fossil fuels affects others
● Name some fuels used in homes and industry
● Explain what a fuel is and what a fossil fuel is
● Recall the units that energy is measured in
● Explain that fuels transfer energy when they burn
● Explain some ways in which our use of fossil fuels can affect other people in this country and around the world
● Suggest how people can be persuaded to use less fossil fuels
● State some ways in which burning fossil fuels affects the environment
● Present data using tables and bar charts
● Describe how a test is fair
● Obtain reliable evidence by repeating readings
● Evaluate the accuracy of results
● State why it is good to reduce our use of fossil fuels
● Suggest some ways to reduce our use of fossil fuels
● Describe how some renewable energy resources can be used to generate electricity and provide heat
● Describe some of the advantages and disadvantages of renewable energy resources
● Explain why different people need different amounts of food
● Compare the amounts of energy different foods contain
● Calculate the amount of energy transferred using data
● Describe the links between the Sun, energy resources and yourself
● Suggest how technology could change the way we use energy resources
● Describe how some renewable energy resources can be used to generate electricity and provide heat
Unit 10 (Electrical circuits)
 ● Explain the working of electrical circuits using concepts of electric current and energy transfer
● Explain patterns in the measurements of current and voltage, and use the concept of resistance qualitatively
● Construct circuits in which current flow is usefully
controlled
● Consider the hazards of electricity for humans, and plan safe procedures and recognise hazards
Unit 11 (Forces and their effects)
 ● Recognise the origin of friction, air resistance, upthrust and weight and describe situations in which these forces act
● Distinguish between mass and weight
● Use the concept of speed

● Relate forces acting to changes in motion, and identify situations in which forces are balanced and unbalanced
Unit 12 (The Solar System and beyond)
● Explain phenomena such as eclipses and the seasons, using appropriate models.
● Know that planets and satellites are seen by reflected light and that the Sun, as a star, emits light
● Compare the Sun with other stars
● Consider how evidence about the solar system has been collected and interpreted, and use data from secondary sources to answer questions about the solar system and the stars

ASSESSMENT

Each unit is assessed by a **Unit Test and Mark Scheme** provided by Edexcel in order to judge the progress made by learners. There will be a formal **Progress Test and Mark Scheme** provided by Edexcel at the end of Year 7. This will be internally assessed by the school using the Mark Scheme provided.

Science Scheme of Work – Year 8 Overview
Term One Objectives
Unit 1 (Food, glorious food!)
● Know that different foods can be combined to produce a balanced diet
● Know how food is broken down by digestion so it can be used by the body, for energy, growth and repair
● Use a model to explore digestion, and use chemical tests
to identify food types
Unit 2 (Going for gold)
● Understand how cells are supplied with the materials they need for respiration
● Know that cells in animals and plants release energy by the process of respiration
● Consider how to deal with factors that cannot be controlled when working with living materials
Unit 3 (Doctors and diseases)
● Know that bacteria, some fungi and viruses are classified as micro-organisms
● Identify some hazards when working with microbes, and explain how risks are controlled in practical work involving microbes
● Describe how microbes are used in the production of some foods and drinks
● Recall the names of some of the diseases caused by certain microbes
● Recall some ways in which microbes can be spread
● Describe how our knowledge of disease transmission has increased with increasing knowledge about microbes, and how new scientific knowledge (eg about the causes of disease, hygiene) alters people's behaviour
● Describe the body's main methods of defence against disease-causing microbes
● Recognise how a theory is used to make predictions that are then tested
● Draw conclusions from first-hand and secondary sources and link them to scientific facts
● Explain how immunisation is a way of protecting us from infectious diseases
● Recall that antibiotics are only effective against bacteria and not viruses
Unit 4 (The way of the dodo)
● Know how living things within a community influence each other and are affected by the environment
● Model consequences of environmental changes within a habitat
● Collect, present and interpret data and use this to make predictions
● Undertake fieldwork to collect information about organisms within a habitat

Term Two Objectives
Unit 5 (In the drink)
● Understand that a huge range of materials is made from a relatively small number of elements, and use the particle model to describe what happens when elements combine
● Know that each element is only composed of one sort of atom
● Explore the characteristics of some elements
● Model differences between particles in elements and nonelements
Unit 6 (Materials and recycling)
● Recall the names of at least three materials that can be recycled
● Sort materials into groups based on observable properties
● Give a logical and coherent argument in a debate on the development of a recycling facility

- Explain how the periodic table is organised
- Represent elements using chemical symbols
- Recall the names of some metals
- Recall that there are only a small number of elements and state some of their names
- Understand that the periodic table is used to classify elements
- Identify some elements whose properties do not fit the general patterns of the periodic table
- Know the difference between chemical symbols for elements and compounds
- Explain that when atoms of different elements combine, compounds are made
- Name a variety of common compounds using scientific terminology
- Work out a chemical formula from a molecular diagram, and vice versa

Unit 7 (All that glitters)
- Know that rock texture is one of the key characteristics of different rock types
- Understand the processes of weathering, erosion, transportation and sedimentation
- Consider how evidence from sedimentary layers and from fossils has led to changes in ideas about the development of the Earth
- Consider and frame questions to be investigated

Term Two Objectives
Unit 8 (Explaining the Earth)
- Describe the major rock-forming processes, and how these are linked by the rock cycle
- Use the concept of rock texture as one of the key characteristics of igneous, sedimentary and metamorphic rocks
- Investigate a technique for comparing the composition of limestones, evaluating different approaches
- Explore differences between igneous rocks using both first-hand and secondary data

Term Three Objectives
Unit 9 (Heat transfers)
- Explain the difference between heat (as energy) and temperature
- Understand the mechanisms of heat transfer: conduction, convection and radiation, and apply this to familiar contexts
- Explain conduction, convection and change of state, using the particle model
- Investigate the effectiveness of different forms of insulation, controlling relevant variables

Unit 10 (On the move)
- Describe the concepts of a magnetic field, a permanent magnet and an electromagnet, and a range of applications
- Explore factors affecting the strength of an electromagnet, controlling relevant variables and evaluating the limitations of the data collected
- Explain the working of a number of devices that use magnets and electromagnets

Unit 11 (Light fantastic)
- Recall that light travels at very high speed in straight lines
- Explain how shadows are made
- Explain some of the evidence to support the idea that light takes time to travel
- Classify materials as opaque, transparent and translucent
- Distinguish between reflectors and absorbers
- Describe how the human eye works
- Know how to draw ray diagrams
- Measure angles of reflected light and identify patterns in the measurements
- Use the law of reflection and knowledge of refraction to predict the formation of images
- Describe how light is refracted at plane surfaces
- Explain how light is refracted
- Explain why a prism splits light into the colours of the spectrum
- Explain how the appearance of coloured objects is affected by coloured lights and coloured filters
- Explain how we can see colours

Unit 12 (Sound and hearing)
- Explain how sound travels through media
- Explain how the ear works, find out about the harmful effects of loud noise and how loud noise can be reduced
- Decide on a suitable question to investigate and on what type of data to collect
- Investigate the loudness of sounds using an appropriate strategy, and identify relevant variables and consider how to control or take account of them

ASSESSMENT
Each unit is assessed by a **Unit Test and Mark Scheme** provided by Edexcel in order to judge the progress made by learners. There will be a formal **Progress Test and Mark Scheme** provided by Edexcel at the end of Year 8. This will be internally assessed by the school using the Mark Scheme provided.

Science Scheme of Work – Year 9 Overview

Term One Objectives
Unit 1 (Science and fiction)
● Describe the role of reproductive organs in sexual reproduction
● Describe the role of the sex cells (gametes) in sexual reproduction
● Describe how genetic information is passed on from parents to offspring in sexual reproduction
● Explain what genetic information is and how it is stored.
● Collect, use and store data in a clear way
● Produce graphs using ICT and identify patterns in them
● Identify and describe characteristics that are of benefit or harmful to an organism
● Recall some inherited characteristics and some that are influenced by environmental conditions
● Describe how inherited and environmental factors can affect characteristics
● Recognise that animal breeding has gone on for hundreds of years
● Explain how offspring with particular characteristics can be produced by selective breeding
● Explain how mammals can be cloned
● Explain why certain secondary sources of information have been chosen and use those sources to answer questions
● Describe some ways in which plants can reproduce asexually to produce clones
● Explain how organisms can be genetically modified
● Describe some of the public reaction to introducing genetically modified organisms
● Explain how dominant and recessive alleles cause their effects
● Suggest arguments for and against selective breeding, cloning and genetic modification
Unit 2 (A model career)
● Know how the human respiratory, digestive and circulatory systems interact to maintain activity
● Explain the ways in which diet, exercise, smoking and drugs affect health, and about the functions of the skeleton
● Find out how scientists linked diseases to a lack of specific nutrients
● Consider how the work of different scientists has contributed to a medical advance

Term One Objectives
Unit 3 (On the farm)
● Know that photosynthesis is the key process producing new plant biomass, and that that chlorophyll enables a plant to utilise light in photosynthesis
● Know that the carbon dioxide for photosynthesis comes from the air and that the water is absorbed through the roots
● Understand the importance of photosynthesis to humans and other animals
● Investigate some of the factors influencing the rate of photosynthesis
Unit 4 (Crime scene investigations)
● Understand how management of food production has many implications for other animal and plant populations in the environment
● Develop understanding about factors affecting plant growth
● Consider some of the issues involved in sustainable development of the countryside
● Investigate the effects of fertiliser on plant growth
Term Two Objectives
Unit 5 (Building for the future)
● Compare the properties of metals and non-metals
● Know that different acids react in similar ways with metals, with metal carbonates and with metal oxides, and use word and symbol equations to describe these reactions
● Represent elements by symbols and compounds by formulae
● Devise and evaluate a method for preparing a sample of a specified salt
Unit 6 (Sculpture park)
● Use the particle model (including some ideas about subatomic particles) and ideas about bonding to explain a number of aspects of the reactivity of metals
● Use the particle model to work out symbol equations
● Explain the difference between elements, compounds and mixtures
● Recall how some metals react with oxygen
● Describe some simple ways of preventing corrosion
● Identify patterns in the reactions of different metals, and in the reaction of a particular metal with water
● Explain how some metals react with water
● Use their scientific knowledge to explain some of their results
● Identify many variables in an investigation and plan how to control them
● Explain how some metals react with acids
● Explain how different methods of corrosion protection work
● Identify patterns in the reactions of different metals, and in the reaction of a particular metal with acids
● Explain the need to collect valid and reliable results, being aware of the impact of human error, and the sensitivity and the accuracy of measuring instruments
● Draw and use word equations as part of an explanation

● Use the reactivity series and a particle model to predict and interpret displacement reactions of metals
● Describe familiar uses of metals linked to their properties
● Use evidence to develop ideas of reactivity
● Explain how different pieces of evidence support the idea of the reactivity series
● Link the observational evidence of displacement reaction to the energy transfer and rearrangements of bonds between atoms
● Identify benefits and drawbacks in the use of particular metals

Unit 7 (Cleaning up)
● Know that rocks, soils and building materials have a variety of chemical characteristics
● Understand how chemical weathering alters rocks and building materials over time
● Know how the atmosphere and water resources are affected by natural processes and the activity of humans
● Know how scientists work to monitor the environment
● Understand how evidence for climate and environmental change needs careful interpretation

Unit 8 (Flying materials)
● Explore further ways in which chemical reactions can be used as an energy source, or as a process for making new materials.
● Model chemical reactions as the rearrangement of atoms, and use the model to explain that matter is not lost
● Consider how the particle model and the knowledge of gases helped change earlier ideas about burning

Term Three Objectives
Unit 9 (Buying energy)
● Explore a range of useful energy transfers and transformations
● Understand the concept of voltage with the transfer of energy in a circuit, and investigate the voltage of cells
● Use the principle of conservation of energy to identify ways in which energy is dissipated during transfers
● Measure voltage in circuits, and identify patterns in the measurements of voltage in series circuits and use these to draw conclusions

Unit 10 (Satellites and space)
● Recall some evidence for the shape of the Earth
● State what an artificial satellite is and one use for a satellite.
● Describe some uses of artificial satellites
● Recall that planets and satellites are kept in their orbits by gravity
● Recall that gravity always pulls things towards the centre of the Earth
● Describe how artificial satellites can be used for scientific research
● Explain that an object on Earth has weight because of gravity.
● Recall that gravity is stronger if the objects have more mass
● Recall that gravity is weaker if objects are further apart
● Recall that gravity is not the same everywhere on the Earth and explain how gravity surveys can be used to investigate the structure of the Earth
● Use data to work out the relationships between gravity, mass and distance
● Calculate weights given the strength of gravity and the mass
● Explain why it is important for spacecraft to have as small a mass as possible
● Explain why astronauts appear to be weightless in space
● Describe how gravity helped the formation of the Solar System
● Describe the benefits of gravity-assist trajectories
● Describe different types of orbit and how they are suited to different purposes
● Recognise how forces affect the way in which objects move, and how the overall effects of forces can be calculated
● Consider the advantages and the disadvantages of different ways of exploring the Solar System
● Recall that light is part of the electromagnetic spectrum, and how different parts of the spectrum can provide information about the Solar System and the stars
● Explain refraction and reflection using the wave model for light
● Recall one example of an early model of the Solar System
● Recognise some questions that science cannot yet answer
● Describe some ways the Solar System can be explored
● Describe some evidence showing that a particular theory is incorrect
● Recall that there have been various models of the Solar System, and how and why these have changed
● Explain why the acceptance or rejection of scientific theories may sometimes depend on technological developments
● Describe how astronomy and space science provide evidence of the Solar System and our galaxy
● Explain the role of prediction and testing in the acceptance of models of the Solar System

Unit 11 (Record breakers)
● Understand the relationship between forces (including balanced forces) on an object, and its movement
● Explore the effects of water and air resistance on speed, and how streamlining reduces these effects

● Measure and calculate, with appropriate precision, the speed of objects in a range of situations, and construct and interpret speed-time graphs, describing patterns or relationships

Unit 12 (Dam it!)

● Study pressure on solids and fluids and describe applications of this

● Describe the operation of levers, including examples from the human body, which depend on the turning effect of a force

● Understand the principle of moments

● Investigate balance about a pivot, evaluating strengths and weaknesses in their methods

ASSESSMENT

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ART

YEAR 7   ART CURRICULUM PLAN   2012- 2013

Unit of Work	Observation Drawing	3D Masks	Hundertwasser Painting	3D Claywork	
DRAW	Observation drawing of plants and selected natural objects	Designs for tribal ceremonial masks	Designs inspired by Kandinsky.	Designs for 3D thumb pot using animal images.	
PAINT		Painting techniques using acrylic paint.	Colour mixing. Fine brush work. Painting techniques.	Use of acrylic paint on final dried pot.	
PRINT					
STICK		Attach features to base shape of mask. Use of papier mache techniques.		Clay techniques to attach one piece of clay to another.	
MODEL		Model features to make mask 3D using recycled materials and papier mache		Modelling techniques for use with clay. Coil and slip construction.	
CONSTRUCT		Add features, adapt design and develop techniques of construction.		Assemble individual elements of the pot using taught techniques.	
COLOUR	Use of oil pastels. Colour matching and blending to accurately represent colour.	Add colour to reflect cultural influence.	Bright, vibrant and primary colours. Colour theory/colour wheel.		
LINE	Accurate recording of lines, patterns, detail etc to show form and movement.				
TONE	Use of tonal range for shading to show light, medium and dark.				
TEXTURE		Use of a variety of textures to represent features, decoration and details.		Use of textures to create decorative effects.	
PATT / SHAPE	Accurately record detail of objects/ shape of leaves etc.		Geometric shapes, lines and symmetry. Overlapping shapes.	Using clay tools to create patterns on the surface of the completed pot.	
FORM	Create 3D form using tones and shadows.	3D form – assemble on a totem pole?		3D open form.	

ART HISTORY		African and other cultural masks. Use of masks. Power point presentation?	Kandinsky research. Produce written information. Fact file.		
ICT		Internet for mask research. Printing of researched images to use in designing.	Power point presentation of his work. Internet research and printed images.	Research animal images and design form printed images.	

UNIT NO: TIME:
  1   6-8 weeks
 	
YEAR: TERM:
  7   Autumn
	UNIT TITLE:
	OBSERVATION DRAWING
	Mixed Media
		NATIONAL CURRICULUM
		UNIT OF WORK
		ART DEPARTMENT

SUBJECT FOCUS and ATTAINMENT	1a) c) 2a) b)c) 3a)b⟩ 4a) 5a)c) By the end of the unit you will be able to record and analyse from first hand observation. Use the techniques taught to apply pencil shading, chalk pastel and black ink gel pen successfully to produce a variety of final detailed pieces of work.	
OBJECTIVES and ACTIVITY or TASK	**Lesson objectives** • To observe closely and record accurately in pencil, chalk pastel and black ink gel pen from first hand observation a collection of given objects. • To understand techniques associated with tonal shading, colour mixing/ blending with oil pastels and drawing with black ink gel pens. • Produce a collection of detailed drawings using the techniques and skills they have been taught. **Activity or Task** 1.Demonstrate pencil tonal shading. Intro to different pencils. Pupils to complete tonal strip. 2 .Demo 3D shape and use tonal shading. Solid form/ draw basic form and shade light/dark. 3.Intro other solid forms and add shading to make 3D. 4 & 5 Drawing of selected objects. Accurate detailed drawing. Add tones. 6 Collecting and drawing of natural object using chalk pastel. Colour match/shade 3D form. 7 &8 Demo use of black ink gel pen. Drawing of selected objects using line/shape/pattern/3D form	
EXTENSION ACTIVITIES	Choice of a more complex object to draw. Adding more fine detail to the work. More detailed background that has shadows and changes in light	
VISUAL ELEMENTS	Shape, line, pattern, form, colour, tone	
STIMULUS / RESOURCES	Pencil Sharpeners, paint pots, found natural objects, shells Examples of past pupils work	
MATERIALS	Paper chalk pastels black ink gel pens B 2B 3B 4B pencils sugar paper shells Rubbers water pots Pencil sharpeners. Natural found object	
HOMEWORK	Collection of drawing task worksheets that show use of tonal shading.	
TEACHING METHOD	Talk about observing from first hand. Use of proportions and scale when enlarging drawings. Demonstration of all skills needed to apply media for drawing. Re –enforce vocabulary and use of pencils. Demonstrate techniques of chalk pastels and gel pens. Blending and colour matching the actual object. Emphasise accurate drawing, concentration and close observation. Relate size of object to scale/time/accuracy.	

CRITERIA FOR SUCCESS	1a) record from experience and imagination, to select and record from first hand observation and to explore ideas for different purposes.
	1c) use a variety of methods and approaches to communicate observations, ideas and feelings, and to design and make images and artefacts.
	3b) adapt their work according to their views and describe how they might develop it further.
	5c) using a range of materials and processes, including ICT.
LITERACY and NUMERACY	• Further development of subject specific vocabulary for drawing and chalk pastel blending/techniques.
	Links to proportion, scale, measurement, enlargement of final drawings

NATIONAL CURRICULUM	UNIT OF WORK
	ART DEPARTMENT

UNIT NO: TIME: 8-10 weeks YEAR: TERM: 7 Autumn / Spring	UNIT TITLE: **MASKS**	AREA OF STUDY: **Construction using papier mache and recycled items.**
SUBJECT FOCUS and ATTAINMENT	1b) c) 2a)b) c) 3a) b) 4a) b) c) 5b) c) d) By the end of the unit you will have understood cultural influence on mask designs. You will have explored the properties of papier mache and produced a mask using the influence of other cultures.	
OBJECTIVES and ACTIVITY or TASK	**Lesson objectives** • Study and produce visual and written information about masks from a variety of cultures. • Discussion about how different cultures influence mask design. • Understand the basic design process and use this to design a mask. • Explore and construct a basic mask shape using papier mache/balloon techniques. • Using recycled materials realise a final design. • Use of acrylic paint and painting techniques to paint and then decorate mask. **Activity or Task** 1&2 Intro visual resources and P.P. Discuss masks and their uses. Begin research pages. 3&4 develop design ideas using cultural research. Final design 5. Demo papier mache techniques on a balloon. Begin making basic shape. 6. Continue making basic shape and adding features from design. 7. Complete 3D mask base shape and then cover with final layer of white papier mache. 8.Leave to dry and work on colours of final mask – collect resources for extras to add to mask 9&10. Paint mask using acrylic paint. Add on extra decorations etc. Written evaluation and flow chart of making process.	
EXTENSION ACTIVITIES	• More complex design work. • Make a collage of facial expressions collected from magazines. • More extensive research using a greater variety of resources.	
VISUAL ELEMENTS	Texture, colour, pattern, shape, form.	
STIMULUS / RESOURCES	Collection of posters and postcards of a large variety of masks from other cultures. Laminated images. Photos of past pupils work. Actual cultural masks. Power point presentation of masks.	
MATERIALS	Paper, pencils, coloured pencils, glue, scissors, wallpaper paste, newspaper, balloons, recycled junk, masking tape, acrylic paint, wool, fabric, sequins, felt, googly eyes, accessories to add to final mask.	
HOMEWORK	Develop design ideas either on a design sheet or in their sketchbooks. Collect all visual resources from magazines, cards etc related to masks. Add written information and illustrations and research accessed from the internet etc.	

TEACHING METHOD	Explain unit of work .Discuss uses of masks. Bring in other cultures. Show visual resources. Demonstrate papier mache techniques. Encourage evaluation of work as it progresses and adapt original ideas to suit the media they are using. Imaginative, original creative work.
CRITERIA FOR SUCCESS	1c) collect visual and other information to help them develop their ideas, including using a sketchbook. 2c) use a variety of methods to communicate ideas and feelings, and to design and make images and artefacts. 4b) know about materials and processes used in art, craft and design and how they can be matched to ideas and intentions.
LITERACY and NUMERACY	• Discussion about other cultures and their beliefs and rituals. • Discussion about festivals around the world. • Subject specific vocabulary linked to papier mache, construction and painting. • Evaluation of their own and others work an adapting ideas and designs as their work progresses. Forming and sharing opinions.

NATIONAL CURRICULUM	UNIT OF WORK	
	ART DEPARTMENT	
UNIT NO: TIME: 6-8 weeks YEAR: TERM: 7 Spring/Summer	UNIT TITLE: **HUNDERTWASSER PAINTING**	AREA OF STUDY: **Composition, painting, art history.**
SUBJECT FOCUS and ATTAINMENT	1b) c) 2 b) c) 3a) b) 4a) c) 5 b) By the end of the unit you will have studied the work of Hundertwasser and you will have applied your knowledge to produce a painting in his style. You will have used the techniques taught of colour mixing, tonal shade and application of paint with fine brushes	
OBJECTIVES and ACTIVITY or TASK	**Lesson objectives** • To understand techniques associated with colour mixing and the application of paint with fine brushes. • Study the work of Hundertwasser and know some of the main features of his style. • Produce a painting using powder paint in the style of Hundertwasser – include key features of this style. **Activity or Task** 1. Focus on colour theory. Primary/secondary colours. Demo mixing and painting techniques used to produce a colour wheel. Use of fine brushes etc. 2. Painting of colour wheel. Focus on clear, clean colours, thickness of paint, fine brush use. 3.Demo painting tonal strips. White to primary and primary to black. Paint own tonal strips. 4.Tonal strips primary to secondary then to other primary. 5.Powerpoint and discussion of the work and style of Hundertwasser.Evaluation/key features. 6 & 7 Design and develop compositions that are influenced by his style. Produce final design. 8,9,10,11. paint final design using techniques taught. Focus, fine lines, tones, colour, detail. 12. Mount final work. Produce written evaluation of your work.	
EXTENSION ACTIVITIES	• Painting of longer tonal strips. • More fine detailed composition work • A research project about the life and work of Hundertwasser.	
VISUAL ELEMENTS	Line, space, pattern, shape, tone, colour.	
STIMULUS /	Laminated images of Hundertwasser's work. . Power point presentation. Examples of past pupils work.	

RESOURCES	Colour wheel, tonal strips.
MATERIALS	Pencils, paper, powder paint, thick and fine brushes, water pots, mixing palettes, tissues, blanks of colour wheels, tonal strips, coloured pencil crayons, sketchbooks.
HOMEWORK	Research work and illustrations of the work of Hundertwasser. Produce drawings and design work in their sketchbooks. Individual colour activity worksheets for primary colours, cold and hot colours, colour theory quiz etc.
TEACHING METHOD	Demonstrate painting techniques with fine brushes. Use of tonal range and how to apply thin lines using fine brushes. Negative shapes in composition. Encourage discussion about the work of Hundertwasser. Brainstorm his painting styles – key features. Discuss composition and ideas for painting / designing in his style. Specialist vocabulary.
CRITERIA FOR SUCCESS	1b) question and make thoughtful observations about starting points and select ideas to use in their work. 2b) apply their experience of materials and processes, including drawing, developing their control of tools and techniques. 4a) visual and tactile elements, including colour, pattern and texture,line tone,shape, form and space and how these elements can be combined and organised for different purposes.
LITERACY and NUMERACY	Further develop subject specific vocabulary related to colour, tone ,shape, form. Discussion work about Hundertwasser and forming opinions about his style. Evaluation of their own and others work and adapting, modifying, changing in light of these discussions. Looking at positive and negative shapes in composition.

NATIONAL CURRICULUM	UNIT OF WORK	
	ART DEPARTMENT	
UNIT NO: TIME: 6-8 weeks	UNIT TITLE: **CLAY WORK**	AREA OF STUDY: **Designing, clay construction,**
YEAR: TERM: 7 Summer	**3D Thumb pot Animal** **Container**	**acrylic painting**
SUBJECT FOCUS and ATTAINMENT	**P.O.S. KS2.** 1a) b) c) 2 a) b) c) 3 a) b) 4 a) b) 5 b) c) By the end of the unit you will have completed the design process and used a variety of methods and techniques to construct a 3D thumb pot container in clay.	
OBJECTIVES and ACTIVITY or TASK	**Lesson objectives** • Produce detailed initial designs for a clay container. • Evaluate and adapt design ideas to arrive at a final design. • Analyse a variety of techniques and resources for the construction of the clay container. • Produce a detailed model from their design work and paint it using acrylics. **Activity or Task** 1. Discussion of the unit of work and the techniques to be taught. Review the design process-initial design, development and final design. 2. Initial Design ideas presented in sketchbook. 3+4 Development of design ideas. Demo of clay container construction. Final Design. 5. Construction of basic thumb pot shape. Techniques to smooth surface. 6, 7 Demo adding clay to container for features and detail. 8, 9 Complete clay container, smooth - leave to dry and then fire. 10, 11 Painting of fired work using acrylic paints. 12. Flow chart and written evaluation of final completed work.	
EXTENSION ACTIVITIES	Construction of a more complex container. Add a lid, legs etc. Add more fine painted detail to completed work.	

VISUAL ELEMENTS	**Colour, line, tone, pattern, shape, texture, form**
STIMULUS / RESOURCES	Examples of past pupils work (photographs) Drawings of a variety of styles of containers and animal pictures.
MATERIALS	2B pencils clay water containers trays coloured pencil crayons clay tools acrylic paint plastic bags sketchbook plastic sheets paint brushes tissues
HOMEWORK	Initial designs in colour Complete development work and final designs. Collect images of animals in preparation for painting. Flow chart - How to make a thumb pot container. Written evaluation of the project. Targets for future work.
TEACHING METHOD	Talk about the design process and its development. Presentation of design ideas in sketchbook. Rules of colouring. Demonstrate thumb pot techniques and how to add extra clay to the initial base shape. Modelling clay techniques. Demo application of acrylic paint to clay. Discussion/evaluation of final project work. Target setting.
CRITERIA FOR SUCCESS	1a) record and analyse imaginative and creative ideas using a sketchbook. 1b) discuss and question critically, and select from a range of visual and other information to help them to develop ideas for independent work. 2c) experiment with and select methods and approaches, synthesise observations, ideas and feelings, and design and make images and artefacts. 5b) work on their own on projects in two dimension and on different scales.
LITERACY and NUMERACY	Further development of subject specific vocabulary for designing and construction work in clay. Group and individual work - discussing and evaluating – expressing opinions. Links to proportion, scale, measurement, enlargement, reduction for final construction work.

YEAR 8 ART CURRICULUM PLAN 2012-13

Unit of Work	Artist Reproduction	Kandinsky cushions	3D Hat Sculpture	Observation Drawing	
DRAW	Outline of their area(see unit of work)	Designs inspired by Kandinsky (see unit of work)	Design ideas for hat sculptures	Observation drawing of plants.	
PAINT		Use of fabric paint on calico. Fabric painting techniques.			
PRINT		Basic printing techniques using paper stencil and masking tape.			
STICK	Assembly of all class pieces to make one large group reproduction.	Final design in paper to show colour combinations.	Collage design ideas in sketchbook. Final model.		
MODEL			Construction of 3D hat sculpture. Use of card, mixed media.		
CONSTRUCT	Make enlarged copy of artist's work	Use of hand and sewing machine techniques to secure fabric pieces to	Use of glue gun, staples, sewing techniques .Papier mache.		

		construct the cushion.			
COLOUR	Match accurately with their section and those in the group. Copy original colours.	Use of colour to match Kandinsky's bold use in design		Use of oil pastels. Colour matching and blending to accurately represent colour.	
LINE	Construction of accurate lines from section to section.	Use of straight and curved lines in design.		Accurate recording of lines, patterns, details etc to show form and movement.	
TONE				Use of tonal range for shading. Light/medium and dark.	
TEXTURE		Use of a variety of textured fabrics and accessories to embellish and finish the cushion.	Variety of texture to create interest and effect.		
PATT / SHAPE		Design using Kandinsky's geometric patterns/shapes. Use of symmetry.		Accurate recording of detail of objects/shape of leaves etc.	
FORM		3D completed cushion shape.	3D sculpture forms. Views from angles. Aesthetics.	Create 3D form using tones and shadows.	
ART HISTORY	Power point presentation of Impressionist artist – Paul Cezanne focus.	Research the life and work of Kandinsky – focus on his use of shape.	Headgear and helmets. Hat designers Shilling, Tracey etc. Fashion houses. Royal Ascot.		
ICT	Internet research of Impressionist Art/ Cezanne.	Internet research/printing off images to help with design work.	Power point presentation. Internet for hat images and hat designers.		

NATIONAL CURRICULUM	UNIT OF WORK
	ART DEPARTMENT

UNIT NO: TIME:	UNIT TITLE:	AREA OF STUDY:
1 4 weeks	**ARTIST REPRODUCTION**	**Group work, chalk pastel**
YEAR: TERM:	**(Chalk Pastel)**	**Art history - Cezanne –'Still life**
8 Autumn		**with open drawer.'**

SUBJECT FOCUS and ATTAINMENT	1b) c) 2b) c) 3a) b) 4a) b) c) 5b) At the end of the unit you will have produced an enlarged copy of an artist's work. You will have collaborated with others on a 2D project that has been on a large scale. You should have further developed your control of tools and materials and understood something about the Impressionist Movement and the work of Paul Cezanne.

OBJECTIVES
 	
 and
 	
 ACTIVITY or TASK
	Lesson objectives
	 • Observe closely and draw accurately from a given source what you see.
	    • To understand techniques associated with colour blending/mixing and the application of chalk pastel to the final work.
	    • Study the work of the Impressionist artist Paul Cezanne and know some of the techniques used by artists from this period.
	    • Produce a final piece of group work that is a copy of 'still life with open drawer by Paul Cezanne. Working and collaborating with each other.
	 Activity or Task
	 1. Power point presentation/ introduction to the work of Impressionist artists. Focus on Paul Cezanne and his still life work. Look at 'Still life with open drawer'.
	 2. Introduce group task and importance of working together to produce the final work. Issue individual pieces of whole work. Begin to draw outline from their piece.
	 3. Complete outline and then work with individuals to make sure it fits as a whole.

	4. Work to colour match their piece using skills previously taught with chalk pastels. 5. Check with others and match colours. Begin to apply to final work. 6, 7 & 8 Continue working with others to make sure each piece matches accurately. Evaluate development and adapt so that they fit together accurately. Collaborative group work.
EXTENSION ACTIVITIES	• Issue more able pupils with a more difficult part of the work to reproduce. • More able pupils to work on more than one piece.
VISUAL ELEMENTS	Line, tone, colour, shape, form
STIMULUS / RESOURCES	Power point presentation of the history of Impressionist painting. Examples of previous chalk pastel large reproductions. Images of the work of Paul Cezanne.
MATERIALS	Chalk pastels, 'still life with open drawer' cut into 16 Sugar paper pieces Images of Paul Cezanne's work
HOMEWORK	Research the work of Paul Cezanne – worksheet. Collection of images of his work – like and dislike. Collect a copy of 'still life with open drawer.' Written evaluation of how well they did.
TEACHING METHOD	Emphasise importance of working together as a group. Adapt, refine and develop their work to match with others. Talk about use of colour/detail matching accurately. Negative shapes in composition. Demonstrate chalk pastel blending/colour matching techniques. Encourage discussion about Impressionist painting. Importance of continuous self and peer evaluation.
CRITERIA FOR SUCCESS	2b) apply their experience of materials and processes, including drawing, developing their control of tools and techniques. 3b) adapt their work according to their views and describe how they might develop it further. 5b) working on their own and collaborating with others on projects in two and three dimensions and on different scales.
LITERACY and NUMERACY	• Further develop subject specific vocabulary related to colour, tone looking at, shape, form etc. • Discussion work about Impressionist artists and forming opinions about their style. • Evaluation of their own and others work and adapting, modifying, changing it in light of these discussions. • Looking at positive and negative shapes in composition.

NATIONAL CURRICULUM	UNIT OF WORK **ART DEPARTMENT**	
UNIT NO: TIME: 8-10 weeks. YEAR: TERM: 8 Autumn/Spring	UNIT TITLE: **KANDINSKY CUSHION DESIGN (3D project)**	AREA OF STUDY: **Cut paper design.** **Fabric painting/printing.**
SUBJECT FOCUS and ATTAINMENT	1b) c) 2a) b) c) 3a) b) 4a) b) c) 5b) c) By the end of this project you will have produced a 3D cushion using the style of Kandinsky as the inspiration for your designs. You will be familiar with the design process and the techniques of fabric printing and painting. You will have basic skills in using a sewing machine and hand sewing.	
OBJECTIVES and	**Lesson objectives** • Study the work of Kandinsky and know some of the key features of his style. • Understand the development of a design process. • Record and develop design ideas in a creative and imaginative way.	

ACTIVITY or TASK	• Understand the basic processes involved in using a sewing machine and hand sewing. • Use the techniques taught to fabric paint. **Activity or Task** 1&2. Introduction to the style of Kandinsky. Explanation about unit of work. Discussion about key features. Begin design process in sketchbooks. Focus on geometric shapes / colour. 3&4. Development of design and final design. Work in cut paper. 5&6. Demo of fabric painting and printing techniques. Samples of fabric painting/printing. 7&8. Transfer design onto calico for final cushion using techniques taught. 9&10. Use of sewing machine and hand to embellish and sew cushion together. Make inside.
EXTENSION ACTIVITIES	More detailed design work. More complex printed shapes and the cutting of paper stencils. Embellish a greater amount on the final cushion. More complex stitches for hand sewing.
VISUAL ELEMENTS	Colour, line, texture, pattern, shape, form.
STIMULUS / RESOURCES	Power point of Kandinsky's work. Laminated images of his paintings. Examples of past pupils work.
MATERIALS	Sketchbooks, pencils, coloured pencil crayons, coloured paper, glue, scissors, calico fabric, masking tape, coloured fabric paints, sewing machine, sewing needles, sewing cotton in various colours, felt, buttons, ribbon, tape, white cotton fabric for inner cushion, wadding for cushion.
HOMEWORK	Collection of images from the internet of Kandinsky's work. Design ideas to be worked on at home. Cut paper work to be completed if not finished in class. Flow chart to be completed if not finished in class. Ongoing class work can be worked on at home to progress through the processes more quickly.
TEACHING METHOD	Art history through power point of Kandinsky's work. Discussion about his style and the key elements. Demonstrations of techniques needed to fabric paint, stencil etc. Use of sewing machine and key safety points. Explain the design processes, step by step design work and development. Hand sewing demo.
CRITERIA FOR SUCCESS	1b)question and make thoughtful observations about starting points and select ideas to use in their work. 2a) investigate and combine visual and tactile qualities of materials and processes and to match these qualities to the purpose of the work. 5b) working on their own, and collaborating with others on projects in two and three dimensions and on different scales.
LITERACY and NUMERACY	• Discussion about the work and style of the artist Kandinsky • Subject specific vocabulary linked to making and printing. • Discussion / forming and sharing opinions. Evaluating their own progress.

NATIONAL CURRICULUM	UNIT OF WORK **ART DEPARTMENT**	

UNIT NO: TIME:
            8-10 weeks
YEAR: TERM:
  8   Spring/Summer
	UNIT TITLE:
	SCULPTURAL HAT PROJECT
		AREA OF STUDY:
		3D Construction /Sculpture

SUBJECT FOCUS and ATTAINMENT	**P.O.S.** 1b) c) 2a) b) c) 3 a) b) 4a) b) 5a) b) c) d) By the end of the project you will have used a variety of methods and techniques to design and construct a	

	3D model/sculpture suitable for wearing on your head.
OBJECTIVES and ACTIVITY or TASK	**Lesson objectives** • Analyse a variety of resources, discuss design techniques and produce a variety of suitable solutions. • Produce a collection of detailed design ideas using a variety of media. • Arrive at a solution for construction. • Construct headgear using a variety of media and techniques. **Activity or Task** 1. View PowerPoint of hat designs and designers as a stimulus for discussion/ideas. **2.** Develop design ideas for 3D hat. Sculptural form and shape. 3. Continue development of ideas – final design. List materials needed. Make small 3D model. 4. Make paper patterns as needed for construction of final model. 5.6.7., 8 &9 adapt and refine design. Demonstrate a variety of techniques that may be used to create the desired effect eg. Wire and tissue paper,modroc,papier mache. Construct hat. 10. Complete and photograph final work. Write evaluation based on process and end result.
EXTENSION ACTIVITIES	• Produce collage /photo montage of collection of headgear pictures. • Work on more complex structure for the basis of the hat. • Keep photo diary of work as it progresses.
VISUAL ELEMENTS	Shape, Space , form , Line, texture.
STIMULUS / RESOURCES	Illustrations, postcards, posters of hat designers, photographs from hat exhibition, past pupils work photographed.
MATERIALS	Coloured pencils,card,tape,glue guns, newspaper, paste, scissors, wire and cutters, tissue paper, material, coloured paper, modroc, feathers, beads, sequins etc.
HOMEWORK	Collect pictures of headgear. Work on design ideas. Collect materials together. Complete mock model. Large papier mache work to be done at home.
TEACHING METHOD	Explain overall unit of work .Encourage discussion and look at the works of art by other hat designers. Discuss basic construction methods. Demonstrate useful techniques to create certain effects. Demonstrate safe use of glue guns and cutting knives.
CRITERIA FOR SUCCESS	1b) discuss and question critically and select from a range of visual and other information to help them develop ideas for independent work. 2c) Experiment with and select methods and approaches, synthesis observations, ideas and feelings and design and make artefacts. 3b) Adapt and refine their own work and plan and develop this further, in the light of their own and others evaluations.
LITERACY and NUMERACY	• Discussion and evaluation of initial ideas both in pairs and as a group. • Written evaluation of project design and completed sculpture/hat. • Production of a net for the construction of the hat. • Proportion, scale, enlargement from small model to final object.

NATIONAL CURRICULUM	UNIT OF WORK
	ART DEPARTMENT

| UNIT NO: TIME:
      4 weeks.
YEAR: TERM: | UNIT TITLE:
OBSERVATIONAL
DRAWING (PLANTS) | AREA OF STUDY:
Pencil drawing /
Oil pastel colour. |

8	Summer		

SUBJECT FOCUS and ATTAINMENT	1a) b) c) 2a) b) 3a) b) 4a) 5a) b) By the end of the unit you will be able to record and analyse from first hand observation. Use the techniques taught to apply oil pastel successfully to produce a final large scale piece of work.
OBJECTIVES and ACTIVITY or TASK	**Lesson objectives** • To observe closely and record accurately in pencil from first hand observation a given object. • To understand techniques associated with colour blending and application of oil pastel. • Produce a large scale drawing using the techniques and skills they have been taught. **Activity or Task** 1. Select plant to be drawn. Explain the unit of work and the techniques to be taught. 2. Enlarge and draw in pencil. Observe accurately. Focus on proportion and scale. 3. Demonstrate techniques of applying and blending oil pastels. 4, 5 & 6, Work in oil pastel to complete the drawing. Focus on detail and accuracy of colour. 7 On completion of the plant drawing work on the background using chalk pastel. 8. Mount completed work and write written evaluation of their final work.
EXTENSION ACTIVITIES	Choice of a more complex plant to draw. Adding more fine detail to the work. More detailed background that has shadows and changes in light.
VISUAL ELEMENTS	Shape, line, pattern, form, colour, tone,
STIMULUS / RESOURCES	Plants. Examples of past pupils work.
MATERIALS	Pencils B 2B oil pastels Sugar paper chalk pastels A variety of plants. Glue and backing paper rubber
HOMEWORK	Observation drawings of a variety of plants using pencil, coloured pencil and other mixed media.
TEACHING METHOD	Talk about observing from first hand. Use of proportions and scale when enlarging drawings. Re –enforce vocabulary and use of pencils. Demonstrate techniques of oil pastels. Blending and colour matching the actual plant. Emphasise accurate drawing, concentration and close observation. Relate size of object to scale/time/accuracy. Use of chalk pastels and shadows.
CRITERIA FOR SUCCESS	1a) record and analyse from first hand observations. 2b) apply and extend their experience of a range of materials and processes, including drawing, refining their control of tool and techniques. 5b) work on their own on projects in two dimension and on different scales.
LITERACY and NUMERACY	• Further development of subject specific vocabulary for drawing and oil pastel blending/techniques. • Links to proportion, scale, measurement, enlargement for final drawing.

YEAR 9   ART CURRICULUM PLAN   2012-13

Unit of Work	Watercolour	Observation drawing/ Oilpastel/3Dclay/modroc	Self Portraits	Chalk Pastel	

	Painting			Plant	
DRAW	Light pencil studies of water lilies and Chinese landscapes to show detail.	Detailed observation drawings of selected objects. Designs for Surrealist art.	Drawing of facial features- mixed media .Proportion/scale/detail.	Observation drawing of plant.	
PAINT	Watercolour techniques. Samples of dry/wet wash etc .Fine brush techniques.	Use of acrylic paint for final clay work. Add detail/fine work.	Use of acrylic paint on canvas to complete portrait .Brush techniques.		
PRINT					
STICK					
MODEL		Model clay/modroc to represent chosen object .Hollow shape.Add Surrealist element.			
CONSTRUCT		Use specialist tools and techniques for adding additional details.			
COLOUR	Use of colour to accurately represent the flower or landscape. Thin transparent colour.	Use of oil pastels. Colour matching and blending to accurately represent colour.	Use of bold, bright colours. Contrasting, complementary colours.	Use of chalk pastels. Colour blending and matching to accurately represent colour of plants	
LINE	Use of simple lines/brush strokes to represent detail.	Accurate recording of lines, patterns, detail etc to show form and movement.	Use of line to accurately record detail on face. Proportion and scale.	Accurate recording of lines ,patterns, detail etc to show form and movement.	
TONE	Subtle tones for depth and detail. Tonal scale dark – light.	Use of tonal range for shading. Light/medium/dark.	Use of tone from colour palette.	Use of tonal range for shading. Light/medium/dark.	
TEXTURE		Use of specialist tools to add surface textures to the completed sculpture.			
PATT / SHAPE	Accurately record shape of flowers ,leaves ,landscapes. 3D shapes.	Accurately record detail of object/shape and lettering etc.	Patt/shape to accurately represent Fauvist movement.	Accurately record detail of plant/shapes of leaves etc.	
FORM	Create 3D form using tones and shadows.	Create 3D form using tones and shadows. Claywork/modroc construction.		Create 3D form using tones and shadows.	
ART HISTORY	Power point presentation of Chinese watercolour painting and its origins.	Surrealist artists Salvador Dali and Rene Magritte.	Fauvist Movement. Use of colour/style in portrait era.		
ICT	Power point of painting techniques and examples. Internet research Chinese painting – print images.	Power point of Surrealist Art. Internet to research ideas and print images.	Power point to show style/portraits of period. Internet research and printed images.		

NATIONAL CURRICULUM	UNIT OF WORK	
	ART DEPARTMENT	

UNIT NO: TIME: 4 weeks YEAR: TERM: 9 Autumn	UNIT TITLE: **WATERCOLOUR** **PAINTING**	AREA OF STUD Y: **Painting**
SUBJECT FOCUS and ATTAINMENT	P.O.S. 1 b) c) 2 b) c) 3a) b) 4a) 5d) By the end of the project you will have studied the work of Chinese watercolour painters and you will have applied their style and produced a watercolour painting of your own.	
OBJECTIVES and ACTIVITY or TASK	<u>Lesson objectives</u> • Observe closely and draw accurately from a given source what you see. Look at positive and negative shapes created. • To understand techniques associated with colour mixing and the application of watercolour paint with fine brushes. • Study the work of Chinese watercolour artists and know some of the techniques used by them. • Produce a painting in the style of Chinese watercolour artists – include key features of this style. <u>Activity or Task</u> 1. Look at and discuss the work of Chinese watercolour artists. Line, tone, colour etc. 2. Demonstrate a variety of watercolour painting techniques. Wet to dry, wet to wet etc. 3. & 4. Emphasise use of wash technique for background work. Students practise a variety of techniques with both fine and thicker brushes. Produce samples for sketchbook. 5. Study water lily shape in different stages of opening. Draw and paint these. 6. Discussion about composition and then draw shapes on final paper. 7. Background wash and base colours for shapes of flowers etc. 8. Emphasise use of fine brushes. Add detail to complete the painting.	
EXTENSION ACTIVITIES	• Further studies of other types of flowers. • Group lilies together instead of individually. • Research in detail one individual Chinese watercolour artist.	
VISUAL ELEMENTS	Line, tone, shape, colour, form.	
STIMULUS / RESOURCES	Power point presentation of the history of Chinese watercolour painting. Power point of watercolour painting techniques. Examples of watercolour paintings of water lilies. Images of lilies in different stages of opening.	
MATERIALS	Images of flowers. Power points. Pencils. Fine and thicker brushes. Watercolours. Mixing palettes / water pots. Watercolour paper. Tissues/paper towels for drying brushes	
HOMEWORK	Research the work of Chinese watercolour artists. Produce work in sketch books. Work on composition ideas for painting. Collect samples of painting techniques	
TEACHING METHOD	Talk about use of colour to show depth. Negative shapes in composition. Demonstrate painting techniques with fine brushes. Encourage discussion about Chinese watercolour painting. Brainstorm different techniques used in images they have seen. Discuss composition and main features for painting in the style of the Chinese artists.	
CRITERIA FOR SUCCESS	1a) discuss and question critically and select from a range of visual and other information to help them develop ideas for independent work. 2c) experiment with and select methods and approaches, synthesise observations, ideas and feelings and design and make images. 4c) understand the continuity and change in the purposes and audiences of artists, craftspeople and designers from Western Europe and the wider world.	
LITERACY and NUMERACY	• Further develop subject specific vocabulary related to colour, tone looking at ,shape, form etc. • Discussion work about Chinese artists and forming opinions about their style. • Evaluation of their own and others work and adapting, modifying, changing in light of these discussions. • Looking at positive and negative shapes in composition.	

NATIONAL CURRICULUM	UNIT OF WORK	
	ART DEPARTMENT	

UNIT NO: TIME: 10 weeks YEAR: TERM: 9 Autumn/Spring	UNIT TITLE: **OBSERVATION DRAWING** **Oil pastel and 3D clay or** **modroc work**	AREA OF STUDY: **Drawing, oil pastel, clay or** **modroc work, acrylic painting.** **Art history.**
SUBJECT FOCUS and ATTAINMENT	1a) b) c) 2a) b) c) 3a) b) 4a) 5a) b) c) d) By the end of the unit you will have produced a large scale drawing using the taught techniques of oil pastel. You will also have used a variety of methods and techniques to design and model a 3D surrealist sculpture in clay.	

OBJECTIVES
 	
and
 	
ACTIVITY or TASK
	Lesson objectives
	• Produce a detailed observation drawing of a selected object.
	      • Use taught techniques to apply oil pastel colour to the drawing.
	      • Analyse a variety of resources, discuss ideas and produce a collection of designs for a surreal clay model.
	      • Produce a detailed clay or modroc model from their design work and paint it using acrylics.
	Activity or Task
	1. Select object to be drawn. Explain the unit of work and the techniques to be taught.
	2 &3. Enlarge and draw in pencil. Observe accurately. Focus on proportion and scale.
	4. Demonstrate techniques of applying and blending oil pastels.
	 5 , 6 &7, Work in oil pastel to complete the drawing. Focus on detail and accuracy of colour.
	8 Power point of Surrealist art – focus on Salvador Dali and Rene Magritte. Discussion.
	9&10.Develop own ideas based on selected object to work in clay or modroc.
	11. Construct clay or modroc model. Demo of techniques to add on detail etc.
	12,13& 14 Design work for colour/detail. Painting of fired or modroc work using acrylic paints.	

EXTENSION ACTIVITIES	Construction of a more complex sculpture. Add more fine detail to completed work.	
VISUAL ELEMENTS	Colour, line, tone, pattern, shape, texture, form.	
STIMULUS / RESOURCES	Power point presentation of the work of surrealist artists. Examples of past pupils work. Illustrations of artists work for development of ideas. Selected objects.	
MATERIALS	Paper oil pastel clay tools/modroc 2B Pencils sketchbooks acrylic paint Rubbers clay	
HOMEWORK	Coloured drawing of tube lettering. Internet research for Surrealist Art. Complete design ideas in sketchbook. Final clay or modroc work – draw and colour final design ready for painting.	
TEACHING METHOD	Talk about observing from first hand. Use of proportions and scale when enlarging drawings. Re –enforce vocabulary and use of pencils. Demonstrate techniques of oil pastels. Blending and colour matching the actual object. Emphasise accurate drawing, concentration and close observation. Relate size of object to scale/time/accuracy. Model clay and modroc techniques. Application of acrylic paint to clay or modroc. Discussion/form opinions of artist work- elements of style etc.	
CRITERIA FOR	1a) record and analyse from first hand observations. 1b) discuss and question critically, and select from a range of visual and other information to help them to develop ideas for independent work. 2c) experiment with and select methods and approaches, synthesise observations, ideas and feelings, and	

SUCCESS	design and make images and artefacts. 5b) work on their own on projects in two dimension and on different scales.
LITERACY and NUMERACY	• Further development of subject specific vocabulary for drawing and oil pastel blending/techniques. Links to proportion, scale, measurement, enlargement for final drawing.

NATIONAL CURRICULUM	UNIT OF WORK **ART DEPARTMENT**	
UNIT NO: TIME: 10-12 weeks YEAR: TERM: 9 Spring/Summer	UNIT TITLE: **SELF PORTRAIT**	AREA OF STUDY: **Drawing** **Acrylic paint on canvas**
SUBJECT FOCUS and ATTAINMENT	1a) b) c) 2a) b) 3a) b) 4a) b) 5b) c) d) You will be able to more accurately record and analyse from first hand observation. By the end of the project you will have studied the work of Fauvist painters and you will have applied their style and produced an acrylic painting on canvas of yourself.	
OBJECTIVES and ACTIVITY or TASK	**Lesson objectives** • Observe closely and draw accurately from a given source what you see. Look at positive and negative shapes created. • To understand techniques associated with colour mixing and the application of acrylic paint with brushes on canvas. • Study the work of Fauvist artists and know some of the techniques used by them. • Produce a painting in the style of Fauvist artists – include key features of this style. **Activity or Task** 1. Intro unit of work and do observation drawing of eye to assess input from me. 2. Demo drawing of eye and produce a more accurate detailed drawing. 3 & 4 Intro shading techniques for more effective 3D drawing. Demo nose drawing. 5&6 Continue features drawing e.g. Lips, chin etc. and shade using pencil. 7, 8,9,10. produce self portrait using pencil and mixed media. 11. Power point of Fauvist movement. Key features of style. Discussion work. 12. Copy original self portrait on to canvas and adapt design to style of Fauvists. 13, 14, 15, 16. paint using acrylics on canvas in style and colour of Fauvists.	
EXTENSION ACTIVITIES	Choice of a more complex angle to draw portrait. Adding more fine detail to the work. More detailed background that has shadows and changes in light.	
VISUAL ELEMENTS	Shape, line, pattern, colour, tone	
STIMULUS / RESOURCES	Examples of past pupils work. Laminated drawings of facial features and portrait drawings in mixed media. Power point of Fauvist portrait artists. Laminated images of Fauvist portraits.	
MATERIALS	Images of facial features and portraits.. Power points. Mixed media for drawing Pencils rubber Paper. Acrylic paint . Fine and thicker brushes. Mixing palettes / water pots. Masking tape canvas Tissues/paper towels for drying brushes	
HOMEWORK	Drawings of facial features in both pencil and mixed media. Collection of pictures for collage of portraits / faces. Images of Fauvist artists and their portrait work. Drawn portraits of people in their family using a choice of media.	
TEACHING	Practical demos for drawing features. Shading, 3D and tones. Talk about use of colour to show depth. Negative shapes in composition. Demonstrate painting techniques with acrylic paint on canvas. Encourage	

METHOD	discussion about Fauvist Movement and painting. Brainstorm different techniques used in images they have seen. Discuss composition and main features for painting in the style of the Fauvist artists.
CRITERIA FOR SUCCESS	1a) record and analyse from first hand observations. 1b)discuss and question critically, and select from a range of visual and other information to help them develop ideas for independent work. 2b) apply and extend their experience of a range of materials and processes, including drawing, refining their control of tool and techniques. 3a) analyse and evaluate their own and other's work, express opinions and make reasoned judgements.
LITERACY and NUMERACY	• Further develop subject specific vocabulary related to techniques covered. • Discussion work about Fauvist artists and forming opinions about their style. • Evaluation of their own and others work and adapting in light of what is said. • Looking at positive and negative shapes in composition.

NATIONAL CURRICULUM	UNIT OF WORK
	ART DEPARTMENT

UNIT NO: TIME:
       4 weeks
 YEAR: TERM:
 9   Summer
	UNIT TITLE:
	 LARGE PLANT DRAWINGS
	    Chalk pastel
		AREA OF STUDY:
		 Drawing, enlargement, chalk pastel

SUBJECT FOCUS and ATTAINMENT	1a) 2a) b) 3a) b) 4a) 5b) By the end of the unit you will be able to record and analyse from first hand observation. Use the techniques taught to apply chalk pastel successfully to produce a large final detailed piece of work.	
OBJECTIVES and ACTIVITY or TASK	**Lesson objectives** • To observe closely and record accurately from first hand observation a given object using chalk pastel. • To understand techniques associated with tonal shading, colour mixing/ blending using chalk pastels. • Produce a large scale detailed drawing using the techniques and skills they have been taught. **Activity or Task** 1. Into to sugar paper and chalk pastel. Properties and uses of pastels. Teach techniques of shading, blending, colour matching. 2.Colour match a selected plant. Focus on colour, shape, pattern, tones. 3. Demo enlarging object. Use of fine lines, proportion, scale etc. Size on paper. 4,5,6,7 Enlarge object on paper and colour match accurately background. Closely observe detail, pattern, colour and add to plant. 8. Cut out and double mount final work.	
EXTENSION ACTIVITIES	Choice of plant to include more detailed pattern and colour. Draw a plant in their sketchbook using coloured pencil crayon.	
VISUAL ELEMENTS	Line, tone, shape, pattern, form, colour	
STIMULUS / RESOURCES	Past pupils work Plants.	
MATERIALS	Chalk pastels coloured pencil crayons	

	Sugar paper Sketchbooks
HOMEWORK	Observation drawings of a variety of plants using pencil, coloured pencil and other mixed media.
TEACHING METHOD	Talk about observing from first hand. Use of proportions and scale when enlarging drawings. Demonstration of all skills needed to apply media for drawing. Re –enforce vocabulary and use of pastel. Demonstrate techniques of applying chalk pastels . Blending and colour matching the actual object. Emphasise accurate drawing, concentration and close observation. Relate size of object to scale/time/accuracy.
CRITERIA FOR SUCCESS	1a) record from experience and imagination, to select and record from first hand observation and to explore ideas for different purposes. 2a) investigate and combine visual and tactile qualities of materials and processes and to match these qualities to the purpose of the work. 2b) apply their experience of materials and processes including drawing, developing their control of tools and techniques.
LITERACY and NUMERACY	Further development of subject specific vocabulary for drawing and chalk pastel blending/techniques. Links to proportion, scale, measurement, enlargement of final drawings

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FRENCH LANGUAGE B PROGRAMME

YEAR 7 AND 8

The curriculum is based on the book EXPO 1 for year 7 and EXPO 2 for year 8. (Jon Meier and Gill Ramage)

YEAR 7

TERM 1   Module 1 : C'est parti
                     Unit 1 : bonjour!
                     Unit 2 : dans mon sac
                     Unit 3 : quel âge as-tu ?
                     Unit 4 : bon anniversaire !
                     Unit 5 : en classe
                     Unit 6 : les couleurs

             Module 2 : Famille et copains
                     Unit 1 : frères et sœurs
                     Unit 2 : ma famille
                     Unit 3 : tu as un animal ?
                     Unit 4 : je me présente
                     Unit 5 : portraits
TERM 2   Module 3 : Chez moi

Unit 1 : où habites-tu ?
Unit 2 : ma maison
Unit 3 : ma chambre
Unit 4 : le soir
Unit 5 : quelle heure est-il ?

Module 4 : On va en ville
Unit 1 : au centre –ville
Unit 2 : où est le parc ?
Unit 3 : où es-tu ?
Unit 4 : j'aime bien ça !
Unit 5 : au snack-bar

TERM 3   Module 5 : Ma journée
Unit 1 : le matin
Unit 2 : mes matières
Unit 3 : pourquoi ?
Unit 4 : mon emploi du temps
Unit 5 : après le collège
Module 6 : On s'amuse
Unit 1 : le sport et les jeux
Unit 2 : tu joues d'un instrument ?
Unit 3 : qu'est-ce que tu aimes faire ?
Unit 4 : au centre de loisirs
Unit 5 : vive les vacances !

ASSESSMENT

Students of KS3 (Years 7,8 and 9) are assessed at different levels :

- Throughout any Unit, several quizzes, vocabulary tests and grammar controls are carried out in order to ascertain whether the student has assimilated the material covered in the previous lesson.

- These controls are intended to evaluate t the students' commitment and understanding, on a regular basis.

- At the end of each Unit, students will have to perform varied tasks showing their ability to apply the newly acquired knowledge in the 4 skill areas of the subject :

i)   Comprehension (reading and listening skills)
ii)   Production (writing and speaking)

- These tasks will be assessed according to a mark scheme provided by Edexcel and will judge the progress made by learners to understand and manipulate the language.

- At the end of each school year, a formal Progress Test will be given . The Mark Scheme is provided by Edexcel. This Progress Test will be internally assessed by the school using the Mark Scheme

provided.

<u>YEAR 8</u>

TERM 1   Module 1 : Famille et domicile
                        Unit 1 : mon album de famille
                        Unit 2 : au boulot
                        Unit 3 : où habitent-ils ?
                        Unit 4 : quel temps fait-il ?
                        Unit 5 : une journée dans la vie de…
           Module 2 : Temps libre
                        Unit 1 : le week-end dernier
                        Unit 2 : hier soir
                        Unit 3 : on a regardé la télé
                        Unit 4 : tu es sorti(e) samedi ?
                        Unit 5 : mon week-end
TERM 2   Module 3 : Les sorties
                        Unit 1 : Tu veux sortir ?
                        Unit 2 : désolé(e) , mais…
                        Unit 3 : les vêtements
                        Unit 4 : faire les magasins
                        Unit 5 : la cité de l'Europe
           Module 4 : Manger et boire
                        Unit 1 : bon appétit !
                        Unit 2 : les repas français
                        Unit 3 : on prépare une fête
                        Unit 4 : au marché
                        Unit 5 : au restaurant
TERM 3   Module 5 : Voyage et vacances
                        Unit 1 : les pays
                        Unit 2 : on part…
                        Unit 3 : au centre de vacances
                        Unit 4 : destination Sénégal
                        Unit 5 : voyager en ligne

          Module 6 : Les copains
                        Unit 1 : la page des copains
                        Unit 2 : L'argent de poche
                        Unit 3 : technologie
                        Unit 4 : présent , passé et futur
                        Unit 5 : je voudrais

ASSESSMENT
Students of KS3 (Years 7,8 and 9) are assessed at different levels :

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YEAR 9

First term :

-      **Introductory unit :**
       Talking about holidays – brainstorm revisions : groups of verbs and the present tense

-      **Qu'est-ce que tu as fait ?**
       Reporting past events- Use of present perfect tense

-      **Ca t'intéresse ?**
       Use of present and past tenses – Context of TV, music, cinema, reading

Second term :

-      **L'avenir**
       Simple future tense : formation and use
       Contexts: resolutions- predictions- future plans and future careers – weather forecasts
        Importance of studying languages – Technology of the Future

-      **En bonne santé ?**
       Imperative tense – Direct and indirect pronouns – Reflexive verbs
       About complaints , health problems, visit to doctors and pharmacy , food and healthy eating ,
       Healthy living + other health issues like smoking and teenage obesity

Third term :
-      **Il était une fois ….**
       Formation and use of imperfect tense :
       Primary school and childhood memories
       A whodunit! Narrative in the imperfect and use of relative pronouns
       Comparing life in the past and nowadays
       Use of contrasted past tenses: relating past events in different contexts

Understanding a range of tenses – Narratives about sports and holidays .

- **On y va !**
  Learning about a region of France – Travel arrangements –
  Use of conditional tense: arranging hotel accommodation
  Understanding authentic texts: a visit to an attraction and to a sport event

ASSESSMENT

Students of KS3 (Years 7,8 and 9) are assessed at different levels :

- Throughout any Unit, several quizzes, vocabulary tests and grammar controls are carried out in order to ascertain whether the student has assimilated the material covered in the previous lesson.

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HISTORY

OUTLINE OF THE BES HISTORY PROGRAMME – YEAR 7, 8 AND 9

The History programme offers continuity and breadth, while respecting the required key elements of knowledge, skills and understanding, namely:

- Chronological understanding
- Knowledge and understanding of events, people and changes in the past
- Historical interpretation and historical enquiry
- Organization and communication

According to class ability and time imparted, the curriculum for Years7, 8 and 9 will unfold as follows:

YEAR 7

Unit 1: Introduction to History: what is history?

Students work with a photocopied booklet provided by the teacher.

Unit 2: **Past Societies**: The Roman Empire – Textbook: "Rome the Empire", OUP by Walter Robson.

Important People: Emperor Constantine and Byzance

<u>Unit 3</u>: "*A society in the making*"
The Middle Ages in Britain/Europe**.** Textbook: "Medieval Realms" OUP by Ian Dawson and Paul Watson

<u>Unit 4</u>: "*The Rise and fall of a Civilization*": The Islamic Empire
(Unit 3 and 4: Contrasts and Connections are made between the two civilizations: everyday life, religion, government, art, sciences, military techniques, the Crusades...etc.) Textbook: "Islamic Encounters – 570-1750" Longman.

ASSESSING KS3 HISTORY AND GEOGRAPHY

This is how students are assessed in History and Geography

1.   Assessment is according to the precepts of the KS3 programme of studies Grades are from A* to G.

2.   Students are assessed for their knowledge and understanding, for their application and for the skills involved in the various tasks and projects given in the two subjects.

3.   Assessment in History and Geography takes several forms:

a.   CONTINUOUS ASSESSMENT
It is used regularly, throughout the academic year; it encourages students to learn, understand and practice their skills frequently. Attitudes in and out of class are also part of the continuous assessment. Examples of continuous assessment are: once a week written pieces of Homework, surprise quizzes, oral questioning in class and End of Unit Tests.

b.   EXAMINATIONS
At the end of the year, students sit for the End of the Year Exam which covers the current academic year programme.

c.   RESEARCH REPORTS AND PROJECTS
These are given during the course of the teaching units and are carried out individually or in groups. Their degree of difficulty increases from Year 7 to 9.

d.   CULMINATING PROJECTS
At the end of each academic year, the students carry out a major project that involves all the skills previously learnt during that particular academic year. It can take many forms and it could be a report on a local issue; it might involve surveys, calculations, research, analysis, writing skills, drawing conclusions, etc.

e.   SELF EVALUATION AND REFLECTION
These are an important part of the students' assessment. The students will evaluate their own work and reflect on what the strong points and weaknesses of a particular piece of work are and what could have been done better. The process involves the students actively and develops their thinking skills. Peer assessment is also valued and put into practice.

ASSESSING THE TASKS GIVEN IN GEOGRAPHY & HISTORY

YEAR:
STUDENT'S NAME:

TASK TO BE ASSESSED: ……….. …………………………………………………………………………

DATE DUE:

RUBRIC (*This general rubric will be modified to reflect a task's specific requirements*)

Your mark (or grade) will be according to the following:

Task Description	Needs improvement	Average	Good	Very Good
Good investigation				
Varied sources				
Information relevant				
Good evaluation of information				
Ideas clearly presented				
Ideas clearly analysed				
Logically presented				
Geography/history specific skills				
Written expression: clear, good English, use of specific vocabulary				
Topic is fully covered				
Oral expression: clear, varied, convincing (used only for oral work)				

MARKS

The student will get marks according to the amount allocated to knowledge and understanding, his/her subject skills and the presentation and organization of his/her work.

TEACHER'S GENERAL COMMENTS:

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………………………………………………………………………………………………………

STUDENT'S COMMENTS:

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YEAR 8

Unit 1: "***Cultural changes***"

The Renaissance. Textbook: "The Renaissance" John Murray, series "Discovering the Past"

Unit 2: The Great Discoveries. Teacher based resources.

Unit 4: "***Significant Events***"

The French Revolution **Important People**: N. Bonaparte

Textbook: "Citizen's Minds: the French Revolution" Longman, series: Think through History

ASSESSING KS3 HISTORY AND GEOGRAPHY

This is how students are assessed in History and Geography

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involved in the various tasks and projects given in the two subjects.

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ASSESSING THE TASKS GIVEN IN GEOGRAPHY & HISTORY

YEAR:
STUDENT'S NAME:
TASK TO BE ASSESSED: ……….. ……………………………………………………………………
DATE DUE:
RUBRIC (*This general rubric will be modified to reflect a task's specific requirements*)
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Good investigation				
Varied sources				
Information relevant				
Good evaluation of information				
Ideas clearly presented				
Ideas clearly analysed				
Logically presented				
Geography/history specific skills				

Written expression: clear, good English, use of specific vocabulary				
Topic is fully covered				
Oral expression: clear, varied, convincing (used only for oral work)				

MARKS
The student will get marks according to the amount allocated to knowledge and understanding, his/her subject skills and the presentation and organization of his/her work.

TEACHER'S GENERAL COMMENTS:
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………

STUDENT'S COMMENTS:
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……..…

YEAR 9

Unit 1: The Industrial Revolution. Textbook: "Expansion, trade and Industry" OUP by Jon Cresswell and Peter Laurence. **Important People**: J. Watt

Unit 2:   "*Significant events*": The Russian Revolutions. Resources given by the teacher.

Unit 3:   "*Developments in time"*: the changing role of women in Europe after 1900

Unit 4:   International Relations during the Twentieth Century. Textbook "Modern Minds: the Twentieth Century World" Longman, Jamie Byrom *et al*

ASSESSING KS3 HISTORY AND GEOGRAPHY

This is how students are assessed in History and Geography

1.   Assessment is according to the precepts of the KS3 programme of studies Grades are from A* to G.

2.   Students are assessed for their knowledge and understanding, for their application and for the skills involved in the various tasks and projects given in the two subjects.

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b.   EXAMINATIONS
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At the end of each academic year, the students carry out a major project that involves all the skills previously learnt during that particular academic year. It can take many forms and it could be a report on a local issue; it might involve surveys, calculations, research, analysis, writing skills, drawing conclusions, etc.

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ASSESSING THE TASKS GIVEN IN GEOGRAPHY & HISTORY

YEAR:
STUDENT'S NAME:
TASK TO BE ASSESSED: ……….. …………………………………………………………………
DATE DUE:
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Your mark (or grade) will be according to the following:

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Written expression: clear, good English, use of specific vocabulary				
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TEACHER'S GENERAL COMMENTS:
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………………………………………………………………………………………………………
STUDENT'S COMMENTS:

GEOGRAPHY
THE BES GEOGRAPHY PROGRAMME FOR YEAR 7, 8 AND 9

The whole KS3 programme in Geography is based on a sense of wonder in front of our universe and in particular Planet Earth; it is also based on the awareness that this planet is in danger: every one of us should get involved in preserving it.

The study of Geography is organized around the following main concepts, which are studied year after year at different levels of geographic knowledge, skills and reflection: Orientation, Location, Situation, Notions of space and place, Development and Environment

The teacher makes sure there is a regular progression of learning and acquisition of Geography skills throughout the three years of the programme.

When relevant, the geography of Libya is included.

YEAR 7

First term

Unit 1 What is Geography?
Unit 2 Making and mapping connections
Unit 3 Settlement

Second term

Unit 4 The Geography of Libya
Unit 5 Rivers
Unit 6 Floods

Third term

Unit 7 Our restless planet
Unit 8 Revision unit: Geography and sport – This unit makes students revise the notions acquired during the year.

ASSESSING KS3 HISTORY AND GEOGRAPHY

This is how students are assessed in History and Geography

1.   Assessment is according to the precepts of the KS3 programme of studies Grades are from A* to G.

2.   Students are assessed for their knowledge and understanding, for their application and for the skills involved in the various tasks and projects given in the two subjects.

3.   Assessment in History and Geography takes several forms:

a.   CONTINUOUS ASSESSMENT
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b.   EXAMINATIONS
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c.   RESEARCH REPORTS AND PROJECTS
These are given during the course of the teaching units and are carried out individually or in groups. Their degree of difficulty increases from Year 7 to 9.

d.   CULMINATING PROJECTS

At the end of each academic year, the students carry out a major project that involves all the skills previously learnt during that particular academic year. It can take many forms and it could be a report on a local issue; it might involve surveys, calculations, research, analysis, writing skills, drawing conclusions, etc.

e.   SELF EVALUATION AND REFLECTION

These are an important part of the students' assessment. The students will evaluate their own work and reflect on what the strong points and weaknesses of a particular piece of work are and what could have been done better. The process involves the students actively and develops their thinking skills. Peer assessment is also valued and put into practice.

ASSESSING THE TASKS GIVEN IN GEOGRAPHY & HISTORY

YEAR:
STUDENT'S NAME:
TASK TO BE ASSESSED: ……….. …………………………………………………………………
DATE DUE:
RUBRIC (*This general rubric will be modified to reflect a task's specific requirements*)
Your mark (or grade) will be according to the following:

Task Description	Needs improvement	Average	Good	Very Good
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Varied sources				
Information relevant				
Good evaluation of information				
Ideas clearly presented				
Ideas clearly analysed				
Logically presented				
Geography/history specific skills				
Written expression: clear, good English, use of specific vocabulary				
Topic is fully covered				
Oral expression: clear, varied, convincing (used only for oral work)				

MARKS

The student will get marks according to the amount allocated to knowledge and understanding, his/her subject skills and the presentation and organization of his/her work.

TEACHER'S GENERAL COMMENTS:
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STUDENT'S COMMENTS:
……………………………………………………………………………………………………..………
…………………………………………………………………………………………………..…

YEAR 8

First term

Unit 1 Population matters: people and the planet
Unit 2 Coasts
Unit 3 Weather and climate

Second term

Unit 3 Second part of this very long and demanding unit
Unit 4 Ecosystems
Unit 5 Our warming planet

Third term

Unit 6 Resources: where should we get our energy?
Unit 7 Revision Unit: The Geography of Brazil - This unit makes students revise the notions acquired during the year

ASSESSING KS3 HISTORY AND GEOGRAPHY

This is how students are assessed in History and Geography

1.   Assessment is according to the precepts of the KS3 programme of studies Grades are from A* to G.

2.   Students are assessed for their knowledge and understanding, for their application and for the skills involved in the various tasks and projects given in the two subjects.

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b.   EXAMINATIONS
   At the end of the year, students sit for the End of the Year Exam which covers the current academic year programme.

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   These are given during the course of the teaching units and are carried out individually or in groups. Their degree of difficulty increases from Year 7 to 9.

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             At the end of each academic year, the students carry out a major project that involves all the skills previously learnt during that particular academic year. It can take many forms and it could be a report on a local issue; it might involve surveys, calculations, research, analysis, writing skills, drawing conclusions, etc.

e.   SELF EVALUATION AND REFLECTION
             These are an important part of the students' assessment. The students will evaluate their own work

and reflect on what the strong points and weaknesses of a particular piece of work are and what could have been done better. The process involves the students actively and develops their thinking skills. Peer assessment is also valued and put into practice.

ASSESSING THE TASKS GIVEN IN GEOGRAPHY & HISTORY

YEAR:
STUDENT'S NAME:
TASK TO BE ASSESSED: ………… ………………………………………………………………………
DATE DUE:
RUBRIC (*This general rubric will be modified to reflect a task's specific requirements*)
Your mark (or grade) will be according to the following:

Task Description	Needs improvement	Average	Good	Very Good
Good investigation				
Varied sources				
Information relevant				
Good evaluation of information				
Ideas clearly presented				
Ideas clearly analysed				
Logically presented				
Geography/history specific skills				
Written expression: clear, good English, use of specific vocabulary				
Topic is fully covered				
Oral expression: clear, varied, convincing (used only for oral work)				

MARKS

The student will get marks according to the amount allocated to knowledge and understanding, his/her subject skills and the presentation and organization of his/her work.

TEACHER'S GENERAL COMMENTS:
……
……
STUDENT'S COMMENTS:
…….…

YEAR 9

First term

Unit 1 Development, inequalities in de3velopemnt and International Aid
Unit 2 Globalisation: the global fashion
Unit 3 International Trade: Coffee Break!

Second term

Unit 4 First and second sectors of economic activities: agriculture and industry

Unit 5 Third sector of Economic activities: Tourism – good or bad?
Unit 6 The ocean

Third term

Unit 7 Global issues: Our world in 2030
Unit 8 Close-up on China – This unit makes students revise the notions acquired during the year

ASSESSING KS3 HISTORY AND GEOGRAPHY

This is how students are assessed in History and Geography

1.   Assessment is according to the precepts of the KS3 programme of studies Grades are from A* to G.

2.   Students are assessed for their knowledge and understanding, for their application and for the skills involved in the various tasks and projects given in the two subjects.

3.   Assessment in History and Geography takes several forms:

a.   CONTINUOUS ASSESSMENT
It is used regularly, throughout the academic year; it encourages students to learn, understand and practice their skills frequently. Attitudes in and out of class are also part of the continuous assessment. Examples of continuous assessment are: once a week written pieces of Homework, surprise quizzes, oral questioning in class and End of Unit Tests.

b.   EXAMINATIONS
At the end of the year, students sit for the End of the Year Exam which covers the current academic year programme.

c.   RESEARCH REPORTS AND PROJECTS
These are given during the course of the teaching units and are carried out individually or in groups. Their degree of difficulty increases from Year 7 to 9.

d.   CULMINATING PROJECTS
At the end of each academic year, the students carry out a major project that involves all the skills previously learnt during that particular academic year. It can take many forms and it could be a report on a local issue; it might involve surveys, calculations, research, analysis, writing skills, drawing conclusions, etc.

e.   SELF EVALUATION AND REFLECTION
These are an important part of the students' assessment. The students will evaluate their own work and reflect on what the strong points and weaknesses of a particular piece of work are and what could have been done better. The process involves the students actively and develops their thinking skills. Peer assessment is also valued and put into practice.

ASSESSING THE TASKS GIVEN IN GEOGRAPHY & HISTORY

YEAR:
STUDENT'S NAME:
TASK TO BE ASSESSED: ……….. …………………………………………………………………
DATE DUE:
RUBRIC (*This general rubric will be modified to reflect a task's specific requirements*)

Your mark (or grade) will be according to the following:

Task Description	Needs improvement	Average	Good	Very Good
Good investigation				
Varied sources				
Information relevant				
Good evaluation of information				
Ideas clearly presented				
Ideas clearly analysed				
Logically presented				
Geography/history specific skills				
Written expression: clear, good English, use of specific vocabulary				
Topic is fully covered				
Oral expression: clear, varied, convincing (used only for oral work)				

MARKS

The student will get marks according to the amount allocated to knowledge and understanding, his/her subject skills and the presentation and organization of his/her work.

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ICT

CT Year-7

Term in brief	Timetable (Module – 1) 1. Putting in the content 2. Using Images 3. Using fonts and colours 4. Using sounds 5. Changing the style of a presentation
Modules covered in Spring Term	1. Using data and Information sources (Module-2) 2. Making a leaflet (Module -3)
Topics covered in Summer Term	1. Modelling and presenting Numeric data (Microsoft Excel) 2. Presenting data from a spreadsheet
Example of Activities	1. Moving objects by using different animations 2. Creating a dynamic or static presentation 3. To make links between different programmes
Home work Frequency	Once a fortnight

Main purpose	Obtaining skills for using various software
	Planning
	Analyzing

ASSESSMENT

There are two periods of CT in a week: the first period is devoted to THEORY and the second to PRACTICAL work where the concepts covered in the THEORY class are assessed to check for understanding and assimilation. There are also fortnightly tests throughout the year.

YEAR 8

Term in brief	Timetable
	1. Collecting and representing data
	2. Using and displaying live data
	3. Planning and creating a simple public information system
	4. Automating an information system
Modules covered in Spring Term	1. The language of web pages
	2. Different ways of producing a webpage
	3. Planning the structure of a webpage
Topics covered in Summer Term	1. Planning the structure of a website
	2. Designing and creating a webpage
Example of Activities	1. Creating a brief site by using front page program
	2. Creating a dynamic or static presentation
	3. To make links between different programmes
Home work Frequency	Once a fortnight
Main purpose	Obtaining skills for using various software
	Planning
	Analyzing

ASSESSMENT
There are two periods of CT in a week: the first period is devoted to THEORY and the second to PRACTICAL work where the concepts covered in the THEORY class are assessed to check for understanding and assimilation. There are also fortnightly tests throughout the year.

YEAR 9
CT Year-9

Term in brief	Timetable
	(Module – 1)
	1. Researching and analysing
	2. Mapping the site
	3. Control systems
	4. Automated display systems
Modules covered in Spring Term	1. Method of Communication
	2. Creating questionnaire
	3. Analyzing and reporting
Topics covered in Summer Term	1. System life cycle
	2. Stages of system life cycle
Example of Activities	**1.** **Creating an electronic attendance sheet for the student**
	2. **Creating a dynamic or static presentation**
	3. **To make links between different programmes**
Home work Frequency	**Once a fortnight**
Main purpose	Obtaining skills for using various software
	Planning
	Analyzing

ASSESSMENT

There are two periods of CT in a week: the first period is devoted to THEORY and the second to PRACTICAL work where the concepts covered in the THEORY class are assessed to check for understanding and assimilation. There are also fortnightly tests throughout the year.

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PHYSICAL EDUCATION

KEY STAGE 3 PE. Years 7,8,9.

Each year group has two 50 minute lessons which are timetabled together to allow the maximum period of activity.
We follow a programme which aims, within our limited facilities, to offer the students a range of Activities in order to develop their skills, further their potential and improve their physical fitness and feeling of wellbeing.
We do this through a programme of sports over a period of 5 to 6 weeks so that we achieve a variety of activities. These include:

Football

Hockey

Handball

Volleyball

Basketball

Rounders

Badminton

Fitness training

Tennis

Table tennis.

By the end of key stage 3, year 9, we aim to reach a level of 4/5 of the UK national curriculum. This means that the students can select and combine skills, techniques and ideas and apply them accurately and appropriately in different physical activities. They understand strategy and tactics and can modify them to improve their performance during an activity. They can work with others as a team or on their own as needed and can begin to lead and organise activities and practices safely, helping others improve their performance.
We use continuous assessment to show the students' progress after each lesson and also ask the students to self evaluate their own performance.

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