Esbjerg International School

Scope and Sequence

2017-2018

Contents

Year 7 English

Horror and Suspense (The Red Room)
Knowledge and Skills • Sentence structure and punctuation • stylistic, linguistic and rhetorical features of the horror/suspense genre across both reading and writing • narrative structure of horror/suspense texts • precise vocabulary use • speaking and listening skills of discussion, reflection and evaluation • strategies for correct spelling

Poetry – narrative and non-narrative (Poems from Death Row)
Knowledge and Skills • Features of narrative and non-narrative poems • analysis/comment on poets' manipulation of literary, rhetorical and grammatical features • reading skills of inference and deduction, textual evidence • issues of plot, character and theme • linguistic, stylistic features of diary/blog writing • note-taking speaking and listening skills of discussion, collaboration, presentation • key sentence structure and punctuation skills

Getting to grips with genre (Day of the Triffids)
• Knowledge and Skills • Genre features (including literary and linguistic techniques) across both reading and writing • inference and deduction • key sentence and punctuation skills • note taking • the speaking and listening skills of discussion, collaboration, explanation, persuasion, description

Non-fiction (Dialects)
Knowledge and Skills • Across reading and writing, the presentational, organisational, linguistic and literary features of the non-fiction texts/purposes – to inform, explain, describe, argue, persuade, and comment • inference and deduction • writers' techniques and their impact on meaning • key presentational features of speaking and listening • collaboration, discussion, participation skills • key writing and punctuation skills

An Introduction to Journalistic Writing (Persuasive Writing)
Knowledge and Skills • Structural features and linguistic features of newspaper reports • paragraphing topic sentences • cohesive devices • key sentence and punctuation skills including the noun phrase in apposition and direct speech • literary features e.g. simile, metaphor, pun, hyperbole, alliteration, and their effect on meaning • presentational features of reports and web sites in relation to audience and purpose • key skills of discussion, collaboration

Contemporary Non-fiction: Expressing the Self (Diaries/ Journals)
Knowledge and Skills • Key sentence structure and punctuation skills, included fronted and embedded clauses: paragraphing • topic sentence • cohesive devices organisational, linguistic, literary features of blogs/diaries • features of oral recount • collaboration and discussion

Exploring Pre-20th Century Fiction (Sherlock Holmes)
Knowledge and Skills • Key sentence structure and punctuation skills, included fronted and embedded clauses: paragraphing • topic sentences • cohesive devices • organisational, linguistic, literary features of blogs/ diaries • features of oral recount • collaboration and discussion

Exploring Pre-20th Century Drama (A Midsummer Night's Dream)
Knowledge and Skills • Conventions of drama • note taking • features of fluent and engaging oral delivery • collaboration and discussion • reading skills – retrieval/location, inference, use of appropriate evidence, understanding character, theme and viewpoint • key sentence and punctuation skills

Exploring Pre-20th Century Poetry
Knowledge and Skills • Poetic and linguistic devices • poetic form • themes, ideas, viewpoints • socio cultural context • reading skills – retrieval/ location, inference, use of appropriate evidence • key sentence and punctuation skills • collaboration, discussion and presentation

Year 8 English

Writing skills workshop
Knowledge and Skills • vocabulary • spelling strategies • punctuation range • sentence construction • fronted adverbials • complex nouns • prepositional phrases • sentence construction • speaking/listening skills of discussion and effective sharing of ideas

Reading Skills Workshop (Macbeth)
Knowledge and Skills • More complex inference • using textual evidence literary, rhetorical and grammatical features • narrative tension, setting role play and drama • speaking and listening skills of discussion and collaboration

Speaking and listening workshop
Knowledge and Skills • Organisation of effective explanations and presentations • working collaboratively in a group to formulate plans of action • ways to ask and answer questions • rules of formal debate

More on non-fiction
Knowledge and Skills • Across reading and writing, • the presentational, organisational, linguistic and literary features of the leaflets, reports, reviews, magazine articles, summaries • discussion, collaboration

School magazine project
Knowledge and Skills • Structural, presentational, linguistic and rhetorical features of a range of non-fiction texts • key skills of discussion, collaboration

Poetry please!
Knowledge and Skills • Effect of literary, structural and linguistic features • development of poets' ideas comparison of poems from different cultures • discussion, collaboration, role play and drama

Myths and legends from around the world
Knowledge and Skills • Exploration of a wide range of texts • development of a writer's ideas, viewpoint and themes and relate to other texts read • comparison of texts from different cultures and times • exploration of how different audiences respond to texts • role play and drama • collaboration and discussion

Learning more about fiction (The Boy In The Striped Pyjamas)
Knowledge and Skills • Planning • narrative structure • function of character and type • physical description and dialogue to convey character • textual interpretation and evidence • collaboration and discussion

Television News
Knowledge and Skills • Issues of fact and opinion • bias and viewpoint • note-taking • structure of news reports • issues of audience and purpose • collaboration, discussion • working in groups to formulate ideas and plans of action • role play and drama • interviews and variations in spoken language

Year 9 English

Writing Fiction - Some Advanced Skills (Short Stories)
Knowledge and Skills • Vocabulary choice • spelling strategies • punctuation range and variation • varied sentence types/structures/lengths • embedded phrases and clauses • fronted phrases and clauses • variation in sentence length • complex nouns • prepositional and adverbial phrases • narrative viewpoint • visual description • speaking/listening skills premised on discussion and effective sharing of ideas

Writing Fiction - Some Advanced Skills (Part 2) (Adapting Fairytales)
Knowledge and Skills • Vocabulary choice • spelling strategies • punctuation range and variation • varied sentence types/ structures/lengths • embedded phrases and clauses fronted phrases and clauses • complex nouns • prepositional and adverbial phrases • dialogue layout and variation • speaking/ listening skills premised on discussion and effective sharing of ideas

Other Opinions, Other Views (Interviews)
Knowledge and Skills • Vocabulary choice • spelling strategies • punctuation range and variation • varied sentence types/structures/lengths • embedded phrases and clauses • fronted phrases and clauses • complex nouns prepositional and adverbial phrases • variation of presentational/linguistic/rhetorical features of non-fiction texts according to purpose and audience • review different responses to fiction • speaking/listening skills premised on student work on joint projects, • involving planning, organisation and presentation

People and Places (Autobiographies)
Knowledge and Skills • Vocabulary choice • spelling strategies • punctuation range and variation • varied sentence types/ structures/lengths • embedded phrases and clauses • fronted phrases and clauses • summary • socio cultural context • reading strategies • research strategies • note taking techniques • key features of plot, character and setting • creative writing • speaking and listening – joint organisation, planning, presentation

Travel
Knowledge and Skills • Vocabulary choice • spelling strategies • punctuation range and variation • varied sentence types/structures/lengths • embedded phrases and clauses • fronted phrases and clauses • complex nouns • adverbials • prepositional phrases • organisational, linguistic, literary features of travel brochures/web sites • comparisons of leaflet/web site • issues of text, audience and purpose • speaking and listening skills involved in joint planning, discussion and collaboration

Poetry
Knowledge and Skills • Poetic forms and devices • reading strategies for close reading and research • speaking and listening skills of discussion and collaboration

Argument (Presentations)
Knowledge and Skills • Vocabulary choice • spelling strategies • punctuation range and variation • varied sentence types/structures/lengths • embedded phrases and clauses • fronted phrases and clauses • complex nouns • adverbials • prepositional phrases • structural, linguistic and rhetorical features of argumentative texts • issues of text, audience and purpose • speaking and listening skills involved in joint planning, discussion and collaboration

Revision: Reading and Writing Skills (*Holes*)
Knowledge and Skills • Vocabulary choice • spelling strategies • punctuation range and variation • varied sentence types/structures/lengths • embedded phrases and clauses • fronted phrases and clauses • complex nouns • adverbials • prepositional phrases • structural, linguistic and rhetorical features of fiction and non-fiction texts • presentational features of non-fiction texts • analysis of text using detailed textual evidence • issues of text, audience and purpose • formality • character, setting, themes, viewpoint • narrative and dialogue

Year 10 and Year 11 First Language English

(Cambridge IGCSE Syllabus 0500)

Learning Targets

General

- understand and respond to what they hear, read and experience
- communicate accurately, appropriately, confidently and effectively
- enjoy and appreciate a variety of language
- work with information and ideas in other areas of study, for example,
- develop skills of analysis, synthesis and the drawing of inferences
- promote candidates' personal development and an understanding of themselves and others
- understand and communicate information, sometimes at a complex level and select what is relevant for specific purposes
- understand and reflect on facts, ideas and opinions
- present material in a structured and coherent way, with some development and use of detail
- describe and reflect upon experience, expressing appropriately what is felt and what is imagined
- recognise the more obvious implicit meanings and attitudes of a writer, and the general effects
- conveyed
- show a sense of audience and an awareness of appropriate uses of language for different purposes
- write in paragraphs, using a variety of sentence types and a varied vocabulary
- demonstrate accuracy in use of grammatical structures, spelling and punctuation

Reading

- demonstrate understanding of explicit meanings
- demonstrate understanding of implicit meanings and attitudes
- analyse, evaluate and develop facts, ideas and opinions
- demonstrate understanding of how writers achieve effects
- select for specific purposes

Writing

- articulate experience and express what is thought, felt and imagined
- sequence facts, ideas and opinions
- use a range of appropriate vocabulary
- use register appropriate to audience and context
- make accurate use of spelling, punctuation and grammar

Speaking and Listening

- articulate experience and express what is thought, felt and imagined
- present facts, ideas and opinions in a sustained, cohesive order
- communicate clearly, fluently and purposefully as an individual and in dialogue with other speakers
- use register appropriate to audience and context
- listen to and respond appropriately to the contributions of others

Year 10 and Year 11 English as a Second Language

(Cambridge IGCSE Syllabus 0510)

Learning Targets
General • develop learners' ability to use English effectively for the purpose of practical communication • form a solid foundation for the skills required for further study or employment using English as the medium • develop learners' awareness of the nature of language and language-learning skills • promote learners' personal development **Reading** • identify and retrieve facts and details • understand and select relevant information • recognise and understand ideas, opinions and attitudes and the connections between related ideas • understand what is implied but not actually written, e.g. gist, relationships, writer's purpose/intention, • writer's feelings, situation or place **Writing** • communicate clearly, accurately and appropriately • convey information and express opinions effectively • employ and control a variety of grammatical structures • demonstrate knowledge and understanding of a range of appropriate vocabulary • observe conventions of paragraphing, punctuation and spelling • employ appropriate register/style **Listening** • identify and retrieve facts and details • understand and select relevant information • recognise and understand ideas, opinions and attitudes and the connections between related ideas • understand what is implied but not actually stated, e.g. gist, relationships between speakers, speaker's • purpose/intention, speaker's feelings, situation or place **Speaking** • communicate clearly, accurately and appropriately • convey information and express opinions effectively • employ and control a variety of grammatical structures • demonstrate knowledge of a range of appropriate vocabulary • engage in and infl uence the direction of conversation • employ suitable pronunciation and stress patterns

Year 7 Mathematics

Number and Calculation

- Consolidate the rapid recall of number facts, including positive integer compliments to 100, multiplication facts to 10 x 10 and associated division facts.
- Interpret decimal notation and place value; multiply and divide whole numbers and decimals by 10, 100 or 1000
- Order decimal including measurements, changing these to the same units.
- Round whole numbers to the nearest 10, 100 or 1000 and decimals including measurements to the nearest whole number or 1 decimal place
- Use known facts and place value to multiply and divide two-digit numbers by a single digit number, e.g. 45 x 6, 96 ÷ 6.
- Know and apply tests of divisibility by 2, 3, 5, 6, 8, 9, 10 and 100.
- Use known facts, place value to multiply simple decimals by one-digit numbers e.g. 0.8 x 6
- Recognise the equivalence of simple fractions, decimals and percentages.
- Simplify fractions by cancelling common factors and identify equivalent fractions; change an improper fraction to a mixed number, and vice versa. Convert terminating decimals to fractions e.g. 0.23 = 23 ÷100
- Compare two fractions by using diagrams, or by using a calculator to convert the fractions to decimals, e.g. $\frac{3}{5}$ and $\frac{13}{20}$
- Recognise negative numbers as positions on a number line, and order, add and subtract positive and negative numbers in context

Algebra and Measures

- Choose suitable units of measurement to estimate, measure, calculate and solve problems in everyday contexts
- Use letters to represent unknown numbers or variables; know the meanings of the words term, expression and equation
- Know that algebraic operations follow the same order as arithmetic operations.
- Construct simple algebraic expressions by using letters to represent numbers
- Simplify linear expressions e.g. collect like terms; multiply a constant over a bracket.
- Generate terms of an integer sequence and find a term given its position in the sequence; find simple term-to-term rules
- Generate sequences from spatial patterns and describe the general term in simple cases

Handling Data and Geometry

- Identify, describe, visualise and draw 2D shapes in different orientations.
- Use the notation and labelling conventions for points, lines, angles and shapes
- Name and identify side, angle and symmetry properties of special quadrilaterals and triangles, and regular polygons with 5, 6 and 8 sides
- Estimate the size of acute, obtuse and reflex angles to the nearest 10 degrees
- Decide which date would be relevant to an inquiry and collect and organise the data
- Design and use a data collection sheet or questionnaire for a simple survey
- Use the language of probability to describe and interpret results involving likelihood and chance
- Understand and use the probability scale from 0 to 1
- Find probabilities based on equally likely outcomes in simple contexts.

Number and Calculation

- Know the relationships between units of time; understand and use the 12-hour and 24-hour clock systems; interpreting timetables; calculate time intervals
- Recognise multiples, factors, common factors, primes(all less than 100) making use of simple tests of divisibility; find the lowest common multiple in simple cases; use the "sieve" for generating primes developed by Eratosthenes
- Recognise squares of whole numbers to at least 20 x 20 and the corresponding square roots; use the notation 7^2 and $\sqrt{49}$
- Add and subtract two simple fractions e.g. $\frac{1}{8} + \frac{9}{8}$, $\frac{11}{12} - \frac{5}{8}$. Find fractions of quantities (whole number answers); multiply a fraction by an integer
- Understand percentages as the number of parts in every 100; use fractions and percentages to describe parts of shapes, quantities and measures
- Calculate simple fractions and percentages of quantities, e.g. one quarter of 64, 20% of 50kg
- Use the laws of arithmetic and inverse operations to simplify calculations with whole numbers and decimals
- Know when to round up or down after division, when context requires a whole number answer
- Read the scales on a range of analogue and digital measuring instruments
- Know the abbreviations for and relationships between square metres (m^2) centimetres (cm^2) and millimeters (mm^2)

Algebra and Measures

- Derive and use simple formulae e.g. to change hours to minutes
- Substitute positive integers into simple linear expressions/formulae
- Represent simple functions using words, symbols and mappings
- Generate coordinate pairs that satisfy a linear equation, where y is given explicitly in terms of x, plot the corresponding graphs; recognise straight-line graphs parallel to the x- or y- axis
- Derive and use formulae for the area and perimeter of a rectangle; calculate the perimeter and area of compound shapes made from rectangles
- Know and use abbreviations for and relationships between metric units; Kilo-centi-milli-; converting between; Kilometres Km, metres m, centimetres cm, millimetres mm; Tonnes t, kilograms km, and grams g , Litres l, and millilitres ml

Handling Data and Geometry

- Start to recognise the angular connections between parallel lines, perpendicular lines and transversals
- Calculate the sum of angles at a point, on a straight line and in a triangle, and prove that vertically opposite angles are equal; derive and use the property that the angle sum of a quadrilateral is 360°
- Recognise line and rotation symmetry in two-dimensional shapes and patterns; draw lines of symmetry and complete patterns with two lines of symmetry; identify the order of rotational symmetry.
- Find the mode (or modal class for grouped data), median and range
- Calculate the mean including from a simple frequency table
- Draw and interpret bar line graphs and bar charts, frequency diagrams for grouped discrete data, simple pie charts, and pictograms
- Identify all the possible mutually exclusive outcomes of a single event.
- Use experimental data to estimate probabilities
- Compare experimental and theoretical probabilities in simple contexts

Number and Calculation

- Use the order of operations, including brackets, to work out simple calculations.
- Add and subtract integers and decimals, including numbers with different numbers of decimal places
- Multiply and divide decimals with one and/or two places by single digit numbers, e.g. 13.7 x 8, 4.35 ÷ 5
- Know that in any division where the dividend is not a multiple of the divisor; there will be a remainder, e.g. 157 ÷ 25 = 6 remainder 7. The remainder can be expressed as a fraction of the divisor e.g. 157 ÷ 25 = $6\frac{7}{25}$
- Calculate simple percentages of quantities (whole number answers) and express a smaller quantity as a fraction or percentage of a larger one
- Use percentages to represent and compare different quantities
- Use ratio notation, simplify ratios and divide a quantity into two parts in a given ratio
- Recognise the relationship between ratio and proportion
- Use direct proportion in context; solve simple problems involving ratio and direct proportion

Measures

- Compare two fractions by using diagrams, or by using a calculator to convert the fractions to decimals, e.g. $\frac{3}{5}$ and $\frac{13}{20}$.
- Derive and use formula for the volume of a cuboid; calculate volumes of cuboids
- Calculate the area of cubes and cuboids from their nets
- Draw and interpret graphs in real life context involving more than one stage e.g. travel graphs.

Handling Data and Geometry

- Construct and use frequency tables to gather discrete data, grouped where appropriate in equal class intervals
- Draw conclusions based on the shape of graphs and simple statistics
- Compare two simple distributions using the range and the mode, median or mean
- Read and plot coordinates of points determined by geometrical information in all four quadrants.
- Transform two-dimensional shapes by:
  - -reflection in a given line,
  - -rotation about a given point,
  - -translation.
- Know that shapes remain congruent after these transformations
- Solve simple geometrical problems by using side and angle properties to identify equal lengths or calculate unknown angles, and explain reasoning
- Recognise and describe common solids and some of their properties, e.g. the number of faces, edges and vertices
- Use a ruler, setsquare and protractor to:
  -measure and draw straight lines to the nearest millimetre.
  -measure and draw acute, obtuse and reflex angles to the nearest degree.
- Draw parallel and perpendicular lines
- Construct a triangle given two sides and the included angle (SAS)
- Construct squares and rectangles

Year 8 Mathematics

Number and Calculation

- Add, subtract, multiply and divide integers
- Read and write positive integer powers of 10; multiply and divide integers and decimals by 0.1, 0.01
- Order decimals, including measurements, making use of the =, ≠, > and < signs
- Round whole numbers to a positive integer power of 10, e.g. 10, 100, 1000 or decimals to the nearest whole number or one or two decimal places
- Find equivalent fractions, decimals and percentages by converting between them.
- Convert a fraction to a decimal using division; know that a recurring decimal is a fraction
- Order fractions by writing with common denominators or dividing and converting to decimals
- Use known facts to derive new facts, e.g. given 20 × 38 = 760, work out 21 × 38
- Recall simple equivalent fractions, decimals and percentages.
- Recall relationships between units of measurement.

Algebra and Geometry

- Know that letters play different roles in equations, formulae and functions; know the meanings of formula and function
- Know that algebraic operations, including brackets, follow the same order as arithmetic operations; use index notation for small positive integer powers.
- Construct linear expressions
- Simplify or transform linear expressions with integer coefficients collect like terms; multiply a single term over a bracket
- Generate terms of a linear sequence using term-to-term and position to-term rules; find term-to-term and position-to-term rules of sequences, including spatial patterns
- Express simple functions algebraically and represent them in mappings
- Know that if two 2D shapes are congruent, corresponding sides and angles are equal
- Classify quadrilaterals according to their properties, including diagonal properties
- Know that the longest side of a right-angled triangle is called the hypotenuse
- Identify alternate angles and corresponding angles
- Find the midpoint of the line segment AB, given the coordinates of points A and B

Handling Data and Measures

- Interpret and make simple scale drawings
- Choose suitable units of measurement to estimate, measure, calculate and solve problems in a range of contexts, including units of mass, length, area, volume or capacity
- Identify and collect data to answer a question; select the method of collection, sample size and degree of accuracy needed for measurements
- Know the difference between discrete and continuous data
- Construct and use:

  –frequency tables with given equal class intervals to gather continuous data

  – two-way tables to record discrete data

- Calculate statistics for sets of discrete and continuous data; recognise when to use the range, mean, median and mode and, for grouped data, the modal class
- Interpret tables, graphs and diagrams for discrete and continuous data, and draw conclusions, relating statistics and findings to the original question
- Know that if the probability of an event occurring is p, then the probability of it not occurring is 1 – p
- Find probabilities based on equally likely outcomes in practical contexts

Number and Calculation

- Identify and use multiples, factors, common factors, highest common factors, lowest common multiples and primes; write a number in terms of its prime factors, e.g. 500 = 22 × 53
- Add and subtract fractions and mixed numbers; calculate fractions of quantities (fraction answers); multiply and divide an integer by a fraction.
- Calculate and solve problems involving percentages of quantities and percentage increases or decreases; express one given number as a fraction or percentage of another
- Use equivalent fractions, decimals and percentages to compare different quantities
- Recall squares to 20 × 20, cubes to 5 × 5 × 5, and corresponding roots
- Use known facts and place value to multiply and divide simple decimals, e.g. 0.07 × 9, 2.4 ÷ 3
- Use known facts and place value to calculate simple fractions and percentages of quantities
- Solve simple word problems including direct proportion problems
- Consolidate adding and subtracting integers and decimals, including numbers with differing numbers of decimal places.
- Divide integers and decimals by a single-digit number, continuing the division to a specified number of decimal places, e.g. 68 ÷ 7

Algebra and Geometry

- Derive and use simple formulae, e.g. to convert degrees Celsius (°C) to degrees Fahrenheit (°F)
- Substitute positive and negative integers into formulae, linear expressions and expressions involving small powers, e.g. 3x2 + 4 or 2x3, including examples that lead to an equation to solve.
- Construct tables of values and use all four quadrants to plot the graphs of linear functions, where y is given explicitly in terms of x; recognise that equations of the form y = mx + c correspond to straight-line graphs
- Draw simple nets of solids, e.g. cuboid, regular tetrahedron, square based pyramid, and triangular prism
- Identify all the symmetries of 2D shapes
- Use a straight edge and compasses to construct:

  –the midpoint and perpendicular bisector of a line segment

  –the bisector of an angle
- Transform 2D shapes by rotation, reflection and translation, and simple combinations of these transformations

Handling Data and Measures

- Know that distances in the USA, the UK and some other countries are measured in miles, and that one kilometre is about 5/8 of a mile
- Derive and use formulae for the area of a triangle, parallelogram and trapezium; calculate areas of compound 2D shapes, and lengths, surface areas and volumes of cuboids
- Use simple nets of solids to work out their surface areas
- Draw, and interpret:

  –frequency diagrams for discrete and continuous data

  –pie charts

  –simple line graphs for time series

  –stem-and-leaf diagrams
- Compare two distributions, using the range and one or more of the mode, median and mean
- Find and list systematically all possible mutually exclusive outcomes for single events and for two successive events

Number and Calculation

- Calculate squares, positive and negative square roots, cubes and cube roots; use the notation $\sqrt{49}$ and $\sqrt[3]{64}$ 3 and index notation for positive integer powers.
- Simplify ratios, including those expressed in different units; divide a quantity into more than two parts in a given ratio
- Use the unitary method to solve simple problems involving ratio and direct proportion.
- Use known facts and place value to multiply and divide simple fractions.
- Use the laws of arithmetic and inverse operations to simplify calculations with integers and fractions
- Use the order of operations, including brackets, with more complex calculations.
- Multiply and divide integers and decimals by decimals such as 0.6 or 0.06, understanding where to place the decimal point by considering equivalent calculations, e.g. $4.37 \times 0.3 = (4.37 \times 3) \div 10$, $92.4 \div 0.06 = (92.4 \times 100) \div 6$.

Algebra and Geometry

- Construct and solve linear equations with integer coefficients (unknown on either or both sides, without or with brackets)
- Use a linear expression to describe the nth term of a simple arithmetic sequence, justifying its form by referring to the activity or practical context from which it was generated
- Understand a proof that

  -the angle sum of a triangle is 180° and that 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 properties of angles, of parallel and intersecting lines, and of triangles and special quadrilaterals, explaining reasoning with diagrams and text

Handling Data and Measures
• Use a ruler and compasses to construct – circles and arcs – a triangle, given three sides (SSS) – a triangle, given a right angle, – hypotenuse and one side (RHS) • Understand and use the language and notation associated with enlargement; enlarge 2D shapes, given a centre of enlargement and a positive integer scale factor • Draw and interpret graphs in real life contexts involving more than one component, e.g. travel graphs with more than one person • Know the definition of a circle and the names of its parts; know and use formulae for the circumference and area of a circle • Compare proportions in two pie charts that represent different totals • Compare estimated experimental probabilities with theoretical probabilities, recognising that: –when experiments are repeated different outcomes may result –increasing the number of times an experiment is repeated generally leads to better estimates of probability.

Year 9 Mathematics

Number and Calculation

- Add, subtract, multiply and divide directed numbers
- Recognise the equivalence of 0.1, 1/10 and 10^{-1} multiply and divide whole numbers and decimals by 10 to the power of any positive or negative integer
- Round numbers to a given number of decimal places or significant figures; use to give solutions to problems with an appropriate degree of accuracy
- Consolidate writing a fraction in its simplest form by cancelling common factors
- Add, subtract, multiply and divide fractions, interpreting division as a multiplicative inverse, and cancelling common factor before multiplying or dividing
- Extend mental methods of calculation, working with decimals, fractions, percentages and factors, using jottings where appropriate
- Solve word problems mentally

Algebra and Geometry

- Know the origins of the word algebra and its links to the work of the Arab mathematician Al'Khwarizmi
- Use index notation for positive integer powers; apply the index laws for multiplication and division to simple algebraic expressions
- Construct algebraic expressions
- Simplify or transform algebraic expressions by taking out single-term common factors
- Generate terms of a sequence using term-to-term and position-to term rules
- Derive an expression to describe the nth term of an arithmetic sequence
- Draw 3D shapes on isometric paper
- Analyse 3D shapes through plans and elevations
- Identify reflection symmetry in 3D shapes
- Tessellate triangles and quadrilaterals and relate to angle sums and half-turn rotations; know which regular polygons tessellate, and explain why others will not
- Use the coordinate grid to solve problems involving translations, rotations, reflections and enlargements.

Handling Data and Measure

- Solve problems involving measurements in a variety of contexts
- Convert between metric units of area, e.g. mm^2 and cm^2, cm^2 and m^2 and volume, e.g. mm^3 and cm^3, cm^3 and m^3; know and use the relationship 1 cm^3 = 1 ml.
- Suggest a question to explore using statistical methods; identify the sets of data needed, how to collect them, sample sizes and degree of accuracy
- Identify primary or secondary sources of suitable data
- Design, trial and refine data collection sheets
- Collect and tabulate discrete and continuous data, choosing suitable, equal class intervals where appropriate
- Calculate statistics and select those most appropriate to the problem.

Number and Calculation

- Estimate square roots and cube roots.
- Use positive, negative and zero indices and the index laws for multiplication and division of positive integer powers
- Use the order of operations, including brackets and powers

- Solve problems involving percentage changes, choosing the correct numbers to take as 100% or as a whole, including simple problems involving personal or household finance, e.g. simple interest, discount, profit, loss and tax
- Recognise when fractions or percentages are needed to compare different quantities
- Consolidate use of the rules of arithmetic and inverse operations to simplify calculations
- Multiply by decimals, understanding where to position the decimal point by considering equivalent calculations; divide by decimals by transforming to division by an integer
- Recognise the effects of multiplying and dividing by numbers between 0 and 1.

Algebra and Geometry

- Add and subtract simple algebraic fractions
- Derive formulae and, in simple cases, change the subject; use formulae from mathematics and other subjects
- Substitute positive and negative numbers into expressions and formulae
- Understand and use inequality signs (<, >, ≤, ≥,); construct and solve linear inequalities in one variable; represent the solution set on a number line
- Find the inverse of a linear function
- Construct tables of values and plot the graphs of linear functions, where y is given implicitly in terms of x, rearranging the equation into the form y = mx + c; know the significance of m and find the gradient of a straight line graph
- Find the approximate solutions of a simple pair of simultaneous linear equations by finding the point of intersection of their graphs
- Calculate the interior or exterior angle of any regular polygon; prove and use the formula for the sum of the interior angles of any polygon; prove that the sum of the exterior angles of any polygon is 360°
- Solve problems using properties of angles, of parallel and intersecting lines, and of triangles, other polygons and circles, justifying inferences and explaining reasoning with diagrams and text
- Transform 2D shapes by combinations of rotations, reflections and translations; describe the transformation that maps an object onto its image

Handling Data and Measure

- Select, draw, and interpret diagrams and graphs, including:
  - –frequency diagrams for discrete and continuous data
  - –line graphs for time series
  - –scatter graphs to develop understanding of correlation
  - –back to back stem-and-leaf diagrams.
- Interpret tables, graphs and diagrams and make inferences to support or cast doubt on initial conjectures; have a basic understanding of correlation
- Compare two or more distributions; make inferences, using the shape of the distributions and appropriate statistics
- Enlarge 2D shapes, given a centre and positive integer scale factor; identify the scale factor of an enlargement as the ratio of the lengths of any two corresponding line segments
- Recognise that translations, rotations and reflections preserve length and angle, and map objects on to congruent images, and that enlargements preserve angle but not length
- Know what is needed to give a precise description of a reflection, rotation, translation or enlargement.
- Solve problems involving average speed
- Know that land area is measured in hectares (ha), and that 1 hectare = 10 000 m^2; convert between hectares and square metres

Number and Measure

- Use systematic trial and improvement methods to find approximate solutions of equations such as x 2 + 2x = 20 (1, 2 and 7)
- Compare two ratios; interpret and use ratio in a range of contexts
- Recognise when two quantities are directly proportional; solve problems involving proportionality, e.g. converting between different currencies
- Use compound measures to make comparisons in real-life contexts, e.g. travel graphs and value for money
- Solve problems involving the circumference and area of circles, including by using the π key of a calculator
- Calculate lengths, surface areas and volumes in right-angled prisms and cylinders.

Algebra and Geometry

- Construct and solve linear equations with integer coefficients (with and without brackets, negative signs anywhere in the equation, positive or negative solution); solve a number problem by constructing and solving a linear equation
- Solve a simple pair of simultaneous linear equations by eliminating one variable
- Expand the product of two linear expressions of the form x ± n and simplify the corresponding quadratic expression
- Construct functions arising from real-life problems; draw and interpret their graphs
- Use algebraic methods to solve problems involving direct proportion, relating solutions to graphs of the equations
- Use a straight edge and compasses to:
  - construct the perpendicular from a point to a line and the perpendicular from a point on a line
  - inscribe squares, equilateral triangles, and regular hexagons and octagons by constructing equal divisions of a circle.
- Know and use Pythagoras' theorem to solve two-dimensional problems involving right-angled triangles

Handling Data and Geometry

- Use bearings (angles measured clockwise from the north) to solve problems involving distance and direction
- Make and use scale drawings and interpret maps
- Find by reasoning the locus of a point that moves at a given distance from a fixed point, or at a given distance from a fixed straight line
- Know that the sum of probabilities of all mutually exclusive outcomes is 1 and use this when solving probability problems
- Find and record all outcomes for two successive events in a sample space diagram
- Understand relative frequency as an estimate of probability and use this to compare outcomes of experiments in a range of contexts

Year 10 and Year 11 Mathematics

(Cambridge IGCSE Syllabus 0580)

	Year 10	Year 11
Number	S1	
Algebra and graphs	S1, S2	
Geometry	S2	
Mensuration		S1
Co-ordinate geometry		S1
Trigonometry		S1
Matrices and transformations		S2
Probability		S2
Statistics		S2

Syllabus references in **bold** are for students sitting the Extended paper.

Number – Core syllabus

- Identify and use natural numbers, integers (positive, negative and zero), prime numbers, square numbers, common factors and common multiples, rational and irrational numbers (e g π, $\sqrt{2}$), real numbers
- Calculate squares, square roots, cubes and cube roots of numbers
- Use directed numbers in practical situations
- Use the language and notation of simple vulgar and decimal fractions and percentages in appropriate contexts Recognise equivalence and convert between these forms
- Order quantities by magnitude and demonstrate familiarity with the symbols =, ≠, >, <, ≥, ≤
- Understand the meaning and rules of indices
- Use the standard form A × 10n where n is a positive or negative integer, and 1 ≤A <10
- Use the four rules for calculations with whole numbers, decimals and vulgar (and mixed) fractions, including correct ordering of operations and use of brackets
- Make estimates of numbers, quantities and lengths, give approximations to specified numbers of significant figures and decimal places and round off answers to reasonable accuracy in the context of a given problem
- Give appropriate upper and lower bounds for data given to a specified accuracy
- Demonstrate an understanding of ratio and proportion
- Use common measures of rate
- Calculate average speed
- Calculate a given percentage of a quantity
- Express one quantity as a percentage of another
- Calculate percentage increase or decrease
- Use a calculator efficiently
- Apply appropriate checks of accuracy
- Calculate times in terms of the 24-hour and 12-hour clock
- Read clocks, dials and timetables
- Calculate using money and convert from one currency to another
- Use given data to solve problems on personal and household finance involving earnings, simple interest and compound interest
- Extract data from tables and charts

Number – Extended syllabus

- Identify and use natural numbers, integers (positive, negative and zero), prime numbers, square numbers, common factors and common multiples, rational and irrational numbers (e g π, $\sqrt{2}$), real numbers
- Use language, notation and Venn diagrams to describe sets and represent relationships between sets
- Calculate squares, square roots, cubes and cube roots of numbers
- Use directed numbers in practical situations
- Use the language and notation of simple vulgar and decimal fractions and percentages in appropriate contexts Recognise equivalence and convert between these forms
- Order quantities by magnitude and demonstrate familiarity with the symbols =, ≠, >, <, ≥, ≤
- Understand the meaning and rules of indices
- Use the standard form A × 10n where n is a positive or negative integer, and 1 ≤A <10
- Use the four rules for calculations with whole numbers, decimals and vulgar (and mixed) fractions, including correct ordering of operations and use of brackets
- Make estimates of numbers, quantities and lengths, give approximations to specified numbers of significant figures and decimal places and round off answers to reasonable accuracy in the context of a given problem
- Give appropriate upper and lower bounds for data given to a specified accuracy

- Obtain appropriate upper and lower bounds to solutions of simple problems given data to a specified accuracy
- Demonstrate an understanding of ratio and proportion
- Increase and decrease a quantity by a given ratio
- Use common measures of rate
- Calculate average speed
- Calculate a given percentage of a quantity
- Express one quantity as a percentage of another
- Calculate percentage increase or decrease
- Carry out calculations involving reverse percentages
- Use a calculator efficiently
- Apply appropriate checks of accuracy
- Calculate times in terms of the 24-hour and 12-hour clock
- Read clocks, dials and timetables
- Calculate using money and convert from one currency to another
- Use given data to solve problems on personal and household finance involving earnings, simple interest and compound interest
- Extract data from tables and charts
- Use exponential growth and decay in relation to population and finance

Algebra and graphs – Core syllabus

- Use letters to express generalised numbers and express basic arithmetic processes algebraically
- Substitute numbers for words and letters in formulae
- Transform simple formulae
- Construct simple expressions and set up simple equations
- Manipulate directed numbers
- Use brackets and extract common factors
- Use and interpret positive, negative and zero indices
- Use the rules of indices
- Solve simple linear equations in one unknown
- Solve simultaneous linear equations in two unknowns
- Continue a given number sequence
- Recognise patterns in sequences and relationships between different sequences
- Find the nth term of sequences
- Interpret and use graphs in practical situations including travel graphs and conversion graphs
- Draw graphs from given data
- Construct tables of values for functions of the form $ax + b$, $\pm x^2 + ax + b$, $\frac{a}{x}$ $(x \neq 0)$, where a and b are integral constants Draw and interpret such graphs
- Solve linear and quadratic equations approximately by graphical methods

Algebra and graphs – Extended syllabus

- Use letters to express generalised numbers and express basic arithmetic processes algebraically
- Substitute numbers for words and letters in complicated formulae
- Construct and transform complicated formulae and equations
- Manipulate directed numbers
- Use brackets and extract common factors
- Expand products of algebraic expressions
- Factorise where possible expressions of the form: $ax + bx + kay + kby$, $a^2x^2 - b^2y^2$, $a^2 + 2ab + b^2$, $ax^2 + bx + c$

- Manipulate algebraic fractions
- Factorise and simplify rational expressions
- Use and interpret positive, negative and zero indices
- Use and interpret fractional indices
- Use the rules of indices
- Solve simple linear equations in one unknown
- Solve simultaneous linear equations in two unknowns
- Solve quadratic equations by factorisation, completing the square or by use of the formula
- Solve simple linear inequalities
- Represent inequalities graphically and use this representation in the solution of simple linear programming problems
- Continue a given number sequence
- Recognise patterns in sequences and relationships between different sequences
- Find the nth term of sequences
- Express direct and inverse variation in algebraic terms and use this form of expression to find unknown quantities
- Interpret and use graphs in practical situations including travel graphs and conversion graphs
- Draw graphs from given data
- Apply the idea of rate of change to easy kinematics involving distance-time and speed-time graphs, acceleration and deceleration
- Calculate distance travelled as area under a linear speed-time graph
- Construct tables of values and draw graphs for functions of the form ax^n, where a is a rational constant, and n = –2, –1, 0, 1, 2, 3, and simple sums of not more than three of these and for functions of the form ax, where a is a positive integer Solve associated equations approximately by graphical methods
- Draw and interpret graphs representing exponential growth and decay problems
- Estimate gradients of curves by drawing tangents
- Use function notation, e g f(x) = 3x – 5, f: x a 3x – 5, to describe simple functions
- Find inverse functions $f^{-1}(x)$
- Form composite functions as defined by gf(x) = g(f(x))

Geometry – Core syllabus

- Use and interpret the geometrical terms: point, line, parallel, bearing, right angle, acute, obtuse and reflex angles, perpendicular, similarity and congruence
- Use and interpret vocabulary of triangles, quadrilaterals, circles, polygons and simple
- solid figures including nets
- Measure lines and angles
- Construct a triangle given the three sides using ruler and pair of compasses only
- Construct other simple geometrical figures from given data using ruler and protractor as necessary
- Construct angle bisectors and perpendicular bisectors using straight edge and pair of compasses only
- Read and make scale drawings
- Calculate lengths of similar figures
- Recognise rotational and line symmetry (including order of rotational symmetry) in two dimensions
- Calculate unknown angles using the following geometrical properties: angles at a point , angles at a point on a straight line and intersecting straight lines, angles formed within parallel lines, angle properties of triangles and quadrilaterals, angle properties of regular polygons, angle in a semi-circle , angle between tangent and radius of a circle
- Use the following loci and the method of intersecting loci for sets of points in two dimensions which are: • at a given distance from a given point, at a given distance from a

given straight line ,equidistant from two given points, equidistant from two given intersecting straight lines

Geometry – Extended syllabus

- Use and interpret the geometrical terms: point, line, parallel, bearing, right angle, acute, obtuse and reflex angles, perpendicular, similarity and congruence
- Use and interpret vocabulary of triangles, quadrilaterals, circles, polygons and simple solid figures including nets
- Measure lines and angles
- Construct a triangle given the three sides using ruler and pair of compasses only
- Construct other simple geometrical figures from given data using ruler and protractor as necessary
- Construct angle bisectors and perpendicular bisectors using straight edge and pair of compasses only
- Read and make scale drawings
- Calculate lengths of similar figures
- Use the relationships between areas of similar triangles, with corresponding results for similar figures and extension to volumes and surface areas of similar solids
- Recognise rotational and line symmetry (including order of rotational symmetry) in two dimensions
- Recognise symmetry properties of the prism (including cylinder) and the pyramid (including cone)
- Use the following symmetry properties of circles: equal chords are equidistant from the centre, the perpendicular bisector of a chord passes through the centre, tangents from an external point are equal in length
- Calculate unknown angles using the following geometrical properties: angles at a point , angles at a point on a straight line and intersecting straight lines ,angles formed within parallel lines , angle properties of triangles and quadrilaterals , angle properties of regular polygons , angle in a semi-circle , angle between tangent and radius of a circle , angle properties of irregular polygons , angle at the centre of a circle is twice the angle at the circumference , angles in the same segment are equal , angles in opposite segments are supplementary; cyclic quadrilaterals
- Use the following loci and the method of intersecting loci for sets of points in two dimensions which are: at a given distance from a given point , at a given distance from a given straight line , equidistant from two given points , equidistant from two given intersecting straight lines

Mensuration – Core syllabus

- Use current units of mass, length, area, volume and capacity in practical situations and express quantities in terms of larger or smaller units
- Carry out calculations involving the perimeter and area of a rectangle, triangle, parallelogram and trapezium and compound shapes derived from these
- Carry out calculations involving the circumference and area of a circle
- Carry out calculations involving the volume of a cuboid, prism and cylinder and the surface area of a cuboid and a cylinder
- Carry out calculations involving the areas and volumes of compound shapes

Mensuration – Extended syllabus

- Use current units of mass, length, area, volume and capacity in practical situations and express quantities in terms of larger or smaller units
- Carry out calculations involving the perimeter and area of a rectangle, triangle, parallelogram and trapezium and compound shapes derived from these
- Carry out calculations involving the circumference and area of a circle
- Solve problems involving the arc length and sector area as fractions of the circumference and area of a circle
- Carry out calculations involving the volume of a cuboid, prism and cylinder and the surface area of a cuboid and a cylinder
- Carry out calculations involving the surface area and volume of a sphere, pyramid and cone
- Carry out calculations involving the areas and volumes of compound shapes

Co-ordinate geometry – Core syllabus

- Demonstrate familiarity with Cartesian co-ordinates in two dimensions
- Find the gradient of a straight line
- Interpret and obtain the equation of a straight line graph in the form $y = mx + c$
- Determine the equation of a straight line parallel to a given line

Co-ordinate geometry – Extended syllabus

- Demonstrate familiarity with Cartesian co-ordinates in two dimensions
- Find the gradient of a straight line
- Calculate the gradient of a straight line from the co-ordinates of two points on it
- Calculate the length and the co-ordinates of the midpoint of a straight line from the co-ordinates of its end points
- Interpret and obtain the equation of a straight line graph in the form $y = mx + c$
- Determine the equation of a straight line parallel to a given line
- Find the gradient of parallel and perpendicular lines

Trigonometry – Core syllabus

- Interpret and use three-figure bearings
- Apply Pythagoras' theorem and the sine, cosine and tangent ratios for acute angles to the calculation of a side or of an angle of a right-angled triangle

Trigonometry – Extended syllabus

- Interpret and use three-figure bearings
- Apply Pythagoras' theorem and the sine, cosine and tangent ratios for acute angles to the calculation of a side or of an angle of a right-angled triangle
- Solve trigonometrical problems in two dimensions involving angles of elevation and depression
- Extend sine and cosine values to angles between 90° and 180°
- Solve problems using the sine and cosine rules for any triangle and the formula area of triangle = $\frac{1}{2}ab \sin C$
- Solve simple trigonometrical problems in three dimensions including angle between a line and a plane

Matrices and transformations – Core syllabus

- Describe a translation by using a vector represented by e g $\begin{pmatrix} x \\ y \end{pmatrix}$, $\overrightarrow{AB}$ or a
- Add and subtract vectors
- Multiply a vector by a scalar
- Reflect simple plane figures in horizontal or vertical lines
- Rotate simple plane figures about the origin, vertices or midpoints of edges of the figures, through multiples of 90°
- Construct given translations and enlargements of simple plane figures
- Recognise and describe reflections, rotations, translations and enlargements

Matrices and transformations – Extended syllabus

- Describe a translation by using a vector represented by e g $\begin{pmatrix} x \\ y \end{pmatrix}$, $\overrightarrow{AB}$ or a
- Add and subtract vectors
- Multiply a vector by a scalar
- Reflect simple plane figures in horizontal or vertical lines
- Rotate simple plane figures about the origin, vertices or midpoints of edges of the figures, through multiples of 90°
- Construct given translations and enlargements of simple plane figures
- Recognise and describe reflections, rotations, translations and enlargements
- Calculate the magnitude of a vector $\begin{pmatrix} x \\ y \end{pmatrix}$ as $\sqrt{x^2 + y^2}$
- Represent vectors by directed line segments
- Use the sum and difference of two vectors to express given vectors in terms of two coplanar vectors
- Use position vectors
- Display information in the form of a matrix of any order
- Calculate the sum and product (where appropriate) of two matrices
- Calculate the product of a matrix and a scalar quantity
- Use the algebra of 2 × 2 matrices including the zero and identity 2 × 2 matrices
- Calculate the determinant IAI and inverse A–1 of a non-singular matrix A
- Use the following transformations of the plane: reflection (M), rotation (R), translation (T), enlargement (E), and their combinations

- **Identify and give precise descriptions of transformations connecting given figures**
- **Describe transformations using co-ordinates and matrices (singular matrices are excluded)**

Statistics – Core syllabus

- Collect, classify and tabulate statistical data
- Read, interpret and draw simple inferences from tables and statistical diagrams
- Construct and read bar charts, pie charts, pictograms, simple frequency distributions, histograms with equal intervals and scatter diagrams
- Calculate the mean, median, mode and range for individual and discrete data and distinguish between the purposes for which they are used
- Understand what is meant by positive, negative and zero correlation with reference to a scatter diagram
- Draw a straight line of best fit by eye

Statistics – Extended syllabus

- **Collect, classify and tabulate statistical data**
- **Read, interpret and draw simple inferences from tables and statistical diagrams**
- **Construct and read bar charts, pie charts, pictograms, simple frequency distributions, histograms with equal and unequal intervals and scatter diagrams**
- **Calculate the mean, median, mode and range for individual and discrete data and distinguish between the purposes for which they are used**
- **Calculate an estimate of the mean for grouped and continuous data**
- **Identify the modal class from a grouped frequency distribution**
- **Construct and use cumulative frequency diagrams**
- **Estimate and interpret the median, percentiles, quartiles and inter-quartile range**
- **Understand what is meant by positive, negative and zero correlation with reference to a scatter diagram**
- **Draw a straight line of best fit by eye**

Probability – Core syllabus

- Calculate the probability of a single event as either a fraction, decimal or percentage
- Understand and use the probability scale from 0 to 1
- Understand that the probability of an event occurring = 1 – the probability of the event not occurring
- Understand relative frequency as an estimate of probability

Probability – Extended syllabus

- **Calculate the probability of a single event as either a fraction, decimal or percentage**
- **Understand and use the probability scale from 0 to 1**
- **Understand that the probability of an event occurring = 1 – the probability of the event not occurring**
- **Understand relative frequency as an estimate of probability**
- **Calculate the probability of simple combined events, using possibility diagrams and tree diagrams where appropriate**

Year 7 Science

Forces and their Effects

The effects of forces on movement, including friction and air resistance

- Describe the effects of forces on motion, including friction and air resistance.

The effects of gravity on objects

- Describe the effect of gravity on objects.

Scientific Enquiry

- Outline plans to carry out investigations, considering the variables to control, change or observe.
- Make predictions referring to previous scientific knowledge and understanding.
- Consider explanations for predictions using scientific knowledge and understanding and communicate these.
- Identify appropriate evidence to collect and suitable methods of collection.
- Choose appropriate apparatus and use it correctly.
- Make careful observations including measurements.
- Present results in the form of tables.

Living Things

The characteristics common to all living things, and their importance to survival of the organism

- Identify the seven characteristics of living things and relate these to a wide range of organisms in the local and wider environment.

That all living things are made of cells, the structure and typical cells, how cells are adapted to their function

- Identify the structures present in plant and animal cells as seen with a simple light microscope and/or a computer microscope.
- Compare the structure of plant and animal cells.
- Relate the structure of some common cells to their functions.

How cells are organised in tissues, organs and organ systems to efficiently carry out the functions of life.

- Understand that cells can be grouped together to form tissues, organs and organisms.
- Recognise the positions, and know the functions of the major organs of flowering plants, e.g. root, stem, leaf.
- Recognise the positions and know the functions of the major organ systems of the human body.
- Explore the role of the skeleton and joints and the principle of antagonistic muscles.

Scientific Enquiry

- Use information from secondary sources.
- Be able to talk about the importance of questions, evidence and explanations.
- Make careful observations including measurements.
- Present results in the form of tables, bar charts and line graphs.
- Make conclusions from collected data, including those presented in a graph, chart or spreadsheet.
- Present conclusions using different methods.

Solids, Liquids and Gases
How the particle theory of matter and how this can explain the properties of solids, liquids and gases, including changes of state • Show in outline how the particle theory of matter can be used to explain the properties of solids, liquids and gases, including changes of state. **Scientific Enquiry** • Make predictions and review them against evidence. • Consider explanations for predictions using scientific knowledge and understanding and communicate these. • Outline plans to carry out investigations, considering the variables to control, change or observe • Choose appropriate apparatus and use it correctly. • Make careful observations. • Identify appropriate evidence to collect and suitable methods of collection. • Present results in the form of tables, bar charts or line graphs. • Recognise results and observations that do not fit into a pattern, including those presented on a graph, chart or spreadsheet. • Make conclusions from collected data, including those presented in a graph, chart or spreadsheet.

Putting Things into Groups
Everyday materials and their physical properties • Describe everyday materials and their physical properties. **Metals and non-metals** • Distinguish between metals and non-metals. **Classify animals and plants into major groups, using some locally occurring examples** • Classify animals and plants into major groups, using some locally occurring examples. **What is meant by a species** • Understand what is meant by a species. **Variation within a species.** • Investigate variation within a species. **Scientific Enquiry** • Make predictions and review them against evidence. • Make predictions referring to previous scientific knowledge and understanding. • Choose appropriate apparatus and use it correctly. • Make careful observations including measurements. • Present results in the form of tables, bar charts and line graphs. • Make conclusions from collected data, including those presented in a graph, chart or spreadsheet. • Present conclusions using different methods.

Energy Transformations

Different types of energy

- Recognise different energy types and energy transfers.

Energy as something that cannot be created or destroyed

- Understand that energy cannot be created or destroyed and that energy is always conserved.

Energy transfers

- Recognise different energy types and energy transfers.

Scientific Enquiry

- Use secondary sources.
- Make predictions and review them against evidence.
- Make predictions referring to previous scientific knowledge and understanding.
- Make careful observations.
- Present results in the form of tables, bar charts or line graphs.
- Make conclusions from collected data.

Acids and Bases

How to tell if a solution is an acid or an alkali

- Use indicators to distinguish acid and alkaline solutions.

Using a pH scale

- Use a PH scale.

Neutralisation and some of its applications

- Understand neutralisation and some of its applications.

Scientific Enquiry

- Use Information from secondary sources.
- Suggest ideas that may be tested.
- Outline plans to carry out investigations, considering the variables to control, change or observe.
- Choose appropriate apparatus and use it correctly.
- Make careful observations including measurements.
- Present results in the form of tables, bar charts and line graphs.
- Present conclusions using different methods.

The Earth and Beyond

The different type of rocks and soils

- Observe and classify different types of rocks and soils.

Simple models of the internal structure of the Earth

- Research simple models of the internal structure of the Earth.

Fossils and the fossil record as a guide to estimating the age of the Earth

- Examine fossils and research the fossil record.
- Discuss the fossil record as a guide to estimating the age of the Earth.
- Learn about most recent estimates of the age of the Earth.

The relative positions and movement of the planets and the Sun in the solar system

- Describe the relative position and movement of the planets and the Sun in the solar system.

How the movement of the Earth causes the apparent daily and annual movement of the Sun and the stars

- Describe how the movement of the Earth causes the apparent daily and annual movement of the Sun and the stars.

The impact of the ideas and discoveries of Copernicus, Galileo and more recent scientists

- Discuss the impact of the ideas and discoveries of Copernicus, Galileo and more recent scientists.

The Sun and other stars as sources of light, and that planets and other bodies are seen by reflected light

- Understand that the Sun and other stars are sources of light and that planets and other bodies are seen by reflected light.

Scientific Enquiry

- Use Information from secondary sources.
- Make predictions referring to previous scientific knowledge and understanding.
- Consider explanations for predictions using scientific knowledge and understanding and communicate these.
- Be able to talk about the importance of questions, evidence and explanations.
- Outline plans to carry out investigations, considering the variables to control, change or observe.
- Choose appropriate apparatus and use it correctly.
- Make careful observations including measurements.
- Recognise results and observations that do not fit into a pattern, including those presented in a graph, chart or spreadsheet.
- Make conclusions from collected data, including those presented in a graph, chart or spreadsheet.
- Present conclusions using different methods.
- Make predictions and review them against evidence.

Habitats and Environment

Where organisms live

- Describe how organisms are adapted to their habitat, drawing on locally occurring examples. Secondary sources can be used.

How organisms interact with each other and the environment

- Draw and model simple food chains.

The influences humans have on the natural environment

- Discuss positive and negative influence of humans on the environment, e.g. the effect on food chains, pollution and ozone depletion.
- Discuss a range of energy sources and distinguish between renewable and non-renewable resources. Secondary sources can be used.

Scientific Enquiry

- Be able to talk about the importance of questions, evidence and explanations.
- Suggest ideas that may be tested.
- Identify appropriate evidence to collect and suitable methods of collection.
- Make careful observations including measurements.
- Present results in the form of tables, bar charts and line graphs.
- Present conclusions using different methods.

Microorganisms and Disease
How some microorganisms can be useful to humans but others are harmful • Identify the seven characteristics of living things and relate these to a wide range of organisms in the local and wider environment. • Identify the structures present in plant and animal cells as seen with a simple light microscope and/or a computer microscope. **The use of microorganisms in food production** **How microorganisms breakdown can cause decay** • Know about the role of micro-organisms in the breakdown of organic matter, food production and disease, including the work of Louis Pasteur. **The work of Louis Pasteur and other scientists studying the human body** • Research the work of scientists studying the human body. **Scientific Enquiry** • Use information from secondary sources. • Be able to talk about the importance of questions, evidence and explanations. • Suggest ideas that may be tested. • Choose appropriate apparatus and use it correctly. • Outline plans to carry out investigations, considering the variables to control, change or observe. • Make careful observations including measurements. • Identify appropriate evidence to collect and suitable methods of collection. • Make conclusions from collected data, including those presented in a graph, chart or spreadsheet. • Present results in the form of tables, bar charts and line graphs.

Year 8 Science

Reproduction and Growth

The human reproductive system, including the menstrual cycle, fertilisation and foetal development

- Describe the human reproductive system, including the menstrual cycle, fertilisation and foetal development.

How conception, growth, development, behaviour and health can be affected by diet, drugs and disease

- Discuss how conception, growth, development, behaviour and health can be affected by diet, drugs and disease.

The physical and emotional changes that take place during adolescence

- Discuss the physical and emotional changes that take place during adolescence

Scientific Enquiry work

- Interpret data from secondary sources.

Obtaining Food

The need of plants for carbon dioxide, water and light for photosynthesis and that this process makes biomass and oxygen

- Explore how plants need carbon dioxide, water and light for photosynthesis in order to make biomass and oxygen.

The constituents of a balanced diet and the functions of various nutrients

- Identify the constituents of a balanced diet and the functions of various nutrients.
- Understand the effects of nutritional deficiencies

The relationship between diet and fitness

- Understand the relationship between diet and fitness.

The organs and functions of the alimentary canal

- Recognise the organs of the alimentary canal and know their functions.

The function of enzymes

- Understand the function of enzymes as biological catalysts in breaking down food to simple chemicals

Scientific Enquiry

- Plan investigations to test ideas.
- Identify important variables, choose which variables to change, control and measure.
- Interpret data from secondary sources.
- Make predictions using scientific knowledge and understanding.
- Use a range of equipment correctly.
- Discuss and control risks to themselves and others.
- Take appropriately accurate measurements.
- Make simple calculations.
- Compare results with predictions.
- Present results as appropriate in tables and graphs.
- Discuss explanations for results using scientific knowledge and understanding. Communicate these clearly to others.

Elements, Mixtures and Compounds

Changes of state, gas pressure and diffusion

- Show how the use particle theory of matter can be used to explain the properties of solids, liquids and gases, including changes of state, gas pressure and diffusion.

The chemical symbols for the first twenty elements of the Periodic Table

- Understand that elements are made of atoms.
- Give chemical symbols for the first twenty elements of the Periodic Table

Elements, compounds and mixtures

- Distinguish between elements, compounds and mixtures.

Scientific Enquiry

- Plan investigations to test ideas.
- Use a range of equipment correctly.
- Discuss and control risks to themselves and others.
- Compare results with predictions.
- Discuss explanations for results using scientific knowledge and understanding. Communicate these clearly to others.

Forces and Magnets

Speed including interpreting simple distance/time graphs

- Interpret simple distance/time graphs
- Calculate average speeds, including through the use of timing gates.

How magnetism can be used to move things

- Describe the properties of magnets.
- Recognise and reproduce the magnetic field pattern of a bar magnet.
- Construct and use an electromagnet.

Scientific Enquiry

- Identify important variables, choose which variables to change, control and measure.
- Interpret data from secondary sources.
- Make predictions using scientific knowledge and understanding.
- Use a range of equipment correctly.
- Discuss and control risks to themselves and others.
- Take appropriately accurate measurements.
- Make simple calculations.
- Present results as appropriate in tables and graphs.
- Identify trends and patterns in results (correlations).
- Discuss explanations for results using scientific knowledge and understanding.
- Identify anomalous results and suggest improvements to investigations.
- Compare results with predictions.
- Communicate these clearly to others.

Chemical Reactions

Using word equations to describe a reaction

- Describe and explain the differences between metals and non-metals.
- Use a word equation to describe a reaction.

Some common compounds including oxides, hydroxides, chlorides, sulphates and carbonates

- Explain the idea of compounds.

- Name some common compounds including oxides, hydroxides, **chlorides**, sulphates and carbonates.

Scientific Enquiry

- Select ideas and turn them into a form that can be tested.
- Use a range of equipment correctly.
- Discuss and control risks to themselves and others.
- Identify trends and patterns.
- Present results as appropriate in tables.

Metals, Non-metals and Corrosion

The differences between metals and non-metals

- Describe and explain the differences between metals and non-metals.

Chemical reactions which are not useful

- Describe chemical reactions which are not useful.

Word equations

- Use a word equation to describe a reaction.

Scientific Enquiry work

- Test predictions with reference to evidence gained.
- Plan investigations to test ideas.
- Identify important variables, choose which variables to change control and measure.
- Use a range of equipment correctly.
- Compare results with predictions.
- Present conclusions to others in appropriate ways.
- Present results as appropriate in tables and graphs.

Respiration and Circulation

How water and mineral salts are absorbed and transported in flowering plants

- Describe the **absorption** and transport of water and mineral salts in flowering plants.

The basic components of the circulatory system and their functions

- Recognise and model the basic components of the circulatory system and know their functions.

The basic components of the respiratory system and their functions

- Recognise the basic components of the respiratory system and know their functions.

Gaseous exchange

- Explain gaseous exchange.

Aerobic respiration

- Define and describe aerobic respiration and use the word equation

The effects of smoking

- Discuss how growth, development, and health can be affected by drugs and disease.
- Describe the effects of smoking

Scientific Enquiry

- Discuss the importance of developing empirical questions which can be investigated, collecting evidence, developing explanations and using creative thinking.
- Plan investigations to test ideas.
- Interpret data from secondary sources.

- Take appropriately accurate measurements.

Light

How light travels and the formation of shadows

- Use light travelling in a straight line to explain the formation of shadows and other phenomena.
- How non-luminous objects are seen.

Reflection at a plane surface and use the law of reflection.

- Describe reflection at a plane surface and use the law of reflection

Refraction at the boundary between air and glass or air and water

- Investigate refraction at the boundary between air and glass or air and water.

The dispersion of white light

- Explain the dispersion of white light.

Colour addition and subtraction, and the absorption and reflection of coloured light

- Explain colour addition and subtraction, and the absorption and reflection of coloured light.

Scientific Enquiry work

- Make predictions using scientific knowledge and understanding.
- Plan investigations to test ideas.
- Use a range of equipment correctly.
- Identify trends and patterns in results (correlations).
- Take appropriately accurate measurements.
- Present results as appropriate in tables and graphs.
- Discuss explanations for results using scientific knowledge and understanding.
- Communicate these clearly to others.

Sound

The properties of sound in terms of movement of air particles

- Describe the properties of sound in terms of movement of air particles.

The link between loudness and amplitude, pitch and frequency

- Recognise the link between loudness and amplitude, pitch and frequency, using an oscilloscope.

Scientific Enquiry

- Plan investigations to test ideas.
- Identify important variables, choose which variables to change and measure.
- Select ideas and turn them into a form that can be tested.
- Discuss and control risks to themselves and others.
- Present results as appropriate in tables and graphs.
- Identify trends and patterns in results (correlations).
- Identify anomalous results and suggest improvements to investigations.
- Present conclusions to others in appropriate ways.

Year 9 Science

The Periodic table and Preparing Salts

The structure of an atom

The methods and discoveries of Rutherford and other scientists.

- Describe the structure of an atom and learn about the methods and discoveries of Rutherford.

The structures of the first twenty elements of the Periodic Table

- Compare the structures of the first twenty elements of the Periodic Table.

Trends in groups and periods

- Describe trends in groups and periods.

Preparing some common salts by the reactions of metals or metal carbonates with acid

- Preparing some common salts by the reactions of metals or metal carbonates with acid.

Writing word equations to describe reactions of metals or metal carbonates with acids

- Explain how to prepare some common salts by the reactions of metals and metal carbonates and be able to write word equations for these reactions.

Scientific Enquiry

- Discuss and explain the importance of questions, evidence and explanations, using historical and contemporary examples.
- Discuss the way that scientists work today and how they worked in the past, including reference to experimentation, evidence and creative thought.
- Decide which measurements and observations are necessary and what equipment to use.
- Make sufficient observations and measurements to reduce error and make results more reliable.
- Explain results using scientific knowledge and understanding.

Sexual Reproduction and Flowering Plants

Sexual reproduction in flowering plants including pollination, fertilisation, seed formation and dispersal

- Understand sexual reproduction in flowering plants including pollination, fertilisation, seed formation and dispersal.

Scientific Enquiry

- Make observations and measurements.
- Interpret results using scientific knowledge and understanding.
- Draw conclusions.
- Evaluate the methods used and refine for further investigations.
- Compare results and methods used by others.
- Present conclusions and evaluation of working methods in different ways.

Electrostatics and Electric Currents

Electrostatics and the concept of charge, including digital sensors

- Describe electrostatics and the concept of charge, including digital sensors.

Simple series and parallel circuits

- Interpret and draw simple series and parallel circuits.
- Explain how current divides in parallel circuits

How common types of component, including cells (batteries), affect current

- Model and explain how common types of components, including cells (batteries), affect current.

Measuring current and voltage

- Measure current using ammeters and voltage using voltmeters, including digital meters.

Scientific Enquiry

- Make observations and measurements.
- Interpret results using scientific knowledge and understanding.
- Test explanations by using them to make predictions and then evaluate these against evidence.
- Select ideas and produce plans for testing based on previous knowledge, understanding and research.
- Decide which apparatus to use and assess any hazards in the laboratory, field or workplace.
- Use a range of materials and equipment and control risks.
- Draw conclusions.
- Evaluate the methods used and refine for further investigations.

Reactivity and Rates of Reaction

The reactivity series of metals with oxygen, water and dilute acids

- Explore and understand the reactivity series.
- Describe the reactivity of metals with oxygen, water and dilute acids.

Displacement reactions

- Give examples of displacement reactions.

The effects of concentration, particle size, temperature and catalysts on the rate of a reaction

- Give an explanation of the effects of concentration, particle size temperature and catalysts on the rate of a reaction.

Scientific Enquiry

- Use a range of materials and equipment and control risks.
- Describe patterns seen in results.
- Decide whether to use evidence from first-hand experience or secondary sources.
- Look critically at sources of secondary data.
- Select ideas and produce plans for testing based upon previous knowledge, understanding and research.
- Decide which measurements and observations are necessary and what equipment to use.
- Decide which apparatus to use and assess any hazards in the laboratory.
- Make sufficient observations and measurements to reduce error and make results more reliable.
- Evaluate the methods used and refine for further investigations.
- Explain results using scientific knowledge and understanding. Communicate this clearly to others.
- Test explanations by using them to make predictions and then evaluate these against evidence.
- Discuss and explain the importance of questions, evidence and explanations, using historical and contemporary examples.
- Draw conclusions.

Chemicals and Thermal Energy

Endothermic processes and exothermic reactions

- Explore and explain the idea of endothermic processes and exothermic reactions.

Cooling by evaporation

- Explain cooling by evaporation

The thermal (heat) energy transfer processes of conduction, convection and radiation

- Identify and explain the thermal (heat) energy transfer processes of conduction, convection and radiation.

Scientific Enquiry

- Select ideas and produce plans for testing based upon previous knowledge, understanding and research.
- Decide which apparatus to use and assess any hazards in the laboratory.
- Evaluate the methods used and refine for further investigations.
- Use a range of materials and equipment and control risks.
- Make sufficient observations and measurements to reduce error and make results more reliable.
- Choose the best way to present results.
- Describe patterns (correlations) seen in results.
- Interpret results using scientific knowledge and understanding.
- Draw conclusions.
- Explain results using scientific knowledge and understanding. Communicate this clearly to others.
- Decide which measurements and observations are necessary and what equipment to use.
- Decide whether to use evidence from first-hand experience or secondary sources.

Moments, Pressure and Density

Objects turning on a pivot and understand the principle of moments

- Know that forces can cause objects to turn on a pivot and understand the principle of moments.

Pressure as caused by the action of force on an area

- Explain that pressure is caused by the action of a force on an area.

The densities of solids, liquids and gases

- Determine densities of solids, liquids and gases.

Pressures in gases and liquids (qualitative only)

- Explain pressures in **gases** and liquids (qualitative only).

Scientific Enquiry

- Select ideas and produce plans for testing based upon previous knowledge, understanding and research.
- Decide which measurements and observations are necessary and what equipment to use.
- Make observations and measurements.
- Choose the best way to present results.
- Describe patterns (correlations) seen in results.
- Interpret results using scientific knowledge and understanding.
- Draw conclusions.
- Explain results using scientific knowledge and understanding. Communicate this clearly to others.

Ecology

Constructing keys to identify plants and animals

- Use and construct keys to identify plants and animals.

Food chains, food webs and energy flow including the role of decomposers

- Explain and model food chains, food webs and energy flow.
- Explain the role of decomposers.

How living things are adapted to their habitats

- Explain the ways in which living things are adapted to their habitats. Secondary sources can be used.

How characteristics are inherited

- Understand that organisms inherit characteristics from their parents through genetic material that is carried in the cell nuclei.

Selective breeding

- Describe how selective breeding can lead to new varieties.

The work of Darwin on natural selection and other scientists studying the natural world

- Research the work of scientists studying the natural world.
- Discuss the work of Darwin in developing the scientific theory of natural selection.

Scientific Enquiry work

- Discuss and explain the importance of questions, evidence and explanations, using historical and contemporary examples.
- Discuss the way that scientists work today and how they worked in the past, including reference to experimentation and evidence.

The Energy Crisis and Human Influences

Factors affecting the size of populations

- Describe factors affecting the size of populations.

Some effects of human influences on the environment.

- Describe and investigate some effects of human influences on the environment.

The world's energy needs

- Use knowledge of energy sources including fossil fuels and renewable energy resources to consider the world's energy needs, including research from secondary sources.

Scientific Enquiry

- Look critically at sources of secondary data.
- Decide which apparatus to use and assess any hazards in the laboratory, field or workplace.
- Use appropriate sampling techniques where required.
- Know the importance of questions, evidence and explanations, using historical and contemporary examples.

Year 10 and Year 11 Biology

(Cambridge IGCSE Syllabus 0610)

IGCSE Biology	Year 10	Year 11
Characteristics and classification of living organisms	S1	S1
Organisation of the organism	S1	
Movement in and out of cells	S1	
Biological molecules	S1	S1
Enzymes	S1	S1
Plant nutrition	S1	S1
Human nutrition	S1	S1
Transport in plants	S2	S1
Transport in animals	S2	S1
Gas exchange in humans	S2	S2
Respiration	S2	S2
Drugs		S2
Organisms and their environment		S2
Human influences on ecosystems		S2

Syllabus references in **bold** are for students sitting the Extended paper.

Characteristics and classification of living organisms

- Describe the characteristics of living organisms by defining the terms: movement, respiration, sensitivity, growth, excretion, nutrition.

Concept and use of a classification system

- State that organisms can be classified into groups by the features that they share
- Define species as a group of organisms that can reproduce to produce fertile offspring
- Define and describe the binomial system of naming species as an internationally agreed system in which the scientific name of an organism is made up of two parts showing the genus and species
- **Explain that classification systems aim to reflect evolutionary relationships**
- **Explain that classification is traditionally based on studies of morphology and anatomy**
- **Explain that the sequences of bases in DNA and of amino acids in proteins are used as a more accurate means of classification**
- **Explain that organisms which share a more recent ancestor (are more closely related) have base sequences in DNA that are more similar than those that share only a distant ancestor**

Features of organisms

- List the features in the cells of all living organisms, limited to cytoplasm, cell membrane and DNA as genetic material
- List the main features used to place animals and plants into the appropriate kingdoms
- List the main features used to place organisms into groups within the animal kingdom, limited to: – the main groups of vertebrates: mammals, birds, reptiles, amphibians, fish – the main groups of arthropods: myriapods, insects, arachnids, crustaceans.
- **List the features in the cells of all living organisms, limited to ribosomes for protein synthesis and enzymes involved in respiration**
- **List the main features used to place all organisms into one of the five kingdoms: Animal, Plant, Fungus, Prokaryote, Protoctist**
- **List the main features used to place organisms into groups within the plant kingdom, limited to ferns and flowering plants (dicotyledons and monocotyledons)**
- **List the features of viruses, limited to protein coat and genetic material**

Dichotomous keys

- Construct and use simple dichotomous keys based on easily identifiable features

Organisation of the organism

Cell structure and organisation

- Describe and compare the structure of a plant cell with an animal cell, as seen under a light microscope, limited to cell wall, nucleus, cytoplasm, chloroplasts, vacuoles and location of the cell membrane
- State the functions of the structures seen under the light microscope in the plant cell and in the animal cell
- **State that the cytoplasm of all cells contains structures, limited to ribosomes on rough endoplasmic reticulum and vesicles**
- **State that almost all cells, except prokaryotes, have mitochondria and rough endoplasmic reticulum**
- **Identify mitochondria and rough endoplasmic reticulum in diagrams and images of cells**
- **State that aerobic respiration occurs in mitochondria**

- **State that cells with high rates of metabolism require large numbers of mitochondria to provide sufficient energy**

Levels of organization

- Relate the structure of the following to their functions: – ciliated cells – movement of mucus in the trachea and bronchi – root hair cells – absorption – xylem vessels – conduction and support – palisade mesophyll cells – photosynthesis – nerve cells – conduction of impulses – red blood cells – transport of oxygen – sperm and egg cells – reproduction
- Define tissue as a group of cells with similar structures, working together to perform a shared function
- Define organ as a structure made up of a group of tissues, working together to perform specific functions
- Define organ system as a group of organs with related functions, working together to perform body functions
- State examples of tissues, organs and organ systems from sections 6 to 16 Supplement
- Identify the different levels of organisation in drawings, diagrams and images of familiar material
- **Identify the different levels of organisation in drawings, diagrams and images of unfamiliar material**

Size of specimens

- Calculate magnification and size of biological specimens using millimetres as units
- **Calculate magnification and size of biological specimens using millimetres and micrometres as units**

Movement in and out of cells

Diffusion

- Define diffusion as the net movement of particles from a region of their higher concentration to a region of their lower concentration down a concentration gradient, as a result of their random movement
- Describe the importance of diffusion of gases and solutes
- State that substances move into and out of cells by diffusion through the cell membrane
- **State that the energy for diffusion comes from the kinetic energy of random movement of molecules and ions**
- **Investigate the factors that influence diffusion, limited to surface area, temperature, concentration gradients and distance**

Osmosis

- State that water diffuses through partially permeable membranes by osmosis
- State that water moves in and out of cells by osmosis through the cell membrane
- Investigate and describe the effects on plant tissues of immersing them in solutions of different concentrations
- State that plants are supported by the pressure of water inside the cells pressing outwards on the cell wall
- **Define osmosis as the net movement of water molecules from a region of higher water potential (dilute solution) to a region of lower water potential (concentrated solution), through a partially permeable membrane**
- **Explain the effects on plant tissues of immersing them in solutions of different concentrations by using the terms turgid, turgor pressure, plasmolysis and flaccid**
- **Explain the importance of water potential and osmosis in the uptake of water by plants**
- **Explain the importance of water potential and osmosis on animal cells and tissues**

- **Explain how plants are supported by the turgor pressure within cells, in terms of water pressure acting against an inelastic cell wall**

Active transport

- Define active transport as the movement of particles through a cell membrane from a region of lower concentration to a region of higher concentration using energy from respiration
- **Discuss the importance of active transport as a process for movement across membranes: – e.g. ion uptake by root hairs and uptake of glucose by epithelial cells of villi and kidney tubules**
- **Explain how protein molecules move particles across a membrane during active transport.**

Biological molecules

Core

- List the chemical elements that make up: – carbohydrates – fats – proteins
- State that large molecules are made from smaller molecules, limited to: – starch and glycogen from glucose – cellulose from glucose – proteins from amino acids – fats and oils from fatty acids and glycerol
- Describe the use of: – iodine solution to test for starch – Benedict's solution to test for reducing sugars – biuret test for proteins – ethanol emulsion test for fats and oils – DCPIP test for vitamin C
- State that water is important as a solvent
- **Explain that different sequences of amino acids give different shapes to protein molecules**
- **Relate the shape and structure of protein molecules to their function, limited to the active site of enzymes and the binding site of antibodies**
- **Describe the structure of DNA as: – two strands coiled together to form a double helix – each strand contains chemicals called bases – cross-links between the strands are formed by pairs of bases – the bases always pair up in the same way: A with T, and C with G (full names are not required)**
- **Describe the roles of water as a solvent in organisms with respect to digestion, excretion and transport**

Enzymes

- Define the term catalyst as a substance that increases the rate of a chemical reaction and is not changed by the reaction
- Define enzymes as proteins that function as biological catalysts
- Describe why enzymes are important in all living organisms in terms of reaction speed necessary to sustain life
- Describe enzyme action with reference to the complementary shape of an enzyme and its substrate and the formation of a product (knowledge of the term active site is not required)
- Investigate and describe the effect of changes in temperature and pH on enzyme activity
- **Explain enzyme action with reference to the active site, enzyme-substrate complex, substrate and product**
- **Explain the specificity of enzymes in terms of the complementary shape and fit of the active site with the substrate**
- **Explain the effect of changes in temperature on enzyme activity in terms of kinetic energy, shape and fit, frequency of effective collisions and denaturation**
- **Explain the effect of changes in pH on enzyme activity in terms of shape and fit and denaturation**

Plant nutrition

Photosynthesis

- Define photosynthesis as the process by which plants manufacture carbohydrates from raw materials using energy from light
- State the word equation for photosynthesis: carbon dioxide + water → glucose + oxygen, in the presence of light and chlorophyll
- Investigate the necessity for chlorophyll, light and carbon dioxide for photosynthesis, using appropriate controls
- Investigate and describe the effects of varying light intensity, carbon dioxide concentration and temperature on the rate of photosynthesis, e.g. in submerged aquatic plants
- **State the balanced chemical equation for photosynthesis**
- **Explain that chlorophyll transfers light energy into chemical energy in molecules, for the synthesis of carbohydrates**
- **Outline the subsequent use and storage of the carbohydrates made in photosynthesis**
- **Define the term limiting factor as something present in the environment in such short supply that it restricts life processes**
- **Identify and explain the limiting factors of photosynthesis in different environmental conditions**
- **Describe the use of carbon dioxide enrichment, optimum light and optimum temperatures in glasshouses in temperate and tropical countries**
- **Use hydrogencarbonate indicator solution to investigate the effect of gas exchange of an aquatic plant kept in the light and in the dark**

Leaf structure

- Identify chloroplasts, cuticle, guard cells and stomata, upper and lower epidermis, palisade mesophyll, spongy mesophyll, vascular bundles, xylem and phloem in leaves of a dicotyledonous plant
- **Explain how the internal structure of a leaf is adapted for photosynthesis**

Mineral requirements

- Describe the importance of: – nitrate ions for making amino acids – magnesium ions for making chlorophyll
- **Explain the effects of nitrate ion and magnesium ion deficiency on plant growth**

Human nutrition

Diet

- State what is meant by the term balanced diet for humans
- Explain how age, gender and activity affect the dietary needs of humans including during pregnancy and whilst breast-feeding
- Describe the effects of malnutrition in relation to starvation, constipation, coronary heart disease, obesity and scurvy
- List the principal sources of, and describe the dietary importance of: – carbohydrates – fats – proteins – vitamins, limited to C and D – mineral salts, limited to calcium and iron – fibre (roughage) – water
- **Explain the causes and effects of vitamin D and iron deficiencies**
- **Explain the causes and effects of protein-energy malnutrition, e.g. kwashiorkor and marasmus**

Alimentary canal

- Define ingestion as the taking of substances, e.g. food and drink, into the body through the mouth

- Define mechanical digestion as the breakdown of food into smaller pieces without chemical change to the food molecules
- Define chemical digestion as the breakdown of large, insoluble molecules into small, soluble molecules
- Define absorption as the movement of small food molecules and ions through the wall of the intestine into the blood
- Define assimilation as the movement of digested food molecules into the cells of the body where they are used, becoming part of the cells
- Define egestion as the passing out of food that has not been digested or absorbed, as faeces, through the anus
- Describe diarrhoea as the loss of watery faeces
- Outline the treatment of diarrhoea using oral rehydration therapy
- Describe cholera as a disease caused by a bacterium
- Identify the main regions of the alimentary canal and associated organs, limited to mouth, salivary glands, oesophagus, stomach, small intestine (duodenum and ileum), pancreas, liver, gall bladder and large intestine (colon, rectum, anus)
- Describe the functions of the regions of the alimentary canal listed above, in relation to ingestion, digestion, absorption, assimilation and egestion of food
- **Explain that the cholera bacterium produces a toxin that causes secretion of chloride ions into the small intestine, causing osmotic movement of water into the gut, causing diarrhoea, dehydration and loss of salts from blood**

Mechanical digestion

- Identify the types of human teeth (incisors, canines, premolars and molars)
- Describe the structure of human teeth, limited to enamel, dentine, pulp, nerves and cement, as well as the gums
- Describe the functions of the types of human teeth in mechanical digestion of food
- State the causes of dental decay in terms of a coating of bacteria and food on teeth, the bacteria respiring sugars in the food, producing acid which dissolves the enamel and dentine
- Describe the proper care of teeth in terms of diet and regular brushing

Chemical digestion

- State the significance of chemical digestion in the alimentary canal in producing small, soluble molecules that can be absorbed
- State the functions of enzymes as follows: – amylase breaks down starch to simpler sugars – protease breaks down protein to amino acids – lipase breaks down fats to fatty acids and glycerol
- State where, in the alimentary canal, amylase, protease and lipase are secreted
- State the functions of the hydrochloric acid in gastric juice, limited to killing bacteria in food and giving an acid pH for enzymes
- **Describe the digestion of starch in the alimentary canal: – amylase is secreted into the alimentary canal and breaks down starch to maltose – maltose is broken down by maltase to glucose on the membranes of the epithelium lining the small intestine**
- **Describe pepsin and trypsin as two protease enzymes that function in different parts of the alimentary canal: – pepsin in the stomach – trypsin in the small intestine**
- **Explain the functions of the hydrochloric acid in gastric juice, limited to the low pH: – denaturing enzymes in harmful microorganisms in food – giving the optimum pH for pepsin activity**
- **Outline the role of bile in neutralising the acidic mixture of food and gastric juices entering the duodenum from the stomach, to provide a suitable pH for enzyme action**
- **Outline the role of bile in emulsifying fats to increase the surface area for the chemical digestion of fat to fatty acids and glycerol by lipase**

Absorption

- Identify the small intestine as the region for the absorption of digested food
- State that water is absorbed in both the small intestine and the colon, but that most absorption of water happens in the small intestine
- **Explain the significance of villi and microvilli in increasing the internal surface area of the small intestine**
- **Describe the structure of a villus**
- **Describe the roles of capillaries and lacteals in villi**

Transport in plants

Transport in plants

- State the functions of xylem and phloem
- Identify the position of xylem and phloem as seen in sections of roots, stems and leaves, limited to non-woody dicotyledonous plants

Water uptake

- Identify root hair cells, as seen under the light microscope, and state their functions
- State the pathway taken by water through root, stem and leaf as root hair cell, root cortex cells, xylem and mesophyll cells
- Investigate, using a suitable stain, the pathway of water through the above ground parts of a plant
- **Explain that the large surface area of root hairs increases the rate of the absorption of water by osmosis and ions by active transport**

Transpiration

- State that water is transported from the roots to leaves through the xylem vessels
- Define transpiration as loss of water vapour from plant leaves by evaporation of water at the surfaces of the mesophyll cells followed by diffusion of water vapour through the stomata
- Investigate and describe the effects of variation of temperature and humidity on transpiration rate
- **Explain how water vapour loss is related to the large surface area of cell surfaces, interconnecting air spaces and stomata**
- **Explain the mechanism by which water moves upwards in the xylem in terms of a transpiration pull that draws up a column of water molecules, held together by cohesion**
- **Explain how and why wilting occurs**
- **Explain the effects of variation of temperature and humidity on transpiration rate**

Translocation

- **Define translocation in terms of the movement of sucrose and amino acids in phloem: – from regions of production (source) – to regions of storage OR to regions where they are used in respiration or growth (sink)**
- **Explain that some parts of a plant may act as a source and a sink at different times during the life of a plant**

Transport in animals

Transport in animals

- Describe the circulatory system as a system of blood vessels with a pump and valves to ensure one-way flow of blood
- **Describe the single circulation of a fish**

- **Describe the double circulation of a mammal**
- **Explain the advantages of a double circulation**

Heart

- Name and identify the structures of the mammalian heart, limited to the muscular wall, the septum, the left and right ventricles and atria, one-way valves and coronary arteries
- State that blood is pumped away from the heart into arteries and returns to the heart in veins
- State that the activity of the heart may be monitored by ECG, pulse rate and listening to sounds of valves closing
- Investigate and state the effect of physical activity on the pulse rate
- Describe coronary heart disease in terms of the blockage of coronary arteries and state the possible risk factors as diet, stress, smoking, genetic predisposition, age and gender
- **Name and identify the atrioventricular and semilunar valves in the mammalian heart**
- **Explain the relative thickness: – of the muscle wall of the left and right ventricles – of the muscle wall of the atria compared to that of the ventricles**
- **Explain the importance of the septum in separating oxygenated and deoxygenated blood**
- **Describe the functioning of the heart in terms of the contraction of muscles of the atria and ventricles and the action of the valves**
- **Explain the effect of physical activity on the heart rate**
- **Discuss the roles of diet and exercise in the prevention of coronary heart disease**
- **Describe ways in which coronary heart disease may be treated, limited to drug treatment with aspirin and surgery (stents, angioplasty and by-pass)**

Blood and lymphatic vessels

- Describe the structure and functions of arteries, veins and capillaries
- Name the main blood vessels to and from the: – heart, limited to vena cava, aorta, pulmonary artery and pulmonary vein – lungs, limited to the pulmonary artery and pulmonary vein – kidney, limited to the renal artery and renal vein
- **Explain how the structures of arteries, veins and capillaries are adapted for their functions**
- **State the function of arterioles, venules and shunt vessels**
- **Outline the lymphatic system in terms of lymphatic vessels and lymph nodes**
- **Describe the function of the lymphatic system in the circulation of body fluids and the protection of the body from infection**

Blood

- List the components of blood as red blood cells, white blood cells, platelets and plasma
- Identify red and white blood cells, as seen under the light microscope, on prepared slides and in diagrams and photomicrographs
- State the functions of the following components of blood: – red blood cells in transporting oxygen, including the role of haemoglobin – white blood cells in phagocytosis and antibody production – platelets in clotting (details are not required) – plasma in the transport of blood cells, ions, soluble nutrients, hormones and carbon dioxide
- **Identify lymphocyte and phagocyte white blood cells, as seen under the light microscope, on prepared slides and in diagrams and photomicrographs**
- **State the functions of: – lymphocytes – antibody production – phagocytes – phagocytosis**
- **Describe the process of clotting as the conversion of fibrinogen to fibrin to form a mesh**
- **State the roles of blood clotting as preventing blood loss and preventing the entry of pathogens**
- **Describe the transfer of materials between capillaries and tissue fluid (details of the roles of water potential and hydrostatic pressure are not required)**

Gas exchange in humans

- List the features of gas exchange surfaces in humans, limited to large surface area, thin surface, good blood supply and good ventilation with air
- Name and identify the lungs, diaphragm, ribs, intercostal muscles, larynx, trachea, bronchi, bronchioles, alveoli and associated capillaries
- State the differences in composition between inspired and expired air, limited to oxygen, carbon dioxide and water vapour
- Use limewater as a test for carbon dioxide to investigate the differences in composition between inspired and expired air
- Investigate and describe the effects of physical activity on rate and depth of breathing
- **Name and identify the internal and external intercostal muscles**
- **State the functions of the cartilage in the trachea**
- **Explain the role of the ribs, the internal and external intercostal muscles and the diaphragm in producing volume and pressure changes in the thorax leading to the ventilation of the lungs**
- **Explain the differences in composition between inspired and expired air**
- **Explain the link between physical activity and rate and depth of breathing in terms of the increased carbon dioxide concentration in the blood, detected by the brain, causing an increased rate of breathing**
- **Explain the role of goblet cells, mucus and ciliated cells in protecting the gas exchange system from pathogens and particles**

Respiration

- State the uses of energy in the body of humans: muscle contraction, protein synthesis, cell division, active transport, growth, the passage of nerve impulses and the maintenance of a constant body temperature
- State that respiration involves the action of enzymes in cells

Aerobic respiration

- Define aerobic respiration as the chemical reactions in cells that use oxygen to break down nutrient molecules to release energy
- State the word equation for aerobic respiration as glucose + oxygen → carbon dioxide + water
- Investigate the uptake of oxygen by respiring organisms, such as arthropods and germinating seeds
- **State the balanced chemical equation for aerobic respiration as $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$**
- **Investigate the effect of temperature on the rate of respiration of germinating seeds**

Anaerobic respiration

- Define anaerobic respiration as the chemical reactions in cells that break down nutrient molecules to release energy without using oxygen
- State the word equations for anaerobic respiration in muscles during vigorous exercise (glucose → lactic acid) and the microorganism yeast (glucose → alcohol + carbon dioxide)
- State that anaerobic respiration releases much less energy per glucose molecule than aerobic respiration
- **State the balanced chemical equation for anaerobic respiration in the microorganism yeast as $C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$**
- **State that lactic acid builds up in muscles and blood during vigorous exercise causing an oxygen debt**

- **Outline how the oxygen debt is removed during recovery, limited to: – aerobic respiration of lactic acid in the liver – continuation, after exercise, of fast heart rate to transport lactic acid in blood from muscles to the liver – continuation, after exercise, of deeper breathing supplying oxygen for aerobic respiration of lactic acid**

Drugs

Drugs

- Define a drug as any substance taken into the body that modifies or affects chemical reactions in the body

Medicinal drugs

- Describe the use of antibiotics for the treatment of bacterial infection
- State that some bacteria are resistant to antibiotics which reduces the effectiveness of antibiotics
- State that antibiotics kill bacteria but do not affect viruses
- **Explain how development of resistant bacteria such as MRSA can be minimised, limited to using antibiotics only when essential and ensuring treatment is completed**
- **Explain why antibiotics kill bacteria, but do not affect viruses**

Misused drugs

- Describe the effects of excessive alcohol consumption and abuse of heroin, limited to: – powerful depressant drugs – effect on reaction times and self-control – addiction and withdrawal symptoms – negative social implications, e.g. crime
- State that injecting heroin can cause infections such as HIV
- State that excessive alcohol consumption can cause liver damage
- State that tobacco smoking can cause chronic obstructive pulmonary disease (COPD), lung cancer and coronary heart disease
- Describe the effects on the gas exchange system of tobacco smoke and its major toxic components, limited to carbon monoxide, nicotine and tar
- State that the liver is the site of breakdown of alcohol and other toxins
- **Explain how heroin affects the nervous system, limited to its effect on the function of synapses**
- **Discuss the evidence for the link between smoking and lung cancer**
- **Discuss the use of hormones to improve sporting performance, limited to testosterone and anabolic steroids**

Organisms and their environment

Energy flow

- State that the Sun is the principal source of energy input to biological systems
- **Describe the flow of energy through living organisms including light energy from the sun and chemical energy in organisms and its eventual transfer to the environment**

Food chains and food webs

- Define a food chain as showing the transfer of energy from one organism to the next, beginning with a producer
- State that energy is transferred between organisms in a food chain by ingestion
- Construct simple food chains
- Define a food web as a network of interconnected food chains
- Define producer as an organism that makes its own organic nutrients, usually using energy from sunlight, through photosynthesis
- Define consumer as an organism that gets its energy by feeding on other organisms

- State that consumers may be classed as primary, secondary and tertiary according to their position in a food chain
- Define herbivore as an animal that gets its energy by eating plants
- Define carnivore as an animal that gets its energy by eating other animals
- Define decomposer as an organism that gets its energy from dead or waste organic material
- Interpret food chains and food webs in terms of identifying producers and consumers
- **Describe how energy is transferred between trophic levels**
- **Define trophic level as the position of an organism in a food chain, food web, pyramid of numbers or pyramid of biomass**
- **Explain why the transfer of energy from one trophic level to another is inefficient**
- **Explain why food chains usually have fewer than five trophic levels**
- **Explain why there is a greater efficiency in supplying plants as human food, and that there is a relative inefficiency in feeding crop plants to livestock that will be used as food**
- **Identify producers, primary consumers, secondary consumers, tertiary consumers and quaternary consumers as the trophic levels in food webs, food chains, pyramids of numbers and pyramids of biomass**

Food chains and food webs continued

- Use food chains and food webs to describe the impacts humans have through over-harvesting of food species and through introducing foreign species to a habitat
- Draw, describe and interpret pyramids of numbers
- **Draw, describe and interpret pyramids of biomass**
- **Discuss the advantages of using a pyramid of biomass rather than a pyramid of numbers to represent a food chain**

Nutrient cycles

- Describe the carbon cycle, limited to photosynthesis, respiration, feeding, decomposition, fossilisation and combustion
- Discuss the effects of the combustion of fossil fuels and the cutting down of forests on the carbon dioxide concentrations in the atmosphere
- Describe the water cycle, limited to evaporation, transpiration, condensation and precipitation
- **Describe the nitrogen cycle in terms of: – decomposition of plant and animal protein to ammonium ions – nitrification – nitrogen fixation by lightning and bacteria – absorption of nitrate ions by plants – production of amino acids and proteins – feeding and digestion of proteins – deamination – denitrification**
- **State the roles of microorganisms in the nitrogen cycle, limited to decomposition, nitrification, nitrogen fixation and denitrification (generic names of individual bacteria, e.g. Rhizobium, are not required)**

Population size

- Define population as a group of organisms of one species, living in the same area, at the same time
- Identify and state the factors affecting the rate of population growth for a population of an organism, limited to food supply, predation and disease
- Discuss the increase in human population size over the past 250 years and its social and environmental implications
- Interpret graphs and diagrams of human population growth
- **Define community as all of the populations of different species in an ecosystem**
- **Define ecosystem as a unit containing the community of organisms and their environment, interacting together, e.g. a decomposing log, or a lake**

- **Identify the lag, exponential (log), stationary and death phases in the sigmoid population growth curve for a population growing in an environment with limited resources**
- **Explain the factors that lead to each phase in the sigmoid curve of population growth, making reference, where appropriate, to the role of limiting factors**

Human influences on ecosystems

Food supply

- State how modern technology has resulted in increased food production in terms of: – agricultural machinery to use larger areas of land and improve efficiency – chemical fertilisers to improve yields – insecticides to improve quality and yield – herbicides to reduce competition with weeds – selective breeding to improve production by crop plants and livestock, e.g. cattle, fish and poultry
- Describe the negative impacts to an ecosystem of large-scale monocultures of crop plants
- Describe the negative impacts to an ecosystem of intensive livestock production
- **Discuss the social, environmental and economic implications of providing sufficient food for an increasing human global population**
- **Discuss the problems which contribute to famine including unequal distribution of food, drought and flooding, increasing population and poverty**

Habitat destruction

- Describe the reasons for habitat destruction, limited to: – increased area for food crop growth, livestock production and housing – extraction of natural resources – marine pollution
- State that through altering food webs and food chains, humans can have a negative impact on habitats
- List the undesirable effects of deforestation as an example of habitat destruction, to include extinction, loss of soil, flooding and increase of carbon dioxide in the atmosphere
- **Explain the undesirable effects of deforestation on the environment**

Pollution

- State the sources and effects of pollution of land and water, e.g. rivers, lakes and the sea, by insecticides, herbicides and by nuclear fall-out
- State the sources and effects of pollution of water (rivers, lakes and the sea) by chemical waste, discarded rubbish, untreated sewage and fertilisers
- State the sources and effects of pollution of the air by methane and carbon dioxide, limited to the enhanced greenhouse effect and climate change
- **Explain the process of eutrophication of water in terms of: – increased availability of nitrate and other ions – increased growth of producers – increased decomposition after death of producers – increased aerobic respiration by decomposers – reduction in dissolved oxygen – death of organisms requiring dissolved oxygen in water**
- **Discuss the effects of non-biodegradable plastics in the environment, in both aquatic and terrestrial ecosystems**
- **Discuss the causes and effects on the environment of acid rain**
- **State the measures that are taken to reduce sulfur dioxide pollution and reduce the impact of acid rain**
- **Explain how increases in carbon dioxide and methane concentrations in the atmosphere cause an enhanced greenhouse effect that leads to climate change**
- **Describe the negative impacts of female contraceptive hormones in water courses, limited to reduced sperm count in men and feminisation of aquatic organisms**

Conservation

- Define a sustainable resource as one which is produced as rapidly as it is removed from the environment so that it does not run out
- Explain the need to conserve non-renewable resources, limited to fossil fuels

- State that some resources can be maintained, limited to forests and fish stocks
- State that products can be reused or recycled, limited to paper, glass, plastic and metal
- Outline how sewage is treated to make the water that it contains safe to return to the environment or for human use
- Explain why organisms become endangered or extinct, limited to climate change, habitat destruction, hunting, pollution and introduced species
- Describe how endangered species can be conserved, limited to monitoring and protecting species and habitats, education, captive breeding programmes and seed banks
- **Define the term sustainable development as development providing for the needs of an increasing human population without harming the environment**
- **Explain how forests and fish stocks can be sustained using education, legal quotas and re-stocking**
- **Explain that sustainable development requires: – management of conflicting demands – planning and co-operation at local, national and international levels**
- **Explain the risks to a species if the population size drops, reducing variation (knowledge of genetic drift is not required)**
- **Explain reasons for conservation programmes, to include: – reducing extinction – protecting vulnerable environments – maintaining ecosystem functions, limited to nutrient cycling and resource provision, e.g. food, drugs, fuel and genes**

Year 10 and Year 11 Chemistry

(Cambridge IGCSE Syllabus 0620)

IGCSE Chemistry	Year 10	Year 11
The particulate nature of matter	S1	
Experimental techniques	S1	
Atoms, elements and compounds	S1	
Stoichiometry	S2	
Electricity and chemistry		S1
Chemical energetics	S2	S1
Chemical reactions	S2	S1
Acids, bases and salts	S2	
The Periodic Table	S1	
Metals		S2
Air and water		S2
Sulfur		S1
Carbonates		S2
Organic chemistry		S2

Syllabus references in **bold** are for students sitting the Extended paper.

The particulate nature of matter

- State the distinguishing properties of solids, liquids and gases
- Describe the structure of solids, liquids and gases in terms of particle separation, arrangement and types of motion
- Describe changes of state in terms of melting, boiling, evaporation, freezing, condensation and sublimation
- Describe qualitatively the pressure and temperature of a gas in terms of the motion of its particles
- Show an understanding of the random motion of particles in a suspension (sometimes known as
  Brownian motion) as evidence for the kinetic particle (atoms, molecules or ions) model of matter
- Describe and explain diffusion
- **Explain changes of state in terms of the kinetic theory**
- **Describe and explain Brownian motion in terms of random molecular bombardment**
- **State evidence for Brownian motion**
- **Describe and explain dependence of rate of diffusion on molecular mass**

Experimental techniques

Measurement

- Name appropriate apparatus for the measurement of time, temperature, mass and volume, including burettes, pipettes and measuring cylinders

Criteria of purity

- Demonstrate knowledge and understanding of paper chromatography
- Interpret simple chromatograms
- Identify substances and assess their purity from melting point and boiling point information
- Understand the importance of purity in substances in everyday life, e.g. foodstuffs and drugs
- **Interpret simple chromatograms, including the use of Rf values**
- **Outline how chromatography techniques can be applied to colourless substances by exposing chromatograms to substances called locating agents (Knowledge of specific locating agents is not required.)**

Methods of purification

- Describe and explain methods of purification by the use of a suitable solvent, filtration, crystallisation and distillation (including use of fractionating column). (Refer to the fractional distillation of petroleum and products of fermentation)
- Suggest suitable purification techniques, given information about the substances involved

Atomic structure and the Periodic Table

- State the relative charges and approximate relative masses of protons, neutrons and electrons
- Define *proton number* (atomic number) as the number of protons in the nucleus of an atom
- Define *nucleon number* (mass number) as the total number of protons and neutrons in the nucleus of an atom
- Use proton number and the simple structure of atoms to explain the basis of the Periodic Table, with special reference to the elements of proton number 1 to 20
- Define *isotopes* as atoms of the same element which have the same proton number but a different nucleon number
- State the two types of isotopes as being radioactive and non-radioactive
- State one medical and one industrial use of radioactive isotopes

- Describe the build-up of electrons in 'shells' and understand the significance of the noble gas electronic structures and of the outer shell electrons (The ideas of the distribution of electrons in s and p orbitals and in d block elements are **not** required.) Note: a copy of the Periodic Table will be available in Papers 1, 2, 3 and 4.
- **Understand that isotopes have the same properties because they have the same number of electrons in their outer shell**

Bonding: the structure of matter
- Describe the differences between elements, mixtures and compounds, and between metals and non-metals
- Describe an alloy, such as brass, as a mixture of a metal with other elements

Ions and ionic bonds
- Describe the formation of ions by electron loss or gain
- Describe the formation of ionic bonds between elements from Groups I and VII
- **Describe the formation of ionic bonds between metallic and non-metallic elements**
- **Describe the lattice structure of ionic compounds as a regular arrangement of alternating positive and negative ions**

Molecules and covalent bonds
- Describe the formation of single covalent bonds in H_2, Cl_2, H_2O, CH_4, NH_3 and HCl as the sharing of pairs of electrons leading to the noble gas configuration
- Describe the differences in volatility, solubility an electrical conductivity between ionic and covalent compounds
- **Describe the electron arrangement in more complex covalent molecules such as N_2, C_2H_4, CH_3OH and CO_2**
- **Explain the differences in melting point and boiling point of ionic and covalent compounds in terms of attractive forces**

Macromolecules
- Describe the giant covalent structures of graphite and diamond
- Relate their structures to their uses, e.g. graphite as a lubricant and a conductor, and diamond in cutting tools
- **Describe the macromolecular structure of silicon(IV) oxide (silicon dioxide)**
- **Describe the similarity in properties between diamond and silicon(IV) oxide, related to their structures**

Metallic bonding
• Describe metallic bonding as a lattice of positive ions in a 'sea of electrons' and use this to describe the electrical conductivity and malleability of metals

Stoichiometry

Stoichiometry
- Use the symbols of the elements and write the formulae of simple compounds
- Deduce the formula of a simple compound from the relative numbers of atoms present
- Deduce the formula of a simple compound from a model or a diagrammatic representation
- Construct word equations and simple balanced chemical equations
- Define relative atomic mass, Ar , as the average mass of naturally occurring atoms of an element on a scale where the 12C atom has a mass of exactly 12 units
- Define relative molecular mass, Mr , as the sum of the relative atomic masses (Relative formula mass or Mr will be used for ionic compounds.) (Calculations involving reacting masses in simple

proportions may be set. Calculations will not involve the mole concept.)

- Determine the formula of an ionic compound from the charges on the ions present
- Construct equations with state symbols, including ionic equations
- Deduce the balanced equation for a chemical reaction, given relevant information

The mole concept

- Define the *mole* and the *Avogadro constant*
- Use the molar gas volume, taken as 24 dm^3 at room temperature and pressure
- Calculate stoichiometric reacting masses, volumes of gases and solutions, and concentrations of solutions expressed in g / dm^3 and mol / dm^3 (Calculations involving the idea of limiting reactants may be set. Questions on the gas laws and the conversion of gaseous volumes to different temperatures and pressures will not be set.)
- Calculate empirical formulae and molecular formulae
- Calculate percentage yield and percentage purity

Electricity and chemistry

- Define electrolysis as the breakdown of an ionic compound, molten or in aqueous solution, by the passage of electricity
- Describe the electrode products and the observations made during the electrolysis of: – molten lead(II) bromide – concentrated hydrochloric acid – concentrated aqueous sodium chloride – dilute sulfuric acid between inert electrodes (platinum or carbon)
- State the general principle that metals or hydrogen are formed at the negative electrode (cathode), and that non-metals (other than hydrogen) are formed at the positive electrode (anode)
- Predict the products of the electrolysis of a specified binary compound in the molten state
- Describe the electroplating of metals
- Outline the uses of electroplating
- Describe the reasons for the use of copper and (steelcored) aluminium in cables, and why plastics and ceramics are used as insulators
- Relate the products of electrolysis to the electrolyte and electrodes used, exemplified by the specific examples in the Core together with aqueous copper(II) sulfate using carbon electrodes and using copper electrodes (as used in the refining of copper)
- Describe electrolysis in terms of the ions present and reactions at the electrodes in the examples given
- Predict the products of electrolysis of a specified halide in dilute or concentrated aqueous solution
- Construct ionic half-equations for reactions at the cathode
- Describe the transfer of charge during electrolysis to include: – the movement of electrons in the metallic conductor – the removal or addition of electrons from the external circuit at the electrodes – the movement of ions in the electrolyte
- Describe the production of electrical energy from simple cells, i.e. two electrodes in an electrolyte. (This should be linked with the reactivity series and redox)
- Describe, in outline, the manufacture of: – aluminium from pure aluminium oxide in molten cryolite – chlorine, hydrogen and sodium hydroxide from concentrated aqueous sodium chloride (Starting materials and essential conditions should be given but not technical details or diagrams.)

Energetics of a reaction

- Describe the meaning of *exothermic* and *endothermic* reactions
- Interpret energy level diagrams showing exothermic and endothermic reactions
- Describe bond breaking as an endothermic process and bond forming as an exothermic process

- **Draw and label energy level diagrams for exothermic and endothermic reactions using data provided**
- **Calculate the energy of a reaction using bond energies**

Energy transfer
- Describe the release of heat energy by burning fuels
- State the use of hydrogen as a fuel
- Describe radioactive isotopes, such as ^{235}U, as a source of energy
- **Describe the use of hydrogen as a fuel reacting with oxygen to generate electricity in a fuel cell (Details of the construction and operation of a fuel cell are not required.)**

Chemical reactions
Physical and chemical changes
• Identify physical and chemical changes, and understand the differences between them

Rate (speed) of reaction
- Describe and explain the effect of concentration, particle size, catalysts (including enzymes) and
  temperature on the rate of reactions
- Describe the application of the above factors to the danger of explosive combustion with fine powders (e.g. flour mills) and gases (e.g. methane in mines)
- Demonstrate knowledge and understanding of a practical method for investigating the rate of a reaction involving gas evolution
- Interpret data obtained from experiments concerned with rate of reaction Note: Candidates should be encouraged to use the term rate rather than speed.
- **Devise and evaluate a suitable method for investigating the effect of a given variable on the rate of a reaction**
- **Describe and explain the effects of temperature and concentration in terms of collisions between reacting particles (An increase in temperature causes an increase in collision rate and more of the colliding molecules have sufficient energy (activation energy) to react whereas an increase in concentration only causes an increase in collision rate.)**
- **Describe and explain the role of light in photochemical reactions and the effect of light on the rate of these reactions (This should be linked to section 14.4.)**
- **Describe the use of silver salts in photography as a process of reduction of silver ions to silver;**
  and photosynthesis as the reaction between carbon dioxide and water in the presence of chlorophyll and sunlight (energy) to produce glucose and oxygen

Reversible reactions
- Understand that some chemical reactions can be reversed by changing the reaction conditions (Limited to the effects of heat and water on hydrated and anhydrous copper(II) sulfate and cobalt(II)
  chloride.) (Concept of equilibrium is not required.)
- **Predict the effect of changing the conditions (concentration, temperature and pressure) on other reversible reactions**
- **Demonstrate knowledge and understanding of the concept of equilibrium**

Redox
- Define oxidation and reduction in terms of oxygen loss/gain. (Oxidation state limited to its use to
  name ions, e.g. iron(II), iron(III), copper(II), manganate(VII).)
- **Define *redox* in terms of electron transfer**
- **Identify redox reactions by changes in oxidation state and by the colour changes involved when using acidified potassium manganate(VII), and potassium iodide. (Recall of equations involving KMnO4 is not required.)**

- Define *oxidising agent* as a substance which oxidises another substance during a redox reaction. Define *reducing agent* as a substance which reduces another substance during a redox reaction.
- Identify oxidising agents and reducing agents from simple equations

Acids, bases and salts

The characteristic properties of acids and bases

- Describe the characteristic properties of acids as reactions with metals, bases, carbonates and effect on litmus and methyl orange
- Describe the characteristic properties of bases as reactions with acids and with ammonium salts and effect on litmus and methyl orange
- Describe neutrality and relative acidity and alkalinity in terms of pH measured using Universal Indicator paper (whole numbers only)
- Describe and explain the importance of controlling acidity in soil
- Define acids and bases in terms of proton transfer, limited to aqueous solutions
- Describe the meaning of weak and strong acids and bases

Types of oxides

- Classify oxides as either acidic or basic, related to metallic and non-metallic character
- Further classify other oxides as neutral or amphoteric

Preparation of salts

• Demonstrate knowledge and understanding of preparation, separation and purification of salts as examples of some of the techniques specified in section 2.2.2 and the reactions specified in section 8.1

- Demonstrating knowledge and understanding of the preparation of insoluble salts by precipitation
- Suggest a method of making a given salt from a suitable starting material, given appropriate information

Identification of ions and gases

• Describe the following tests to identify: *aqueous cations:* aluminium, ammonium, calcium, chromium(III), copper(II), iron(II), iron(III) and zinc (using aqueous sodium hydroxide and aqueous ammonia as appropriate) (Formulae of complex ions are **not** required.)
cations: use of the flame test to identify lithium, sodium, potassium and copper(II) *anions:* carbonate (by reaction with dilute acid and then limewater), chloride, bromide and iodide (by reaction under acidic conditions with aqueous silver nitrate), nitrate (by reduction with aluminium), sulfate (by reaction under acidic conditions with aqueous barium ions) and sulfite (by reaction with dilute acids and then aqueous potassium manganate(VII))
*gases:*ammonia (using damp red litmus paper), carbon dioxide (using limewater), chlorine (using damp litmus paper), hydrogen (using lighted splint), oxygen (using a glowing splint), and sulfur dioxide (using aqueouspotassium manganate(VII))

The Periodic Table

- Describe the Periodic Table as a method of classifying elements and its use to predict properties of elements

Periodic trends

- Describe the change from metallic to non-metallic character across a period
- Describe and explain the relationship between Group number, number of outer shell electrons and metallic/nonmetallic character

Group properties

- Describe lithium, sodium and potassium in Group I as a collection of relatively soft metals showing a trend in melting point, density and reaction with water

- Predict the properties of other elements in Group I, given data, where appropriate
- Describe the halogens, chlorine, bromine and iodine in Group VII, as a collection of diatomic non-metals showing a trend in colour and density and state their reaction with other halide ions
- Predict the properties of other elements in Group VII, given data where appropriate
- **Identify trends in Groups, given information about the elements concerned**

Transition elements

- Describe the transition elements as a collection of metals having high densities, high melting points and forming coloured compounds, and which, as elements and compounds, often act as catalysts
- **Know that transition elements have variable oxidation states**

Noble gases

- Describe the noble gases, in Group VIII or 0, as being unreactive, monoatomic gases and explain this in terms of electronic structure
- State the uses of the noble gases in providing an inert atmosphere, i.e. argon in lamps, helium for filling balloons

Metals

Properties of metals

- List the general physical properties of metals
- Describe the general chemical properties of metals e.g. reaction with dilute acids and reaction with oxygen
- Explain in terms of their properties why alloys are used instead of pure metals
- Identify representations of alloys from diagrams of structure

Reactivity series

- Place in order of reactivity: potassium, sodium, calcium, magnesium, zinc, iron, (hydrogen) and copper, by reference to the reactions, if any, of the metals with: – water or steam – dilute hydrochloric acid and the reduction of their oxides with carbon
- Deduce an order of reactivity from a given set of experimental results
- **Describe the reactivity series as related to the tendency of a metal to form its positive ion, illustrated by its reaction, if any, with: – the aqueous ions – the oxides of the other listed metals**
- **Describe and explain the action of heat on the hydroxides, carbonates and nitrates of the listed metals**
- **Account for the apparent unreactivity of aluminium in terms of the oxide layer which adheres to the metal**

Extraction of metals

- Describe the ease in obtaining metals from their ores by relating the elements to the reactivity series
- Describe and state the essential reactions in the extraction of iron from hematite
- Describe the conversion of iron into steel using basic oxides and oxygen
- Know that aluminium is extracted from the ore bauxite by electrolysis
- Discuss the advantages and disadvantages of recycling metals, limited to iron/steel and aluminium
- **Describe in outline, the extraction of zinc from zinc blende**
- **Describe in outline, the extraction of aluminium from bauxite including the role of cryolite and the reactions at the electrodes**

Uses of metals

- Name the uses of aluminium: – in the manufacture of aircraft because of its strength and low density – in food containers because of its resistance to corrosion
- Name the uses of copper related to its properties (electrical wiring and in cooking utensils)
- Name the uses of mild steel (car bodies and machinery) and stainless steel (chemical plant and cutlery)
- **Explain the uses of zinc for galvanizing and for making brass**
- **Describe the idea of changing the properties of iron by the controlled use of additives to form steel alloys**

Air and water

Water

- Describe chemical tests for water using cobalt(II) chloride and copper(II) sulfate
- Describe, in outline, the treatment of the water supply in terms of filtration and chlorination
- Name some of the uses of water in industry and in the home
- **Discuss the implications of an inadequate supply of water, limited to safe water for drinking and water for irrigating crops**

Air

- State the composition of clean, dry air as being approximately 78% nitrogen, 21% oxygen and the remainder as being a mixture of noble gases and carbon dioxide
- Name the common pollutants in the air as being carbon monoxide, sulfur dioxide, oxides of nitrogen
  and lead compounds
- State the source of each of these pollutants: – carbon monoxide from the incomplete combustion
  of carbon-containing substances – sulfur dioxide from the combustion of fossil fuels which contain sulfur compounds (leading to 'acid rain') – oxides of nitrogen from car engines – lead compounds from leaded petrol
- State the adverse effect of these common pollutants on buildings and on health and discuss why these pollutants are of global concern
- State the conditions required for the rusting of iron
- Describe and explain methods of rust prevention, specifically paint and other coatings to exclude oxygen
- **Describe the separation of oxygen and nitrogen from liquid air by fractional distillation**
- **Describe and explain the presence of oxides of nitrogen in car engines and their catalytic removal**
- **Describe and explain sacrificial protection in terms of the reactivity series of metals and galvanising as a method of rust prevention**

Nitrogen and fertilisers

- Describe the need for nitrogen-, phosphorus- and potassium-containing fertilisers
- Describe the displacement of ammonia from its salts
- **Describe and explain the essential conditions for the manufacture of ammonia by the Haber process including the sources of the hydrogen and nitrogen, i.e. hydrocarbons or steam and air**

Carbon dioxide and methane

- State that carbon dioxide and methane are greenhouse gases and explain how they may contribute to climate change
- State the formation of carbon dioxide: – as a product of complete combustion of carboncontaining substances – as a product of respiration – as a product of the reaction between an acid and a
  Carbonate – from the thermal decomposition of a carbonate

- State the sources of methane, including decomposition of vegetation and waste gases from digestion in animals
- **Describe the carbon cycle, in simple terms, to include the processes of combustion, respiration and photosynthesis**

Sulfur

- Name some sources of sulfur
- Name the use of sulfur in the manufacture of sulfuric acid
- State the uses of sulfur dioxide as a bleach in the manufacture of wood pulp for paper and as a food preservative (by killing bacteria)
- **Describe the manufacture of sulfuric acid by the Contact process, including essential conditions and reactions**
- **Describe the properties and uses of dilute and concentrated sulfuric acid**

Carbonates

- Describe the manufacture of lime (calcium oxide) from calcium carbonate (limestone) in terms of thermal decomposition
- Name some uses of lime and slaked lime such as in treating acidic soil and neutralising acidic industrial waste products, e.g. flue gas desulfurisation
- Name the uses of calcium carbonate in the manufacture of iron and cement

Organic Chemistry

Names of compounds

Core

- Name and draw the structures of methane, ethane, ethene, ethanol, ethanoic acid and the products of their reactions
- State the type of compound present, given a chemical name ending in *-ane, -ene, -ol,* or *-oic acid* or a molecular structure
- **Name and draw the structures of the unbranched alkanes, alkenes (not *cis*/*trans*), alcohols and acids containing up to four carbon atoms per molecule**
- **Name and draw the structural formulae of the esters which can be made from unbranched alcohols and carboxylic acids, each containing up to four carbon atoms**

Fuels

- Name the fuels: coal, natural gas and petroleum
- Name methane as the main constituent of natural gas
- Describe petroleum as a mixture of hydrocarbons and its separation into useful fractions by fractional distillation
- Describe the properties of molecules within a fraction
- Name the uses of the fractions as: – refinery gas for bottled gas for heating and cooking – gasoline fraction for fuel (petrol) in cars – naphtha fraction for making chemicals – kerosene/paraffin fraction for jet fuel – diesel oil/gas oil for fuel in diesel engines – fuel oil fraction for fuel for ships and home heating systems – lubricating fraction for lubricants, waxes and polishes – bitumen for making roads

Homologous series

- Describe the concept of homologous series as a 'family' of similar compounds with similar chemical properties due to the presence of the same functional group
- **Describe the general characteristics of an homologous series**
- **Recall that the compounds in a homologous series have the same general formula**
- **Describe and identify structural isomerism**

Alkanes

- Describe the properties of alkanes (exemplified by methane) as being generally unreactive, except in terms of burning
- Describe the bonding in alkanes
- **Describe substitution reactions of alkanes with chlorine**

Alkenes

- Describe the manufacture of alkenes and of hydrogen by cracking
- Distinguish between saturated and unsaturated hydrocarbons: – from molecular structures – by reaction with aqueous bromine
- Describe the formation of poly(ethene) as an example of addition polymerisation of monomer units
- **Describe the properties of alkenes in terms of addition reactions with bromine, hydrogen and steam**

Alcohols

- Describe the manufacture of ethanol by fermentation and by the catalytic addition of steam to ethene
- Describe the properties of ethanol in terms of burning
- Name the uses of ethanol as a solvent and as a fuel
- **Outline the advantages and disadvantages of these two methods of manufacturing ethanol**

Carboxylic acids

- Describe the properties of aqueous ethanoic acid
- **Describe the formation of ethanoic acid by the oxidation of ethanol by fermentation and with acidified potassium manganate(VII)**
- **Describe ethanoic acid as a typical weak acid**
- **Describe the reaction of a carboxylic acid with an alcohol in the presence of a catalyst to give an ester**

Polymers

- Define polymers as large molecules built up from small units (monomers)
- **Understand that different polymers have different units and/or different linkages**

Synthetic polymers

- Name some typical uses of plastics and of man-made fibres such as nylon and *Terylene*
- Describe the pollution problems caused by nonbiodegradable plastics
- **Explain the differences between condensation and addition polymerisation**
- **Deduce the structure of the polymer product from a given alkene and *vice versa***
- **Describe the formation of nylon (a polyamide) and *Terylene* (a polyester) by condensation polymerisation, the structure of nylon and the structure of *Terylene* (Details of manufacture and mechanisms of these polymerisations are not required.)**

Natural polymers

- Name proteins and carbohydrates as constituents of food
- **Describe proteins as possessing the same (amide) linkages as nylon but with different units**
- **Describe the structure of proteins**
- **Describe the hydrolysis of proteins to amino acids (Structures and names are not required.)**
- **Describe complex carbohydrates in terms of a large number of sugar units**
- **Describe the hydrolysis of complex carbohydrates (e.g. starch), by acids or enzymes to give simple sugars**
- **Describe the fermentation of simple sugars to produce ethanol (and carbon dioxide) (Candidates will not be expected to give the molecular formulae of sugars.)**
- **Describe, in outline, the usefulness of chromatography in separating and identifying the products of hydrolysis of carbohydrates and proteins.**

Year 10 and Year 11 Physics

(Cambridge IGCSE Syllabus 0625)

IGCSE Physics	Year 10	Year 11
Length and time	S1	S1
Motion	S1	S1
Mass and weight	S1	S1
Density	S1	S1
Forces	S1	S1
Momentum		S1
Energy, work and power	S1	S1
Pressure	S1	S1
Simple kinetic molecular model of matter		S2
Thermal properties and temperature	S1	
Thermal processes	S1	
General wave properties	S2	
Light		S2
Electromagnetic spectrum		S2
Sound	S2	
Simple phenomena of magnetism	S2	
Electrical quantities	S2	
Electric circuits	S2	
Digital electronics		S2
Dangers of electricity	S2	
Electromagnetic effects		S2
The nuclear atom		S2
Radioactivity		S2

Syllabus references in **bold** are for students sitting the Extended paper.

General Physics

Length and time

- Use and describe the use of rules and measuring cylinders to find a length or a volume.
- Use and describe the use of clocks and devices, both analogue and digital, for measuring an interval of time.
- Obtain an average value for a small distance and for a short interval of time by measuring multiples (including the period of a pendulum).
- **Understand that a micrometer screw gauge is used to measure very small distances.**

Motion

- Define speed and calculate average speed from $\frac{\text{total distance}}{\text{total time}}$.
- Plot and interpret a speed time graph or a distance-time graph.
- Recognise from the shape of a speed-time graph when a body is
  - at rest
  - moving with constant speed
  - moving with changing speed.
- Calculate the area under a speed-time graph to work out the distance travelled for motion with constant acceleration.
- Demonstrate understanding that acceleration and deceleration are related to changing speed including qualitative analysis of the gradient of a speed-time graph.
- State that the acceleration of free fall for a body near to the Earth is constant.
- **Distinguish between speed and velocity.**
- **Define and calculate acceleration using $\frac{\text{change of velocity}}{\text{time taken}}$.**
- **Calculate speed from the gradient of a distance-time graph.**
- **Calculate acceleration from the gradient of a speed-time graph.**
- **Recognise linear motion for which the acceleration is constant.**
- **Recognise motion for which the acceleration is not constant.**
- **Understand deceleration as a negative acceleration.**
- **Describe qualitatively the motion of bodies falling in a uniform gravitational field with and without air resistance (including reference to terminal velocity).**

Mass and weight

- Show familiarity with the idea of the mass of a body.
- State that weight is a gravitational force.
- Distinguish between mass and weight.
- Recall and use the equation W = mg.
- Demonstrate that weights (and hence masses) may be compared using a balance.
- **Demonstrate an understanding that mass is a property that 'resists' change in motion.**
- **Describe, and use the concept of, weight as the effect of a gravitational field on a mass.**

Density

- Recall and use the equation $\rho = \frac{m}{V}$.
- Describe an experiment to determine the density of a liquid and of a regularly shaped solid and make the necessary calculation.

- Describe the determination of the density of an irregularly shaped solid by the method of displacement.
- Predict whether an object will float based on density data.

Effects of forces

Recognise that a force may produce a change in size and shape of a body.

- Plot and interpret extension-load graphs and describe the associated experimental procedure.
- Describe the ways in which a force may change the motion of a body.
- Find the resultant of two or more forces acting along the same line.
- Recognise that if there is no resultant force on a body it either remains at rest or continues at constant speed in a straight line.
- Understand friction as the force between two surfaces which impedes motion and results in heating
- Recognise air resistance as a form of friction.
- **State Hooke's Law and recall and use the expression F = kx, where k is the spring constant.**
- **Recognise the significance of the 'limit of proportionality' for an extension-load graph.**
- **Recall and use the relation between force, mass and acceleration (including the direction), F = ma.**
- **Describe qualitatively motion in a circular path due to a perpendicular force ($F = mv^2/r$ is not required).**

Turning effect

- Describe the moment of a force as a measure of its turning effect and give everyday examples.
- Understand that increasing force or distance from the pivot increases the moment of a force.
- Calculate moment using the product force × perpendicular distance from the pivot.
- Apply the principle of moments to the balancing of a beam about a pivot.
- **Apply the principle of moments to different situations.**

Conditions for equilibrium

- Recognise that, when there is no resultant force and no resultant turning effect, a system is in equilibrium.
- **Perform and describe an experiment (involving vertical forces) to show that there is no net moment on a body in equilibrium.**

Centre of mass

- Perform and describe an experiment to determine the position of the centre of mass of a plane lamina.
- Describe qualitatively the effect of the position of the centre of mass on the stability of simple objects.
-

Scalars and vectors

- **Understand that vectors have a magnitude and direction.**
- **Demonstrate an understanding of the difference between scalars and vectors and give common examples.**
- **Determine graphically the resultant of two vectors.**

Momentum

- **Understand the concepts of momentum and impulse.**
- **Recall and use the equation momentum = mass × velocity, p = mv.**
- **Recall and use the equation for impulse.**
- **Ft = mv – mu.**

- **Apply the principle of the conservation of momentum to solve simple problems in one dimension.**

Energy

- Identify changes in kinetic, gravitational potential, chemical, elastic (strain), nuclear and internal energy that have occurred as a result of an event or process.
- Recognise that energy is transferred during events and processes, including examples of transfer by forces (mechanical working), by electrical currents (electrical working), by heating and by waves.
- Apply the principle of conservation of energy to simple examples.
- **Recall and use the expressions kinetic energy = ½mv2 and change in gravitational potential energy = mg∆h.**
- **Apply the principle of conservation of energy to examples involving multiple stages.**
- **Explain that in any event or process the energy tends to become more spread out among the objects and surroundings (dissipated).**

Energy resources

Describe how electricity or other useful forms of energy may be obtained from:

– chemical energy stored in fuel
– water, including the energy stored in waves, in tides, and in water behind hydroelectric dams
– geothermal resources
– nuclear fission
– heat and light from the Sun (solar cells and panels)
– wind.

- Give advantages and disadvantages of each method in terms of renewability, cost, reliability, scale and environmental impact.
- Show a qualitative understanding of efficiency.
- **Understand that the Sun is the source of energy for all our energy resources except geothermal, nuclear and tidal.**
- **Show an understanding that energy is released by nuclear fusion in the Sun.**
- **Recall and use the equations:**

$$\text{efficiency} = \frac{\text{useful energy output}}{\text{energy input}} \times 100\%$$

$$\text{efficiency} = \frac{\text{useful power output}}{\text{power input}} \times 100\%.$$

Work

- Demonstrate understanding that work done = energy transferred.
- Relate (without calculation) work done to the magnitude of a force and the distance moved in the direction of the force.
- **Recall and use $W = Fd = \Delta E$.**

Power

- Relate (without calculation) power to work done and time taken, using appropriate examples.
- **Recall and use the equation $P = \Delta E / t$ in simple systems.**

Pressure

- Recall and use the equation p = F / A.
- Relate pressure to force and area, using appropriate examples.
- Describe the simple mercury barometer and its use in measuring atmospheric pressure.
- Relate (without calculation) the pressure beneath a liquid surface to depth and to density, using appropriate examples.
- Use and describe the use of a manometer.

Recall and use the equation p = hρg.

Thermal physics

States of matter

- State the distinguishing properties of solids, liquids and gases.

Molecular model

- Describe qualitatively the molecular structure of solids, liquids and gases in terms of the arrangement, separation and motion of the molecules.
- Interpret the temperature of a gas in terms of the motion of its molecules.
- Describe qualitatively the pressure of a gas in terms of the motion of its molecules.
- Show an understanding of the random motion of particles in a suspension as evidence for the kinetic molecular model of matter.
- Describe this motion (sometimes known as Brownian motion) in terms of random molecular bombardment.
- **Relate the properties of solids, liquids and gases to the forces and distances between molecules and to the motion of the molecules.**
- **Explain pressure in terms of the change of momentum of the particles striking the walls creating a force.**
- **Show an appreciation that massive particles may be moved by light, fast-moving molecules.**

Evaporation

- Describe evaporation in terms of the escape of more-energetic molecules from the surface of a liquid.
- Relate evaporation to the consequent cooling of the liquid.
- **Demonstrate an understanding of how temperature, surface area and draught over a surface influence evaporation.**
- **Explain the cooling of a body in contact with an evaporating liquid.**

Pressure changes

- Describe qualitatively, in terms of molecules, the effect on the pressure of a gas of:
  – a change of temperature at constant volume
  – a change of volume at constant temperature.
- **Recall and use the equation pV = constant for a fixed mass of gas at constant temperature.**

Thermal expansion of solids liquids and gases

- Describe qualitatively the thermal expansion of solids, liquids, and gases at constant pressure.
- Identify and explain some of the everyday applications and consequences of thermal expansion.
- **Explain, in terms of the motion and arrangement of molecules, the relative order of the magnitude of the expansion of solids, liquids and gases.**

Measurement of temperature

- Appreciate how a physical property that varies with temperature may be used for the measurement of temperature, and state examples of such properties.
- Recognise the need for and identify fixed points.
- Describe and explain the structure and action of liquid-in-glass thermometers.
- **Demonstrate understanding of sensitivity, range and linearity.**
- **Describe the structure of a thermocouple and show understanding of its use as a thermometer for measuring high temperatures and those that vary rapidly.**
- **Describe and explain how the structure of a liquid-in-glass thermometer relates to its sensitivity, range and linearity.**

Thermal capacity (heat capacity)

- Relate a rise in the temperature of a body to an increase in its internal energy.
- Show an understanding of what is meant by the thermal capacity of a body.
- **Give a simple molecular account of an increase in internal energy.**
- **Recall and use the equation thermal capacity = mc.**
- **Define specific heat capacity.**
- **Describe an experiment to measure the specific heat capacity of a substance.**
- **Recall and use the equation change in energy = mcΔT.**

Melting and boiling

- Describe melting and boiling in terms of energy input without a change in temperature.
- State the meaning of melting point and boiling point.
- Describe condensation and solidification in terms of molecules.
- **Distinguish between boiling and evaporation.**
- **Use the terms latent heat of vaporisation and latent heat of fusion and give a molecular interpretation of latent heat.**
- **Define specific latent heat.**
- **Describe an experiment to measure specific latent heats for steam and for ice.**
- **Recall and use the equation energy = ml.**

Conduction

- Describe experiments to demonstrate the properties of good and bad thermal conductors.
- **Give a simple molecular account of conduction in solids including lattice vibration and transfer by electrons.**

Convection

- Recognise convection as an important method of thermal transfer in fluids.
- Relate convection in fluids to density changes and describe experiments to illustrate convection

Radiation

- Identify infra-red radiation as part of the electromagnetic spectrum.
- Recognise that thermal energy transfer by radiation does not require a medium.

- Describe the effect of surface colour (black or white) and texture (dull or shiny) on the emission, absorption and reflection of radiation.
- **Describe experiments to show the properties of good and bad emitters and good and bad absorbers of infra-red radiation.**
- **Show understanding that the amount of radiation emitted also depends on the surface temperature and surface area of a body.**

Consequences of energy transfer

- Identify and explain some of the everyday applications and consequences of conduction, convection and radiation.

Properties of waves, including light and sound

General wave properties

- Describe what is meant by wave motion as illustrated by vibration in ropes and springs and by experiments using water waves
- Use the term *wavefront*
- Give the meaning of *speed*, *frequency*, *wavelength* and *amplitude*
- Distinguish between transverse and longitudinal waves and give suitable examples
- Describe the use of water waves to show:
  - reflection at a plane surface
  - refraction due to a change of speed
  - diffraction produced by wide and narrow gaps
- **Recall and use the equation $v = f\lambda$**
- **Interpret reflection, refraction and diffraction using wave theory**

Light
Reflection of light

- Describe the formation of an optical image by a plane mirror, and give its characteristics
- Use the law angle of incidence = angle of reflection
- **Perform simple constructions, measurements and calculations**

Refraction of light

- Describe an experimental demonstration of the refraction of light
- Use the terminology for the angle of incidence *i* and angle of refraction *r* and describe the passage of light through parallel-sided transparent material
- Give the meaning of *critical angle*
- Describe internal and total internal reflection
- **Recall and use the definition of refractive index *n* in terms of speed**
- **Recall and use the equation $\sin i / \sin r = n$**
- **Describe the action of optical fibres particularly in medicine and communications technology**

Thin converging lens

- Describe the action of a thin converging lens on a beam of light
- Use the terms *principal focus* and *focal length*

- Draw ray diagrams to illustrate the formation of a real image by a single lens
- **Draw ray diagrams to illustrate the formation of a virtual image by a single lens**
- **Use and describe the use of a single lens as a magnifying glass**

Dispersion of light

- Give a qualitative account of the dispersion of light as shown by the action of a glass prism on light

Electromagnetic spectrum

- Describe the main features of the electromagnetic spectrum and state that all e.m. waves travel with the same high speed *in vacuo*
- Describe the role of electromagnetic waves in:
  - radio and television communications (radio waves)
  - satellite television and telephones (microwaves)
  - electrical appliances, remote controllers for televisions and intruder alarms (infra-red)
  - medicine and security (X-rays)
- Demonstrate an awareness of safety issues regarding the use of microwaves and X-rays
- **State the approximate value of the speed of electromagnetic waves**
- **Use the term *monochromatic***

Sound

- Describe the production of sound by vibrating sources
- Describe the longitudinal nature of sound waves
- State the approximate range of audible frequencies
- Show an understanding that a medium is needed to transmit sound waves
- Describe an experiment to determine the speed of sound in air
- Relate the loudness and pitch of sound waves to amplitude and frequency
- Describe how the reflection of sound may produce an echo
- **Describe compression and rarefaction**
- **State the order of magnitude of the speed of sound in air, liquids and solids**

Electricity and Magnetism

Simple phenomena of magnetism

- Describe the forces between magnets, and between magnets and magnetic materials.
- Give an account of induced magnetism.
- Distinguish between magnetic and non-magnetic materials.
- Describe methods of magnetisation, to include stroking with a magnet, use of d.c. in a coil and hammering in a magnetic field.
- Draw the pattern of magnetic field lines around a bar magnet.
- Describe an experiment to identify the pattern of magnetic field lines, including the direction.
- Distinguish between the magnetic properties of soft iron and steel.
- Distinguish between the design and use of permanent magnets and electromagnets.
- **Explain that magnetic forces are due to interactions between magnetic fields.**
- **Describe methods of demagnetisation, to include hammering, heating and use of a.c. in a coil.**

Electric charge

- State that there are positive and negative charges.
- State that unlike charges attract and that like charges repel.
- Describe simple experiments to show the production and detection of electrostatic charges.
- State that charging a body involves the addition or removal of electrons.
- Distinguish between electrical conductors and insulators and give typical examples.
- **State that charge is measured in coulombs.**
- **State that the direction of an electric field at a point is the direction of the force on a positive charge at that point.**
- **Describe an electric field as a region in which an electric charge experiences a force.**
- **Describe simple field patterns, including the field around a point charge, the field around a charged conducting sphere and the field between two parallel plates (not including end effects).**
- **Give an account of charging by induction.**
- **Recall and use a simple electron model to distinguish between conductors and insulators.**

Current

- State that current is related to the flow of charge.
- Use and describe the use of an ammeter, both analogue and digital.
- State that current in metals is due to a flow of electrons.
- **Show understanding that a current is a rate of flow of charge and recall and use the equation $I = Q/t$.**
- **Distinguish between the direction of flow of electrons and conventional current.**

Electromotive force

- State that the e.m.f. of an electrical source of energy is measured in volts.
- **Show understanding that e.m.f. is defined in terms of energy supplied by a source in driving charge round a complete circuit.**

Potential difference

- State that the potential difference (p.d.) across a circuit component is measured in volts.
- Use and describe the use of a voltmeter, both analogue and digital.
- **Recall that 1 V is equivalent to 1 J / C.**

Resistance

- State that resistance = p.d./current and understand qualitatively how changes in p.d. or resistance affect current.
- Recall and use the equation $R = V / I$.
- Describe an experiment to determine resistance using a voltmeter and an ammeter.
- Relate (without calculation) the resistance of a wire to its length and to its diameter.
- **Sketch and explain the current-voltage characteristic of an ohmic resistor and a filament lamp.**
- **Recall and use quantitatively the proportionality between resistance and length, and the inverse proportionality between resistance and cross-sectional area of a wire.**

Electrical working

- Understand that electric circuits transfer energy from the battery or power source to the circuit components then into the surroundings.
- **Recall and use the equations $P = IV$ and $E = IVt$.**

Circuit diagrams

- Draw and interpret circuit diagrams containing sources, switches, resistors (fixed and variable), heaters, thermistors, light-dependent resistors, lamps, ammeters, voltmeters, galvanometers, magnetising coils, transformers, bells, fuses and relays.
- **Draw and interpret circuit diagrams containing diodes.**

Series and parallel circuits

- Understand that the current at every point in a series circuit is the same.
- Give the combined resistance of two or more resistors in series.
- State that, for a parallel circuit, the current from the source is larger than the current in each branch.
- State that the combined resistance of two resistors in parallel is less than that of either resistor by itself.
- State the advantages of connecting lamps in parallel in a lighting circuit.
- **Calculate the combined e.m.f. of several sources in series.**
- **Recall and use the fact that the sum of the p.d.s across the components in a series circuit is equal to the total p.d. across the supply.**
- **Recall and use the fact that the current from the source is the sum of the currents in the separate branches of a parallel circuit.**
- **Calculate the effective resistance of two resistors in parallel.**

Action and use of circuit components

- Describe the action of a variable potential divider (potentiometer).
- Describe the action of thermistors and light-dependent resistors and show understanding of their use as input transducers.
- Describe the action of a relay and show understanding of its use in switching circuits.
- **Describe the action of a diode and show understanding of its use as a rectifier.**
- **Recognise and show understanding of circuits operating as light-sensitive switches and temperature-operated alarms (to include the use of a relay).**

Digital electronics

- **Explain and use the terms analogue and digital in terms of continuous variation and high/low states.**
- **Describe the action of NOT, AND, OR, NAND and NOR gates.**
- **Recall and use the symbols for logic gates.**
- **Design and understand simple digital circuits combining several logic gates.**

Use truth tables to describe the action of individual gates and simple combinations of gates.

Dangers of electricity

- State the hazards of:
  –damaged insulation
  –overheating of cables
  –damp conditions.
- State that a fuse protects a circuit.
- Explain the use of fuses and circuit breakers and choose appropriate fuse ratings and circuit-breaker settings.
- Explain the benefits of earthing metal cases.

Electromagnetic induction

- Show understanding that a conductor moving across a magnetic field or a changing magnetic field linking with a conductor can induce an e.m.f. in the conductor.
- Describe an experiment to demonstrate electromagnetic induction.
- State the factors affecting the magnitude of an induced e.m.f.
- **Show understanding that the direction of an induced e.m.f. opposes the change causing it.**
- **State and use the relative directions of force, field and induced current.**

a.c. generator

- Distinguish between direct current (d.c.) and alternating current (a.c.).
- **Describe and explain a rotating-coil generator and the use of slip rings.**
- **Sketch a graph of voltage output against time for a simple a.c. generator.**
- **Relate the position of the generator coil to the peaks and zeros of the voltage output.**

Transformer

- Describe the construction of a basic transformer with a soft-iron core, as used for voltage transformations.
- Recall and use the equation (Vp / Vs) = (Np / Ns).
- Understand the terms step up and step-down.
- Describe the use of the transformer in high-voltage transmission of electricity.
- Give the advantages of high voltage transmission.
- **Describe the principle of operation of a transformer.**
- **Recall and use the Equation IpVp = IsVs (for 100% efficiency).**
- **Explain why power losses in cables are lower when the voltage is high.**

The magnetic effect of a current

- Describe the pattern of the magnetic field (including direction) due to currents in straight wires and in solenoids.
- Describe applications of the magnetic effect of current, including the action of a relay.
- **State the qualitative variation of the strength of the magnetic field over salient parts of the pattern.**
- **State that the direction of a magnetic field line at a point is the direction of the force on the N pole of a magnet at that point.**
- **Describe the effect on the magnetic field of changing the magnitude and direction of the current.**

Force on a current-carrying conductor

- Describe an experiment to show that a force acts on a current-carrying conductor in a magnetic field, including the effect of reversing:

  –the current

  –the direction of the field.
- **State and use the relative directions of force, field and current.**
- **Describe an experiment to show the corresponding force on beams of charged particles.**

d.c. motor

- State that a current-carrying coil in a magnetic field experiences a turning effect and that the effect is increased by:
  –increasing the number of turns on the coil
  –increasing the current
  –increasing the strength of the magnetic field.
- **Relate this turning effect to the action of an electric motor including the action of a split-ring commutator.**

Atomic physics

Atomic model

- Describe the structure of an atom in terms of a positive nucleus and negative electrons.
- **Describe how the scattering of α-particles by thin metal foils provides evidence for the nuclear atom.**

Nucleus

- Describe the composition of the nucleus in terms of protons and neutron.
- State the charges of protons and neutrons.
- Use the term proton number Z.
- Use the term nucleon number A.
- Use the term nuclide and use the nuclide notation ${}^{A}_{Z}X$.
- Use and explain the term isotope.
- **State the meaning of nuclear fission and nuclear fusion.**
- **Balance equations involving nuclide notation.**

Detection of radioactivity

- Demonstrate understanding of back ground radiation.
- Describe the detection of α-particles, β-particles and γ-rays (β^+ are not included: β^-particles will be taken to refer to β^-).

Characteristics of the three kinds of emission

- Discuss the random nature of radioactive emission.
- Identify α, β and γ-emissions by recalling
  – their nature
  – their relative ionising effects
  – their relative penetrating abilities (β+ are not included, β particles will be taken to refer to β–).
- **Describe their deflection in electric fields and in magnetic fields.**
- **Interpret their relative ionising effects.**
- **Give and explain examples of practical applications of α, β and γ-emissions.**

Radioactive decay

- State the meaning of radioactive decay.
- State that during α- or β decay the nucleus changes to that of a different element.
- **Use equations involving nuclide notation to represent changes in the composition of the nucleus when particles are emitted.**

Half-life

- Use the term half-life in simple calculations, which might involve information in tables or decay curves.
- **Calculate half-life from data or decay curves from which background radiation has not been subtracted.**

Safety precautoions

- Recall the effects of ionising radiations on living things.
- Describe how radioactive materials are handled, used and stored in a safe way.

Year 7 History

The Classical Era: c. 8500 BCE to c. 500 CE. Do the advantages of civilisation and empire outweigh the disadvantages?
Knowledge and Skills • Recall, select, organise and deploy historical knowledge • Demonstrate an understanding of: a) change and continuity, cause and continuity, similarity and difference; b) the motives, emotions, intentions and beliefs of people in the past; • Comprehend, interpret and use sources as evidence in their historical context • Respond to the following command verbs – *describe, explain, identify, compare and predict* • Complete an historical investigation in essay format • Compare nomadic to urban life • Understand the rise of the first civilisations:- Mesopotamia, Egypt, Harappa and China • Know how the first empires in Africa, Asia, Europe and The Americas developed from the first civilisations • Identify characters of world belief systems including Confucianism, Hinduism, Buddhism and Islam

Year 8 History

The Pre-Modern Era: c. 500 CE to c.1450 CE Did contact between civilisations increase during the Pre-Modern Era?
Knowledge and Skills • Recall, select, organise and deploy historical knowledge • Demonstrate an understanding of: a) change and continuity, cause and continuity, similarity and difference; b) the motives, emotions, intentions and beliefs of people in the past; • Comprehend, interpret and use sources as evidence in their historical context • Respond to the following command verbs – *describe, explain, identify, compare and predict* • Complete an historical investigation in essay format • Understand how various civilisations emerged during this era • Explain how Islam rose and spread so quickly • Discuss how China reached such a height of prosperity • Explain how India responded to internal and external threats • Identify African and early American civilisations' level of development before European domination • Describe the rise of Russia and Japan as distinct civilisations • Explain why the West was powerless to other civilisations

Year 9 History

The Modern Era: c.1450 CE to c.1919 Did increased contact during the Modern Era promote peace or conflict?
Knowledge and Skills • Recall, select, organise and deploy historical knowledge • Demonstrate an understanding of: a) change and continuity, cause and continuity, similarity and difference; b) the motives, emotions, intentions and beliefs of people in the past; • Comprehend, interpret and use sources as evidence in their historical context • Respond to the following command verbs – *describe, explain, identify, compare and predict* • Complete an historical investigation in essay format • Explain how Islamic unity began to fracture • Discuss how China responded to external and internal threats • Justify whether Japan modernised or westernised during the Modern Era • Why was India a source of riches in the Modern Era • Analyse how African and early American civilisations' responded to European domination • Discuss the expansion of Russian power

Year 10 and Year 11 History

(Cambridge IGCSE Syllabus 0470)

The 20th century – International relations since 1919

In the course of the two years students have to be taught all core content topics and at least one of the Depth studies.

Year10

Core Content Topic 1: Were the peace treaties of 1919–23 fair?

Focus Points
- What were the motives and aims of the Big Three at Versailles?
- Why did all the victors not get everything they wanted?
- What was the impact of the peace treaty on Germany up to 1923?
- Could the treaties be justified at the time?

Specified Content
The peace treaties of 1919–23:
- the roles of individuals such as Wilson, Clemenceau and Lloyd George in the peacemaking process
- the impact of the treaties on the defeated countries
- contemporary opinions about the treaties.
- their ideas about foods using drawings and charts

Core Content Topic 2: To what extent was the League of Nations a success?

Focus Points
- How successful was the League in the 1920s?
- How far did weaknesses in the League's organisation make failure inevitable?
- How far did the Depression make the work of the League more difficult?
- How successful was the League in the 1930s?

Specified Content
The League of Nations:
- strengths and weaknesses in its structure and organisation: work of the League's
- agencies/humanitarian work
- successes and failures in peacekeeping during the 1920s
- the impact of the World Depression on the work of the League after 1929
- the failures of the League in the 1930s, including Manchuria and Abyssinia.

Core Content Topic 3: Why had international peace collapsed by 1939?

Focus Points

- What were the long-term consequences of the peace treaties of 1919–23?
- What were the consequences of the failures of the League in the 1930s?
- How far was Hitler's foreign policy to blame for the outbreak of war in 1939?
- Was the policy of appeasement justified?
- How important was the Nazi–Soviet Pact?
- Why did Britain and France declare war on Germany in September 1939?

Specified Content

- The collapse of international order in the 1930s
- The increasing militarism of Germany, Italy and Japan
- Hitler's foreign policy to 1939:
  - the Saar
  - remilitarisation of the Rhineland
  - involvement in the Spanish Civil War
  - Anschluss with Austria
  - appeasement
  - crises over Czechoslovakia and Poland
  - the outbreak of war.

Core Content Topic 4: Who was to blame for the Cold War?

Focus Points

- Why did the USA–USSR alliance begin to break down in 1945?
- How had the USSR gained control of Eastern Europe by 1948?
- How did the USA react to Soviet expansionism?
- What were the consequences of the Berlin Blockade?
- Who was the more to blame for starting the Cold War: the USA or the USSR?

Specified Content

- The origins of the Cold War:
  - the 1945 summit conferences and the breakdown of the USA–USSR alliance in 1945–46
  - Soviet expansion into Eastern Europe to 1948, and American reactions to it
  - the occupation of Germany and the Berlin Blockade
  - NATO and the Warsaw Pact.

Core Content Topic 5: How effectively did the USA contain the spread of Communism?

Focus Points

This Key Question will be explored through case studies of the following:

- America and events in Korea, 1950–53
- America and events in Cuba, 1959–62
- American involvement in Vietnam.

Specified Content

- Events of the Cold War
- Case studies of:
  - American reactions to the Cuban revolution, including the missile crisis and its aftermath
  - American involvement in the Vietnam War, e.g. reasons for involvement, tactics/strategy, reasons for withdrawal
  - American reactions to North Korea's invasion of South Korea, involvement of the UN, course of the war to 1953.

Year 11

Core Content Topic 6: How secure was the USSR's control over Eastern Europe, 1948–c.1989?

Focus Points

- Why was there opposition to Soviet control in Hungary in 1956 and Czechoslovakia in 1968, and how did the USSR react to this opposition?
- How similar were events in Hungary in 1956 and in Czechoslovakia in 1968?
- Why was the Berlin Wall built in 1961?
- What was the significance of 'Solidarity' in Poland for the decline of Soviet influence in Eastern Europe?
- How far was Gorbachev personally responsible for the collapse of Soviet control over Eastern Europe?

Specified Content

- Soviet power in Eastern Europe:
  - resistance to Soviet power in Hungary (1956) and Czechoslovakia (1968)
  - the Berlin Wall
  - 'Solidarity' in Poland
  - Gorbachev and the collapse of Soviet control over Eastern Europe.

Core Content Topic 7: Why did events in the Gulf matter, c.1970–2000?

Focus Points

- Why was Saddam Hussein able to come to power in Iraq?
- What was the nature of Saddam Hussein's rule in Iraq?
- Why was there a revolution in Iran in 1979?
- What were the causes and consequences of the Iran-Iraq War, 1980–88?
- Why did the First Gulf War take place?

Specified Content

- The rise to power of Saddam Hussein in Iraq
- The rule of Saddam Hussein up to 2000, and the consequences of his rule for different groups in Iraq
- The nature of the Shah's rule in Iran and the Iranian Revolution of 1979
- The causes and consequences of the Iran-Iraq War, 1980–88; Western involvement in the war
- The causes, course and consequences of the Gulf War, 1990–91.

Depth Studies

Depth Study A: The First World War, 1914–18

1 Why was the war not over by December 1914?

Focus Points

• How was the Schlieffen Plan intended to work?
• How important was Belgium's reaction to the Schlieffen Plan?
• How successful was the British Expeditionary Force (BEF)?
• Why did both sides introduce trenches?

2 Why was there stalemate on the Western Front?

Focus Points

• Why did the war become bogged down in the trenches?
• What was living and fighting in the trenches like?
• How important were new developments such as tanks, machine guns, aircraft and gas?
• What was the significance of the battles of Verdun and the Somme?

3 How important were other fronts?

Focus Points

• Who won the war at sea?
• Why did the Gallipoli campaign of 1915 fail?
• Why did Russia leave the war in 1918?
• What was the impact of war on civilian populations?

4 Why did Germany ask for an armistice in 1918?

Focus Points

• What was the importance of America's entry into the war?
• Why was the German offensive of 1918 unsuccessful?
• Why did revolution break out in Germany in October 1918?
• Why was the armistice signed?

Specified Content
• The Schlieffen Plan in operation
• The Battles of Mons, the Marne and Ypres:
– the reaction to the 'stalemate'
– the nature and problems of trench warfare
• The main battles of the war including the Somme and Verdun:
– the leadership and tactics of Haig at the Battle of the Somme
– the nature and problems of trench warfare
– the use and impact of new methods of warfare
• The war at sea:
– the Battle of Jutland and its consequences
– the use of convoys and submarines and the U-boat campaign
• The reasons for, and results of, the Gallipoli campaign
• The impact of war on civilian populations
• Events on the Eastern Front and the defeat of Russia
• The German offensive and the Allied advance:
– the impact of American entry into the war
• Conditions in Germany towards the end of the war:
– the Kiel Mutiny and German Revolution
– the abdication of the Kaiser
• The armistice.

Depth Study B: Germany, 1918–45

1 Was the Weimar Republic doomed from the start?

Focus Points
• How did Germany emerge from defeat at the end of the First World War?
• What was the impact of the Treaty of Versailles on the Republic?
• To what extent did the Republic recover after 1923?
• What were the achievements of the Weimar period?

2 Why was Hitler able to dominate Germany by 1934?

Focus Points
• What did the Nazi Party stand for in the 1920s?
• Why did the Nazis have little success before 1930?
• Why was Hitler able to become Chancellor by 1933?
• How did Hitler consolidate his power in 1933–34?

3 The Nazi regime

(a) How effectively did the Nazis control Germany, 1933–45?

Focus Points
• How much opposition was there to the Nazi regime?
• How effectively did the Nazis deal with their political opponents?
• How did the Nazis use culture and the mass media to control the people?
• Why did the Nazis persecute many groups in German society?
• Was Nazi Germany a totalitarian state?

(b) What was it like to live in Nazi Germany?

Focus Points

• How did young people react to the Nazi regime?
• How successful were Nazi policies towards women and the family?
• Did most people in Germany benefit from Nazi rule?
• How did the coming of war change life in Nazi Germany?

Specified Content

• The Revolution of 1918 and the establishment of the Republic
• The Versailles Settlement and German reactions to it
• The Weimar Constitution, the main political divisions, the role of the army
• Political disorder, 1919–23:
– economic crises and hyper-inflation
– the occupation of the Ruhr
• The Stresemann era
• Cultural achievements of the Weimar period
• The early years of the Nazi Party:
– Nazi ideas and methods
– the Munich Putsch
– the roles of Hitler and other Nazi leaders
• The impact of the Depression on Germany:
– political, economic and social crisis of 1930–33
– reasons for the Nazis' rise to power
– Hitler takes power
– the Reichstag Fire and the election of 1933
• Nazi rule in Germany:
– the Enabling Act
– the Night of the Long Knives
– the death of Hindenburg
– the removal of opposition
– methods of control and repression
– use of culture and the mass media
• Economic policy including re-armament
• Different experiences of Nazi rule:
– women and young people
– anti-Semitism
– persecution of minorities
– opposition to Nazi rule
• Impact of the Second World War on Germany:
– the conversion to war economy
– the Final Solution.

Depth Study C: Russia 1905-41

1 Why did the Tsarist regime collapse in 1917?

Focus Points

• How well did the Tsarist regime deal with the difficulties of ruling Russia up to 1914?
• How did the Tsar survive the 1905 Revolution?
• How far was the Tsar weakened by the First World War?
• Why was the revolution of March 1917 successful?

2 How did the Bolsheviks gain power, and how did they consolidate their rule?

Focus Points

• How effectively did the Provisional Government rule Russia in 1917?
• Why were the Bolsheviks able to seize power in November 1917?
• Why did the Bolsheviks win the Civil War?
• How far was the New Economic Policy a success?

3 How did Stalin gain and hold on to power?

Focus Points

• Why did Stalin, and not Trotsky, emerge as Lenin's successor?
• Why did Stalin launch the Purges?
• What methods did Stalin use to control the Soviet Union?
• How complete was Stalin's control over the Soviet Union by 1941?

4 What was the impact of Stalin's economic policies?

Focus Points

• Why did Stalin introduce the Five-Year Plans?
• Why did Stalin introduce collectivisation?
• How successful were Stalin's economic changes?
• How were the Soviet people affected by these changes?

Specific content

• The main features of Tsarist rule and Russian society before the First World War:
– the 1905 Revolution and its aftermath
– attempts at reform
• The First World War and its impact on the Russian people
• The March Revolution of 1917
• The Provisional Government and the Soviets, the growing power of revolutionary groups
• Reasons for the failure of the Provisional Government
• The Bolshevik seizure of power, the role of Lenin
• The main features of Bolshevik rule, the Civil War and War Communism, and reasons for the Bolshevik victory
• The Kronstadt Rising and the establishment of the New Economic Policy
• Lenin's death and the struggle for power
• Reasons for Stalin's emergence as leader by 1928

• Stalin's dictatorship:
– use of terror
– the Purges
– propaganda and official culture
• Stalin's economic policies and their impact:
– the modernisation of Soviet industry
– the Five-Year Plans
– collectivisation in agriculture
• Life in the Soviet Union:
– the differing experiences of social groups
– ethnic minorities and women.

Depth Study D: The USA, 1919-41

1 How far did the US economy boom in the 1920s?

Focus Points

• On what factors was the economic boom based?
• Why did some industries prosper while others did not?
• Why did agriculture not share in the prosperity?
• Did all Americans benefit from the boom?

2 How far did US society change in the 1920s?

Focus Points

• What were the 'Roaring Twenties'?
• How widespread was intolerance in US society?
• Why was Prohibition introduced, and then later repealed?
• How far did the roles of women change during the 1920s?

3 What were the causes and consequences of the Wall Street Crash?

Focus Points

• How far was speculation responsible for the Wall Street Crash?
• What impact did the crash have on the economy?
• What were the social consequences of the crash?
• Why did Roosevelt win the election of 1932?

4 How successful was the New Deal?

Focus Points

• What was the New Deal as introduced in 1933?
• How far did the character of the New Deal change after 1933?
• Why did the New Deal encounter opposition?
• Why did unemployment persist despite the New Deal?
• Did the fact that the New Deal did not solve unemployment mean that it was a failure?

Specific Content

• The expansion of the US economy during the 1920s:

– mass production in industries for cars and consumer durables
– the fortunes of older industries
– the development of credit and hire purchase
– the decline of agriculture
• Weaknesses in the economy by the late 1920s
• Society in the 1920s:
– the 'Roaring Twenties'
– film and other media
– Prohibition and gangsterism
– restrictions on immigration, the 'Red Scare', religious intolerance
– discrimination against black Americans
– the Ku Klux Klan
– the changing roles of women
• The Wall Street Crash and its financial, economic and social effects
• The reaction of President Hoover to the crash
• The presidential election of 1932; Hoover's and Roosevelt's programmes
• Roosevelt's inauguration and the 'Hundred Days'
• The New Deal legislation, the 'alphabet agencies' and their work, and the economic and social changes they caused
• Opposition to the New Deal:
– the Republicans
– the rich
– business interests
– the Supreme Court
– radical critics like Huey Long
• The strengths and weaknesses of the New Deal programme in dealing with unemployment and the Depression.

Depth Study E: China, c. 1930-c.1990

1 Why did China become a Communist State in 1949?

Focus Points

• Why did the Communists undertake the Long March in 1934?
• What was the importance of the Communist settlement at Yenan?
• How far did the Second World War weaken the Nationalist government?
• Why was there a civil war and why did the Communists win it?

2 How far had Communist rule changed China by the mid-1960s?

Focus Points

• What changes in agriculture did Communist rule bring?
• What was the impact of the Communists' social reforms?
• How successful were the Five-Year Plans in increasing production?
• Did the Chinese people benefit from Communist rule?

3 What was the impact of Communist rule on China's relations with other

countries?

Focus Points

• What have been China's changing relationships with neighbouring states?
• Why did China try to improve relations with the USA after 1970?
• How far was China established as a superpower by the time of Mao's death?
• How far have China's relations with other powers improved since Mao's death?

4 Has Communism produced a cruel dictatorship in China?

Focus Points

• Why did Mao launch the Cultural Revolution?
• What was the impact of the Cultural Revolution in China?
• How was the power struggle after the death of Mao resolved?
• How far did economic development of the 1980s produce social and political change?

Specified Content

• Kuomintang and Communist conflict:
– the Shanghai Massacre and the five extermination campaigns
– the Long March
– life at Yenan
– impact of Japanese incursions on the Nationalist government and the Communists
– Xian Incident, 1936
– causes and events of the civil war
• The nature of Chinese Communism
• Communist rule in the 1950s and 1960s:
– Agrarian reform from 1950
– people's courts and the treatment of landlords
– the establishment of collectives and communes
• Industrial developments:
– the Five-Year Plans
– the Great Leap Forward
• Social change:
– the role of women
– health
– education
– propaganda and the destruction of traditional culture
• Chinese foreign policy:
– changing relations with the USSR
– relations with other neighbouring countries, Tibet, India, Vietnam, Taiwan
• Closer relations with the USA from 1970
• Hong Kong
• Impact of China's relations with the rest of the world on its economic liberalisation since Mao's death
• The Communist Party dictatorship:
– repression of political opposition
– the Hundred Flowers campaign

– treatment of minority groups
– the Cultural Revolution
– the role and status of Mao
– the power struggle after Mao's death and the re-emergence of Deng
– the social and political consequences of economic change in the 1980s and 1990s.

Depth Study F: South Africa, c.1940–c.1994

1 What were the foundations of the apartheid state?

Focus Points

• How far had segregation been established by 1940?
• What was the impact of government policies on the non-white population by 1940?
• How successful was the economic development of South Africa by 1945?
• Why did the National Party win the election of 1948?

2 How successfully was apartheid established between 1948 and 1966?

Focus Points

• What were the main features of the apartheid system set up by the National Party after 1948?
• What consequences did apartheid have for the people of South Africa?
• How did opposition to apartheid develop between 1948 and 1964?
• What were the effects of the government's response to opposition by 1966?

3 To what extent did South Africa change between 1966 and 1980?

Focus Points

• How significant were the policies of the National governments from 1966 to 1980?
• To what extent did black opposition change in this period?
• How far did economic factors improve lives by 1980?
• What was the impact of external opposition to apartheid?

4 Why did white minority rule come to an end?

Focus Points

• What were the effects of the policies of P.W. Botha?
• What was the significance of individual leaders in the collapse of apartheid?
• Why did violence increase between 1980 and the early 1990s?
• To what extent was there a smooth transition of power between 1989 and 1994?

Specified Content

• Existing policies and social, economic and political effects of:
– pass laws
– black 'locations'
– colour-bar on employment
– land acts
– restrictions on political rights
• Developments in mining, manufacturing and agriculture; state involvement

• Impact of the Second World War on South Africa
• British and Afrikaaner regional differences and the 1948 election
• Legislation and methods of enforcement after 1948
• Effects on employment, families, location, education, coloureds
• Response of white population
• Development and effects in South Africa of:
– ANC aims and campaigns
– women's resistance
– ANC and PAC split
– Umkhonto we Sizwe and Rivonia Trial
– Sharpeville and Langa
• International effects; 1961 South African Republic
• Changes in methods of suppression and effects from 1966
• Divisions in ANC and PAC in exile; significance of Black Consciousness
• Differing effects of economic developments
• Organisation for African Unity and bases; UN sanctions; government response
• 'Total strategy' and reforms; social and political effects
• The role and motives of:
– President de Klerk
– ANC leaders
– Desmond Tutu
– Chief Buthelezi
• School boycotts and township unrest
• White extremism
• Economic and international factors
• Power-sharing aims and responses
• 1994 general election

Depth Study G: Israelis and Palestinians since 1945

1 How was the Jewish state of Israel established?
Focus Points
• What was the significance for Palestine of the end of the Second World War?
• What were the causes of conflict between Jews and Arabs in Palestine?
• Why did the Arabs reject UNO plans to partition Palestine?
• Why was Israel able to win the war of 1948–49?

2 How was Israel able to survive despite the hostility of its Arab neighbours?
Focus Points
• Why was Israel able to win the wars of 1956, 1967 and 1973?
• How significant was superpower involvement in Arab–Israeli conflicts?
• How important was oil in changing the nature of the Arab–Israeli conflict?
• By the 1990s, how far had problems which existed between Israel and her neighbours been resolved?

3 What was the impact of the Palestinian refugee issue?
Focus Points
• Why were there so many Palestinian refugees?

• How effective was the PLO in promoting the Palestinian cause?
• Why did Arab states not always support the Palestinian cause?
• How did international perceptions of the Palestinian cause change over time?
4 Why has it proved impossible to resolve the Arab–Israeli issue?

Focus Points

• Why has the United Nations been unable to secure a lasting peace?
• How far have international diplomatic negotiations improved Israel's relations with Arab states and the Palestinians?
• How have divisions within Israel affected the peace process?
• How have rivalries among Palestinians affected progress towards a settlement?

Specified Content

• The Arab and Jewish peoples of Palestine:
– different cultures, races, languages
• The aftermath of the Second World War:
– Jewish immigration
– Jewish nationalism and the ending of the British mandate
– the declaration of the state of Israel and the war of 1948–49
• Israel and its Arab neighbours:
– the Suez War (1956)
– the Six-Day War (1967)
– the Yom Kippur War (1973) and Israeli incursions into Lebanon
– the oil weapon: changes in USA and Western thinking
• The Palestinians to c.1992:
– the refugee problem
– Palestinian nationalism and the formation of the PLO
– activities of the PLO, and international acceptance
– the role of Arafat
– relations between the PLO and Arab states
– relations with Israel and moves towards the creation of a Palestinian state
• Moves towards peace:
– United Nations: resolutions, aid and peace-keeping duties
– Camp David meetings; the Oslo Accords
- the establishment of the Palestinian Authority, 1996
• Divisions that restricted progress towards peace:
– political parties: Likud, Labour
– how elections in Israel affected the peace process
– religious issues
• Rivalries among Palestinians:
– the nature of the PLO at its founding
– Intifada, and the rise of Hamas
– Hezbollah and Gaza.

Year 10 and Year 11 Geography

(Cambridge IGCSE Syllabus 0460)

The curriculum of this two year course is divided into three themes, which have been designed to develop an understanding of both the natural and the human environment:

1 Population and settlement (Y10)

2 The natural environment (Y10)

3 Economic development and the use of resources (Y11)

Theme 1: Population and settlement

Focus Points:

Population dynamics

• Describe the growth of the world's population and associated problems and show an understanding of the causes and consequences of over-population and under-population.
• Identify and suggest reasons for contrasting patterns of population growth (or decline) as influenced by migration, birth rate and death rate, especially the impact of HIV/AIDS.
• Describe the consequences (benefits and problems) of different patterns of population growth.
• Identify and suggest reasons for different types of population structure as shown by age/sex pyramids.
• Describe the factors influencing the density and distribution of population and population migration.

Specific content

• Describe and suggest reasons for the rapid increase in the world's population in recent times, 'the population explosion'.
• Define the main components influencing population growth – birth rate, death rate and migration.
• Describe the relationship between population growth and resources and explain why problems may result in some areas such as over-population and under-population.
• Identify and suggest reasons for contrasting patterns of population growth in different world areas as influenced by differences in birth rate, death rate and migration. Factors affecting these influences should be considered such as differences in social, economic and other factors, e.g. government policies and their impact upon birth rates, differences in health care, social and other factors influencing death rates, especially the impact of HIV/AIDS. These factors should be illustrated by reference to selected examples.
• Describe the consequences (benefits and problems) of different patterns of population growth. Consideration should be given to variations in the size and nature of dependent populations and standards of living.
• Identify and suggest reasons for different types of population structure as shown by age/sex pyramids. Candidates should be able to describe population pyramids and relate them to the different stages of the Demographic Transition Model.
• Identify the major influences on population density and population distribution. Reference should be made to physical, economic and human factors.
• Describe and suggest reasons for population migrations. Reference should be made to internal

movements such as rural-urban migration as well as to international migrations both voluntary and involuntary.
• Use statistics, graphs, diagrams and maps throughout their study of population. Such exercises could bond the preparation of candidates for Paper 1 and the other components of the Cambridge IGCSE Geography examination.

Settlement

• Describe and explain the factors influencing the size, development and function of urban and rural settlements and their spheres of influence.
• Describe and give reasons for the characteristics of land-use zones of urban areas in less economically developed countries (LEDCs) and more economically developed countries (MEDCs).
• Describe the problems of urban areas in LEDCs and MEDCs, their causes and possible solutions.
• Describe the impact on the environment resulting from urbanisation and possible solutions to reduce this impact.

Specific content
• Describe the patterns of rural settlements – dispersed, linear, nucleated.
• Explain how physical factors (relief, soil, water supply) and other factors such as accessibility, agricultural land-use, influence the sites and patterns of rural settlements.
• Describe and explain the factors which may influence the size, growth and functions of rural and urban settlements.
• Describe and suggest reasons for the hierarchy of settlements and services.
• Describe and explain the land-use zones of towns and cities to include the Central Business District (CBD), residential areas, industrial areas, the provision of open spaces and transport routes. Differences in the patterns of urban structures in cities of LEDCs and MEDCs should be identified.
• Describe problems associated with the growth of urban areas such as congestion in the CBD, housing shortages, traffic congestion, squatter settlements. Suggested solutions to overcome these problems should be illustrated by reference to selected examples.
• Describe the effects of urbanisation on the environment – pollution (air, water, visual and noise), the results of urban sprawl on surrounding areas, the growth of out-of-town urban activities – shopping areas, sports facilities, etc.

Theme 2: The natural environment

Focus Points:

Plate tectonics

• Describe the distribution of earthquakes, volcanoes and fold mountains in relation to plate margins.
• Describe the causes and effects of earthquakes and volcanic eruptions.

Specific content
• Describe the general distribution of fold mountains, volcanoes and earthquakes and explain how this distribution is related to movements at plate boundaries.
• Show a basic understanding of plate tectonics, describing the global pattern of plates, their structure, and an awareness of plate movements and their effects – constructive (plates moving away from each other), destructive (subduction) (plates moving towards each other) and conservative (plates sliding past each other).
• Demonstrate an understanding of the main features of volcanoes (and their eruptions) and earthquakes.

Landforms and landscape processes

• Describe weathering, river and marine processes.
• Describe and explain the landforms associated with these processes.

Specific content - Weathering
• Recognise that weathering involves the breakdown of rock in situ and, as such, should be distinguished from erosion.
• Describe what is meant by different types of weathering – physical/mechanical (freeze-thaw action, exfoliation), chemical (carbonation, oxidation) and biological.
• Explain the main factors influencing the type and rate of weathering – climate and rock features (mineral composition, grain size of the rock, presence of lines of weakness). The influence of climate on the rate of weathering could be illustrated with reference to simple explanation as to why weathering is more rapid in humid tropical regions of the world than in temperate regions.

Specific content – River processes
• Demonstrate an understanding of the work of a river in eroding, transporting and depositing. Reference should be made to the erosional processes of hydraulic action, corrasion, corrosion (solution) and attrition. River transport should include the processes of traction, saltation, suspension and solution. Reasons why and where in a river's course deposition takes place should be studied. It should be realised that the effectiveness of the river processes concerned will vary according to the volume and velocity of the running water and the nature of the load (boulders, pebbles, sand and silt) which, in turn, will be affected by the bedrock along the course of the river.
• Describe and explain the landforms associated with these processes.

Specific content – Marine processes
• Demonstrate an understanding of wave processes in eroding a coastline and re-sorting and depositing materials removed through erosion. Candidates should understand the types of waves and the components of waves, swash and backwash. The erosional processes of wave action should include an understanding of corrasion, hydraulic action, corrosion and attrition. Transport of material along a coastline should be appreciated; onshore and offshore movements together with an understanding of movement along a coastline (longshore drift). The action of wind in shaping coastal sand dunes should also be understood.
• Describe and explain the landforms associated with these processes.
• Describe the conditions required for the development of coral reefs.
• Describe fringing and barrier reefs and atolls.

Weather, climate and natural vegetation
• Describe the methods of collecting and measuring meteorological data.
• Describe and explain the characteristics of the climate and natural vegetation of two ecosystems:
• tropical rainforest;
• tropical desert.
• Describe and explain the relationship between the climate and natural vegetation in these two ecosystems.

Specific content – Weather
• Draw, describe and explain the use and siting of the following instruments at a weather station: raingauge, maximum-minimum thermometer, wet and dry bulb thermometer (hygrometer), barometer, anemometer and wind vane.
• Make calculations using information from these instruments.
• Have an awareness of simple digital instruments which can be used for weather observations.
• Use and interpret graphs and other diagrams showing weather data.
• Describe and explain the characteristics, siting and use made of a Stevenson screen.
• Describe the main types of cloud and be able to estimate the extent of cloud cover.

Specific content – Climate
• Describe and explain the main characteristics of the climate in the regions listed in the syllabus (tropical rainforest and tropical desert): temperature – mean temperature of the hottest month,

mean temperature of the coolest month, therefore the annual range; rainfall – the amount and seasonal distribution; other climate features – wind, cloud, humidity, etc. Factors influencing these characteristics should be noted such as latitude, pressure systems and the winds to which they give rise, distance from the sea, altitude and ocean currents. Candidates should be familiar with climatic graphs showing the main characteristics of temperature and rainfall of the climates in the regions listed.

Specific content – Ecosystems
• Describe the characteristics and distribution of the two ecosystems listed in the syllabus (tropical rainforest and tropical desert).
• Explain the relationship in each ecosystem of natural vegetation, wildlife and climate.

Inter-relationships between the natural environment and human activities
• Demonstrate the interaction between the natural environment and human activities with reference to natural hazards, landscape processes, climate and the two named ecosystems.
Specific content
• Demonstrate an understanding that the natural environment presents hazards and offers opportunities for human activities. Reference should be made to the hazards posed by volcanic eruptions, earthquakes, tropical storms, flooding and drought.
Use could be made of the study of contemporary examples to illustrate. Such examples would provide candidates with valuable case study information. Such examples could form resource material given in examination questions when candidates might be expected to illustrate inter-relationships between the natural environment and human activities from the data presented. Reference to the opportunities and problems posed for people could be incorporated when studies are made of the natural environment, for example the advantages and difficulties offered by river flood plains and deltas.

Theme 3: Economic development and the use of resources

Focus Points:

Agricultural systems
• Describe and identify the influence of inputs (natural and human) on the processes and outputs of each of the following agricultural systems:
• a large-scale system of commercial farming;
• small-scale subsistence farming.
• Recognise the causes and effects of shortages of food and describe possible solutions to this problem.

Specific content
• Describe in general terms the main features of an agricultural system: inputs, processes and outputs.
• Describe the influence of natural and human inputs on the processes and outputs of the two agricultural systems listed in the syllabus (a large-scale system of commercial farming and smallscale subsistence farming). Studies should include natural inputs (relief, climate and soil) and human inputs (economic, social and sometimes political). Their combined influences on the scale of production, methods of organisation and the products of each system should be studied. Reference may be made to an example such as plantation agriculture or extensive commercial cereal farming or extensive livestock production, etc., to illustrate a large-scale system of commercial farming. Examples such as intensive subsistence rice cultivation or shifting cultivation, etc. could profitably illustrate a system of small-scale subsistence farming.
• Recognise the causes and effects of food shortages. Shortages of food may be related to natural problems such as soil exhaustion, drought, floods, tropical cyclones, pests, disease, etc. There should be an awareness of the effects of these natural problems on selected areas within LEDCs. Economic

and political factors and their effects upon food shortages should be noted, for example low capital investment, poor distribution/transport difficulties, wars, etc. The effects of food shortages in encouraging food aid and measures such as those of the 'Green Revolution' to produce more food should also be considered.

Industrial systems

• Classify industries into primary, secondary and tertiary.
• Describe and explain how the proportions employed in primary, secondary and tertiary industries differ in LEDCs and MEDCs and may change with time and level of development.
• Describe and identify the influence of inputs on the processes and outputs (products and waste) of industrial systems.
• Describe and explain the factors influencing the distribution and location of high technology industries and one other manufacturing/ processing industry. Distribution should be studied on a global/ national scale. Study should also be made of particular zones and/ or industrial plants with respect to locational and siting factors.

Specific content
• Classify industries into primary, secondary and tertiary and be able to give illustrations of each. Describe and explain how the proportions employed in each sector change with respect to the level of development, including Newly Industrialised Countries (NICs).
• Demonstrate an understanding of an industrial system: inputs, processes and outputs (products and waste). Specific illustrations of high technology industries should be studied along with one other processing/manufacturing industry.
• Describe how a variety of factors must be considered when seeking the location for high technology industries and the selected industry.

Leisure activities and tourism

• Describe and account for the growth of leisure facilities and tourism in relation to the main attractions of the physical and human landscape.
• Assess the benefits and disadvantages of tourism to receiving areas.
Specific content
• Describe and explain the growth of leisure facilities and tourism in relation to the main attractions of the physical and human landscape in an area or areas selected for study.
• Demonstrate an understanding that the effects of a growth in tourism are generally positive and that careful management is needed if problems are to be avoided. Reference could be made to advantages accruing from tourism such as growth in income, an increase in foreign exchange, employment opportunities, the development of infrastructure and facilities which may be used by the local population, the encouragement of other developments to take place in an area, cultural advantages, etc. Disadvantages might include seasonal unemployment, under-use of facilities at certain times of the year, increased congestion, pollution, a shortage of services e.g. water supplies, social/cultural problems, damage to the physical landscape, etc. A selected sample study should be used to illustrate both the benefits and disadvantages associated with the growth of tourism.

Energy and water resources

• Describe the significance of fuelwood, non-renewable fossil fuels (coal, oil and natural gas), renewable energy supplies (geothermal, wind, running water, solar and biofuels).
• Describe the factors influencing the development and siting of power stations (thermal, hydro-electric and nuclear).
• Describe the uses, provision and competition for water resources and the impact of water shortages.

Specific content
• Describe the significance of fuelwood in LEDCs and of non-renewable fossil fuels in terms of their availability in certain areas and in terms of the contribution made by coal, oil, natural gas and wood in supplying vast amounts of energy.
• Describe the growing significance of renewable energy supplies (geothermal, wind, running water,

solar, biofuels) to reduce dependence upon fossil fuels, to alleviate the world's energy crisis, and to offer opportunities for the development of alternative energy sources.
• Describe the factors influencing the siting of different types of electrical power stations with reference to those listed in the syllabus (thermal, hydro-electric power, nuclear).
• Describe the uses made of water for agriculture, domestic and industrial demand.
Recognise that in certain areas there are water shortages which impact upon the local people and the potential for development. This leads to competition for the use of the available water resources and requires careful management.

Environmental risks and benefits: resource conservation and management
• Describe how human activities (agriculture, mining and quarrying, energy production, manufacturing industries, transport and tourism) may improve the quality of life and/or pose threats to the environment in terms of:
• soil erosion;
• global warming;
• pollution (water, air, noise, visual).
• Demonstrate the need for sustainable development, resource conservation and management in different environments.
• Identify areas at risk and describe attempts to maintain, conserve or improve the quality of the environment.

Specific content
• Demonstrate the need for sustainable development, resource conservation and management in different environments. It is not intended that candidates should be familiar with a wide variety of illustrations here. Rather that by the use of well selected case studies, possibly integrated with the study of other concepts referred to above, candidates become familiar with general principles and can illustrate these from examples.
• Identify and describe the benefits associated with the development of agriculture, mining and quarrying, energy production, manufacturing industries, transport and tourism.
• Describe how these developments may also pose threats to the environment when natural ecosystems are interfered with including: soil erosion, global warming, and pollution (air, water, noise and visual).
• Identify areas at risk from these threats to the environment and describe attempts made to maintain, conserve or improve the quality of the environment.

Year 7 Art and Design

Self Image

Awareness:

- ask and answer questions using appropriate terminology
- compare and comment on ideas, methods and approaches used in images of self
- select and experiment with ideas, materials and information to represent themselves
- organise and present work to indicate how ideas are being developed

Materials and technique:

- select and combine line and tone and images and text to create an objective view of self
- manipulate materials and techniques to compose images and express ideas about their identity
- apply their experience of materials and techniques, using colour and texture to create an expressive image of self
- check the progress of their work at each stage and identify what needs to be modified and how improvements can be made

Identity:

- compare different ideas, methods and approaches in the work of others
- identify the strengths and weaknesses of different ways of representing identity

What's In a Building?

Intro to structures:

- recall ideas and feelings about buildings that they know
- identify architectural details that they have seen and can look for and record during their research
- record visual and other information from first-hand observations
- identify architectural features that are characteristic of particular times or places

Form and space:

- use their knowledge and understanding of tools and techniques to communicate ideas and feelings about architectural forms and details
- make a sculpture that explores the visual and tactile impact of shape, form, space, pattern and texture

Presentation and critique:

- communicate what they think and feel about the work of architects and sculptors
- identify the effective methods and approaches that they and others have used and explain their views
- check the progress of their work at each stage against their initial intentions
- make appropriate changes to improve their work

Recreating Landscapes
Environment: • describe and analyse examples of landscape painting • identify reasons why artists choose different approaches, based on what they can see in the work and what they have found out about the artists • talk and write about landscape based on personal experience • use writing to help learning and memory **Research and self-expression:** • experiment with media and different methods and approaches to communicate ideas and feelings about landscape • analyse their sketchbook studies as a part of the process of exploring ideas • compare and comment on the work of contemporary craftspeople • combine and manipulate materials and processes to express mood and feeling of landscape **Refinement:** • evaluate their work, expressing opinions about technical and expressive aspects • give a clear explanation of what they have learnt from their work, using appropriate subject vocabulary • make considered changes to their work to modify and improve it

Year 8 Art and Design

Objects and Viewpoints

Still-life:

- analyse the main features of everyday objects
- comment on how objects are represented in cubism and other artists' work
- identify conventions in cubism and suggest what they were aiming to achieve
- show an understanding that art works from non-Western cultures have codes and conventions that represent different ideas, beliefs and values
- say what they think and feel about cubism and other still-life works and give their reasons
- identify conventions in cubism and suggest what they were aiming to achieve
- show an understanding that art works from non-Western cultures have codes and conventions that represent different ideas, beliefs and values
- say what they think and feel about cubism and other still-life works and give their reasons

Cultural aspects:

- identify conventions in cubism and suggest what they were aiming to achieve
- show an understanding that art works from non-Western cultures have codes and conventions that represent different ideas, beliefs and values
- say what they think and feel about cubism and other still-life works and give their reasons

Artistic influence:

- explore alternative ideas and select one to develop
- enlarge a selected composition and develop a painting that shows the influence of others' work

Animating Art

Photography and illustration:

- analyse examples of images that have an emotive content and comment on the effects
- identify the purpose of images, speculating on the intentions of the artist
- identify similarities and differences in the roles and functions of art from different times and places
- ask and answer questions about subject matter and image content, looking at how ideas and feeling have been communicated
- collect images, including photographic, digital and moving images from a number of sources, including the television (tape advertisements/ film clips) and websites
- record and develop a sequence of images based on their selected work of art
- develop images to demonstrate how ideas and feelings are shown effectively

Moving image:

- make a simple moving image
- explore tools and processes, including digital manipulation software, to communicate ideas and the emotional content of an image
- communicate ideas and feelings by selecting and using visual qualities, materials and processes

- contribute to a collaborative work for a specific purpose and audience

Production and presentation:

- present and explain the findings of their work using specific terminology

make meaningful changes to their work by using traditional or new technologies

Shared View

Symbolism:

- identify and prioritise issues relating to the environment
- suggest what they value about the environment
- identify subject matter, materials and processes used in Aboriginal art
- identify how these relate to Aboriginal ideas and beliefs about the creation and the 'Dreamtime'
- identify similarities and differences in the practice of traditional Aboriginal Australian art and late modern examples
- identify how artists conveyed meaning through symbolism
- collect relevant information
- select and use appropriate techniques for identified subject purposes
- synthesise information and ideas from different sources when reading for specific purposes
- select and develop ideas for symbols to use in their work
- generate ideas for a design for a relief panel or maquette to symbolise their ideas
- give a clear explanation of their research and ideas to their peers

Three dimensions:

- decide, as a group, which design or combination of designs will be used for the final piece
- document the decisions taken by the group
- make a final piece as a relief panel or a three-dimensional construction
- contribute to sustained group work to carry out and report on a task

Constructive feedback and refinement:

- review and adapt their work and develop and refine ideas and meanings
- listen and comment fully on the main points of what they have heard
- explain the findings of their evaluations, using subject-specific terminology and concepts

Year 9 Art and Design

Shared View

Digital media:

- identify similarities and differences in the roles and functions of art from different times and places
- comment on the impact of images, speculating on the intentions of the artist
- listen and comment fully on the main points of what they have heard
- analyse examples of images that have narrative and emotive content and comment on the effects
- ask and answer questions about subject matter and how ideas and feelings have been communicated
- select images, including photographic and digital images, from a number of sources, including the internet
- comment on examples that show how feelings and emotions are shown effectively
- ask and answer questions about subject matter and how ideas and feelings have been communicated
- select images, including photographic and digital images, from a number of sources, including the internet
- comment on examples that show how feelings and emotions are shown effectively

Editing:

- ask and answer questions about subject matter and how ideas and feelings have been communicated
- select images, including photographic and digital images, from a number of sources, including the internet
- comment on examples that show how feelings and emotions are shown effectively

Evaluating and developing work:

- ask and answer questions about subject matter and how ideas and feelings have been communicated
- select images, including photographic and digital images, from a number of sources, including the internet
- comment on examples that show how feelings and emotions are shown effectively

Personal Places, Public Spaces

Plaza de planning:

- identify ways of representing ideas, beliefs and values in public work
- identify features of the local natural and made environment
- record and collect visual and other information relevant to the purpose
- weigh evidence and reasons, and reach conclusions, when developing ideas
- identify different ways in which the environment is represented in different times and cultures
- present their research in an appropriate form

Research:

- present their research in an appropriate form

Construction:

- decide, as a group, which ideas they will develop for their public piece
- contribute to the group work to design, plan and carry out a task
- contribute to a large-scale mural or a three-dimensional construction

Changing Your Style

Cultural background:

- explain that style is related to wider social and cultural issues
- give some reasons why styles change
- record and analyse the characteristics of a number of different styles
- listen actively, demonstrating understanding and using subject terminology
- make visual and annotated notes about their findings, to be used as reference in later work
- appraise texts quickly and effectively, evaluating the relevance of what they have read and its clarity
- select, compare and synthesise information from different texts
- develop ideas for design based on research
- record a range of relevant visual and other information and explain how their ideas have developed
- present a design proposal in an appropriate form

Style and design:

- make a 'mock-up' of a textile, body adornment or three-dimensional design
- document the stages of adapting a style and the process of creating their design

Reflection:

- explain how they have developed their ideas
- identify the influences on their work
- review, evaluate and refine their work, as needed

Year 10 and Year 11 Art and Design

(Cambridge IGCSE Syllabus 0400)

Technique & Materials

Exploration and development of ideas

- explore a range of visual and/or other ideas by manipulating images
- show a development of ideas through appropriate processes.

Selection and control of materials, media and processes

- show exploration and experimentation with appropriate materials
- select and control appropriate media and processes, demonstrating practical, technical and expressive skills and intentions.

Observation & Interpretation

Gathering, recording, research and investigation

- investigate and research a variety of appropriate sources
- record and analyse information from direct observation and/or other sources and personal experience.

Exploration and development of ideas

- explore a range of visual and/or other ideas by manipulating images
- show a development of ideas through appropriate processes.

Selection and control of materials, media and processes

- show exploration and experimentation with appropriate materials
- select and control appropriate media and processes, demonstrating practical, technical and expressive skills and intentions.

Portfolio

Personal vision and presentation

- show personal vision and commitment through an interpretative and creative response
- present an informed response through personal evaluation, reflection and critical thinking
- Develop work into a cohesive outcome

Year 7 Information, Communication and Technology

Using ICT

Multimedia:

- produce a multimedia presentation with text, graphics and sound
- present multimedia work, suitably annotated

Information and Presentation

Sources:

- identify at least two appropriate but different sources and the strengths and weaknesses associated with each source
- recognise the need to validate information sources

Methodology:

- use a range of search mechanisms associated with sources and identify some of the advantages and disadvantages of the facilities
- use AND or OR in their Boolean searches
- modify searches after checking the relevance of material found

Identifying information:

- skim through information to check its relevance
- recognise that material held on ICT systems comes from a variety of sources and that they should identify the originator and evaluate the validity of the material
- are critical of information selected and use techniques to search, identify and organise appropriate material
- understand and interpret the relationship between pictures, print, etc
- use organisational features to locate texts and information

Presentation:

- prepare a presentation to address the specified audience and to focus on the purpose of the presentation
- use images, clip art and graphs to enhance a message or be more effective than text
- use the facilities of a presentation package to produce an effective presentation

Processing Text and Images

Publications:

- describe a variety of newspaper 'styles' based on a few key elements of design and layout
- identify the key information contained in newspaper text
- demonstrate collaborative working and a systematic approach
- contribute usefully to group activity, showing understanding of the task

Content:

- demonstrate collaborative working and a systematic approach
- contribute usefully to group activity, showing understanding of the task

Digital Imaging:

- produce appropriate image files using digital imaging and image capture
- demonstrate the process of image editing and manipulation
- use some of the different file types used for images
- create suitable page-ready images from a variety of sources

Page Layout:

- create a layout which takes the audience into account
- know that desktop publishing packages use frames or layers to hold individual pieces of information, whether text or graphics

Reflection:

- analyse their work and reflect on its effectiveness

Data

Design questionnaire:

- evaluate a range of questionnaire designs, highlighting advantages of specific questions
- recognise fields, records and data types from a questionnaire layout and a database

Structure:

- ask questions using appropriate terminology
- design a questionnaire which matches the structure of the database
- design and set up a database structure
- add an extra appropriate field
- search the database and produce graphs as required
- add an extra appropriate field
- search the database and produce graphs as required

Year 8 Information, Communication and Technology

Public Information Systems

Sources:

- investigate a range of electronic and print sources
- understand that information can be presented in different forms for different audiences and purposes
- consider the usefulness and appropriateness of information and texts

Weather data:

- understand that weather data can come from a wide range of sources
- analyse the form and structure of data from specific sources to inform future planning

Project specification:

- understand the needs of an audience and the constraints of a software presentation package
- appreciate a range of methods of presenting information and select appropriate methods of display with respect to the needs of an audience

Sensing Data

- present results of analysis in ways that inform the specification of future working
- collect, download or save appropriate data from datalogging or other sources
- understand that remote sensing produces data in particular formats and know what these represent

Publishing on the Web

Purpose and structure:

- understand that the design of pages can influence the data that is accessed by users
- understand that web pages can be designed for different audiences

Software tools:

- use software to create web pages
- use software tools to create features unique to interactive documents

Language:

- recognise HTML code is used to produce many web pages

Implementation:

- create a web page made up of a series of objects
- program objects to carry out a range of actions

Links:

- Add appropriate links to page

Web design:

- understand that it is important to consider purpose and aims when designing a web page
- create content suitable for the intended audience
- design and produce web pages linked to others
- evaluate their work and use this to improve it
- present arguments about publishing responsibly

Systems - Integrating Applications to Find Solutions

Fundraising event:

- split an overall problem into component tasks
- justify the application of ICT solutions to identified problems
- use more speculative types of questions which show engagement with subject concepts

Spreadsheet analysis:

- identify rules governing a model
- enter formulae and parameters into a spreadsheet
- use a spreadsheet model

Graphic impact?:

- produce a simple design using a vector graphics program
- understand the importance of file types
- manipulate an image for a variety of purposes
- combine different types of images for use in different situations

Desktop Publishing:

- incorporate graphics files into a variety of documents
- produce a range of documents for different purposes
- explain the process of the work using subject terminology and concepts

Evaluation:

- produce a report on the overall effectiveness of a system
- understand the advantages and limitations of a variety of ICT-based solutions
- write a coherent, continuous text and link ideas into sentences showing more complex connections

Year 9 Information, Communication and Technology

Control Systems

What are control systems?:

- describe real-world systems that have underlying complex control systems
- recognise that control systems exist to ensure people's safety
- describe the components and relationships of the system

Diagramming:

- produce a system diagram, and identify inputs and outputs for each part of the system and the principles underlying the process
- test algorithms using appropriate techniques

Documenting:

- produce working procedures including the use of conditions, counters, inputs and outputs
- document systems effectively
- set up and test elements of the system

Diagnostics:

- use diagnostic techniques to test systems
- effectively evaluate through constructive criticism of their own systems leading to refinement as required

Evaluation:

- demonstrate skill in the use of a presentation package for a specific purpose and audience
- use reflective evaluation skills in the evaluation of the processes and tools used

Global communication - negotiating and transferring data

Establishing contacts:

- establish effective links with remote partners

Project planning:

- analyse and plan a project
- prepare and communicate information

Sharing and negotiating:

- understand that successful negotiations depend on good preparation
- recognise that projects are improved by the sharing and refining of ideas
- identify success criteria for project(s)

Designing:

- design and test a data capture system

- prepare a data capture system that can be used by others
- assess the adequacy and clarity of information for specific purposes

Preparing reports:
- analyse large quantities of data and draw conclusions
- prepare project outcomes in a suitable format that can be used by others
- write coherent texts for different purposes including analysis and review
- use more formal writing to suggest objectivity and impartiality

Evaluation
- identify limitations and constraints on project outcomes imposed by software tools
- apply criteria to evaluate the outcomes of a project
- produce a final project report

Systems: managing a project

Stages of development:
- understand that projects need to be approached systematically

Solution:
- consider the nature of a problem and produce reports showing clear definitions of expected outcomes
- produce the solution to the problem by breaking it into processes and outcomes
- can represent these diagrammatically
- specify criteria for success for all tasks to enable later evaluation

Design specifications
- understand the need for clear design specifications
- present these as a flow diagram

Management:
- contribute to group work to design, plan, carry out and report back on a task
- understand the role of project management and time management
- demonstrate initial preparation to ensure that during implementation of a solution all elements of the design are included in an effective procedure

Implementation:
- are critical of their own work and use their findings constructively
- are able to evaluate their work appropriately
- make revisions to their work based on the outcome of an evaluation
- discuss and evaluate conflicting evidence

Revision and evaluation
- complete a project that demonstrates clear and coherent presentation
- demonstrate evaluation in the system development
- show how through evaluation improvements can be made or future developments identified

Year 10 and Year 11

Information, Communication and Technology

(Cambridge IGCSE Syllabus 0417)

IGCSE ICT	Year 10	Year 11
Types and components of computer systems	S1	
Input and Output devices	S1	
Storage devices and media	S1	
Computer networks	S1	
Data types	S2	
The effects of using ICT	S2	
The ways in which ICT is used	S2	
Systems analysis and design	S2	
Communication		S1
Document production		S1
Data manipulation		S2
Integration		S1
Output data		S2
Data analysis		S2
Website authoring		S2
Presentation authoring		S1

Types and components of computer systems

Hardware and software

- define hardware as consisting of physical components of a computer system
- identify internal hardware devices (e.g. processor, motherboards, random access memory (RAM), read-only memory (ROM), video cards, sound cards and internal hard disk drives)
- identify external hardware devices and peripherals (such as monitors, keyboards, mice, keyboards, printers as input and output devices and external storage devices in general)
- define software as programs for controlling the operation of a computer or processing of electronic data
- identify the two types of software – applications software and system software
- define applications software (e.g. word processing, spreadsheet, database management systems, control software, measuring software, applets and apps, photo-editing software, video-editing software, graphics manipulation software)
- define system software (e.g. compilers, linkers, device drivers, operating systems and utilities)

The main components of computer systems

- describe the central processing unit including its role
- describe internal memory, i.e. ROM and RAM and the differences between them
- define input and output devices and describe the difference between them
- define secondary/backing storage

Operating systems

- define and describe operating systems which contain a Command Line Interface (CLI)
- define and describe operating systems which contain a Graphical User Interface (GUI)
- describe the differences, including the benefits and drawbacks, between operating systems which contain a CLI and those which contain a GUI

Types of computer

- describe the characteristics of a personal/desktop computer and its uses, both as a standalone and networked computer
- describe the characteristics of a laptop computer and what it is used for, both as a standalone and networked computer
- describe the characteristics of a tablet computer and what it is used for, including its ability to use wireless technology or 3G/4G technology
- describe the computer characteristics of a smartphone and what it is used for in computing terms
- describe the advantages and disadvantages of each type of computer (as above) in comparison with the others (as above)

Impact of emerging technologies

- describe how emerging technologies are having an impact on everyday life (e.g. artificial intelligence, biometrics, vision enhancement, robotics, quantum cryptography, computer-assisted translation, 3D and holographic imaging, virtual reality)
-

Input and output devices

- identify input devices and their uses, e.g. keyboard, numeric keypad, pointing devices (such as mouse, touchpad, trackerball), remote control, joystick/driving wheel, touch screen, scanners, digital cameras, microphone, sensors (general), temperature sensor, pressure sensor, light sensor, graphics tablet, video camera, web cam
- describe direct data entry and associated devices, e.g. magnetic stripe readers, chip and PIN readers, Radio Frequency Identification (RFID) readers, Magnetic Ink Character Reader (MICR), Optical Mark Reader (OMR), Optical Character Reader (OCR), bar code reader

- identify the advantages and disadvantages of any of the above devices in comparison with others
- identify output devices and their uses, e.g. CRT monitor, TFT/LCD monitor, IPS/LCD monitor, LED monitor, touch screen (as an output device), multimedia projector, laser printer, inkjet printer, dot matrix printer, wide format printer, 3D printer, speakers, motors, buzzers, heaters, lights/lamps
- describe the advantages and disadvantages of any of the above devices

Storage devices and media

- identify storage devices, their associated media and their uses, e.g. magnetic backing storage media: fixed hard disks and drives, portable and removable hard disks, portable and removable hard drives, magnetic tape drives and magnetic tapes, memory cards optical backing storage media (CD/DVD/Blu-ray): CD ROM/DVD ROM, CD R/DVD R, CD RW/DVD RW, DVD RAM, Blu-ray discs, solid state backing storage: solid state drives, flash drives (pen drive/memory stick/USB stick)
- describe the advantages and disadvantages of the above devices

Networks

- understand how a router works and its purpose
- describe how networks and individual computers connect to the internet
- describe how a router stores computer addresses
- describe how it routes data packets
- understand the use of other common network devices, including: network interface cards, hubs, bridges, switches, modems
- understand the use of WiFi and Bluetooth in networks
- describe how computers can use WiFi to connect to a network
- describe how computers can use Bluetooth to connect to a network
- compare and contrast Bluetooth and WiFi
- understand how to set up and configure a small network, including: access to the internet, the use of a browser, the use of email, access to an ISP
- understand the characteristics and purpose of common network environments, such as intranets and the internet
- define what the internet is
- define what an intranet is
- describe the differences between an intranet and the internet
- explain the purpose of an intranet and how that differs from the purpose of the internet
- describe the uses of an intranet
- describe the uses of the internet
- define the terms Local Area Network (LAN),Wireless Local Area Network (WLAN) and Wide Area Network (WAN)
- describe the differences between a LAN, a WLAN and a WAN
- understand the advantages and disadvantages of using different types of computer to access the internet
- compare the advantages and disadvantages of using laptop computers, desktop computers, tablet computers and mobile phones to access the internet
- describe the security issues surrounding the use of computer networks
- describe other issues such as the internet is not policed and the effects of this, such as the existence of inappropriate sites
- identify methods of avoiding password interception (such as the use of anti-spyware and changing passwords regularly)
- describe the difference between strong and weak passwords
- describe other authentication techniques (such as biometric methods, magnetic stripes, id cards, passports, other physical tokens, retina scans, iris scans, face scans)
- describe the use of antivirus software and other methods of avoiding viruses (such as use of

unknown storage media to transfer data, the risk of downloading software from the internet)
- define encryption and describe its use list the principles of a typical data protection act
- describe facsimile communication and describe the differences between physical faxing (which does not require the use of a network) and electronic faxing (which does require the use of a network)
- describe email communication, including the use of attachments
- describe the advantages and disadvantages of using email compared with faxing
- describe video-conferencing, including the hardware used
- describe audio-conferencing
- describe web-conferencing and how it can be linked to either video- or audio-conferencing

The effects of using IT

- describe how there has been a reduction of employment in offices, as workers' jobs have been replaced by computers in a number of fields (e.g. payroll workers, typing pools, car production workers)
- describe how there has been an increase in employment in other fields (e.g. website designers, computer programmers, delivery drivers in retail stores)
- describe how the use of computers has led to a number of employees changing their working patterns (e.g. part-time working, flexible hours, job sharing, compressed hours)
- describe what is meant by part-time working, flexible hours, job sharing, compressed hours microprocessor-controlled devices in the home
- describe the positive effects microprocessors have on aspects of lifestyle (e.g. the amount and use of leisure time, the degree of social interaction, the ability to leave the home) describe the negative effects microprocessors have on aspects of lifestyle (e.g. lack of exercise) and potential health problems related to the prolonged use of IT equipment
- describe repetitive strain injury (RSI) and what causes it
- identify other health issues (e.g. back problems, eye problems, headaches)
- describe some simple strategies for preventing these problems
- evaluate the use of IT equipment and develop strategies to minimise the health risks

ICT applications

- describe a range of communication applications (e.g. newsletters, websites, multimedia presentations, music scores, cartoons, flyers and posters)
- describe the use of mobile phones for communication (e.g. text messaging, phone calls,
- accessing the internet)
- describe the use of internet telephony, including Voice Over Internet Protocol (VOIP)
- describe applications for publicity and corporate image publications (e.g. business cards, letterheads, flyers and brochures)
- describe the use of a range of data handling applications (e.g. surveys, address lists, clubs and society records, school reports and school libraries)
- describe a range of measurement applications (e.g. scientific experiments, weather stations)
- explain the difference between analogue data and digital data
- explain the need for conversion between analogue and digital data
- describe the use of microprocessors and computers in a number of applications (e.g. pollution monitoring, intensive care units in hospitals)
- discuss the advantages and disadvantages of using computers in measurement rather than humans
- describe the role of a microprocessor or computer in control applications, including the role of the pre-set value
- describe the use of computer control in applications (e.g. turtle graphics, automatic washing machines, automatic cookers, computer controlled central heating systems, burglar alarms, computer controlled glasshouse)
- describe the use of computer modelling in spreadsheets (e.g. for personal finance)

- describe a range of computer controlled applications (e.g. robotics in manufacture and production line control)
- discuss the advantages and disadvantages of using computer controlled systems rather than humans
- describe how systems are used to manage learner registration and attendance
- describe how systems can be used to record learner performance
- describe how systems can be used for organising examinations, creating timetables and managing teaching cover/substitution
- identify areas where booking systems are used (e.g. travel industry, theatre and cinemas)
- describe the online processing involved in booking tickets
- discuss the advantages and disadvantages of online booking systems
- describe the computer processing involved in Electronic Funds Transfer (EFT)
- describe the computer processing involved in using automatic teller machines (ATM) (e.g. withdrawing cash, depositing cash or cheques, checking account balance, mini statements, mobile/cellphone recharge/top up, bill paying, money transfers, ordering paper-based goods)
- describe the use of processing credit/debit card transactions
- describe the clearing of cheques
- describe phone banking
- describe internet banking, and discuss the advantages and disadvantages of it
- describe the contents of information systems in medicine (including patient records, pharmacy records, monitoring and expert systems for diagnosis)
- describe how 3D printers can be used in producing medical aids (e.g. surgical and diagnostic aids, development of prosthetics and medical products, tissue engineering, artificial blood vessels and the design of medical tools and equipment)
- describe the files used in libraries (e.g. records of books and borrowers)
- describe the computer processing involved in the issue of books, including the use of direct data entry methods
- describe the automatic processing involved in issuing reminders for overdue books
- identify a range of applications which use expert systems (e.g. mineral prospecting, car engine fault diagnosis, medical diagnosis, chess games)
- identify the components of an expert system (e.g. interactive user interface, inference engine,rules base, knowledge base)
- describe how an expert system is used to suggest diagnoses
- describe the use of point of sale (POS) terminals, how the stock file is updated automatically, and how new stock can be ordered automatically describe the use of electronic funds transfer at point of sale (EFTPOS) terminals (e.g. thechecking of the validity of cards, the use of chip and PIN, the communication between the supermarket computer and the bank computer)
- describe internet shopping
- discuss the advantages and disadvantages of internet shopping
- describe how recognition systems work (e.g. Magnetic Ink Character Recognition (MICR), Optical Mark Recognition (OMR) and Optical Character Recognition (OCR), Radio Frequency Identification Device (RFID)
- describe how number plate recognition systems work
- describe the processing of cheques
- describe the processing of OMR media (e.g. school registers, multiple choice examination papers)
- describe how RFID and RF technology is used in a range of applications (e.g. tracking stock, passports, automobiles, contactless payment)
- describe how a workforce or member of the public can be monitored or logged
- describe how the use of cookies can be used to monitor a person's internet activity
- describe the use of key-logging
- describe how worker/employee call monitors can be used

- describe the use of automatic number plate recognition
- describe the use of different satellite systems (e.g. Global Positioning Systems (GPS), satellite navigation, Geographic Information System (GIS), media communication systems)

The systems life cycle

- identify and describe methods of researching an existing system (e.g. observation, interviews,
- questionnaires and examination of existing documents)
- discuss the disadvantages and advantages of the different methods
- recording and analysing information about the current system
- describe the need to identify inputs, outputs and processing of the current system
- describe the need to identify problems with the current system
- describe the need to identify the user and information requirements for the new system
- identify and justify suitable hardware for the new system
- identify and justify suitable software for the new system
- describe how it is necessary to design documents, files, forms/inputs, reports/outputs and validation
- produce designs to solve a given problem
- design data capture forms and screen layouts
- design report layouts and screen displays
- design validation routines (including length check, type check, format check, presence check,
- check digit)
- design the required data/file structures (e.g. field length, field name, data type)
- describe how data/file structures are created and tested
- describe how validation routines are created and tested
- describe how input methods are created and tested
- describe how output formats are created and tested
- describe the need to test each module
- describe the need to test the whole system
- describe testing using normal data including definition and examples
- describe testing using live data including definition and examples
- describe testing using abnormal data including definition and examples
- describe testing using extreme data including definition and examples
- describe how it may be necessary to improve the system and make changes (e.g. data/file structures, validation routines, input methods, output formats may need to be amended/ improved)
- describe the four methods of implementation (direct changeover, parallel running, pilot
- running, phased implementation), methods of implementation
- identify suitable situations for the use of different methods of system implementation (e.g. organisations or departments within organisations which need a quick changeover, organisations or departments within organisations which cannot afford to lose data)
- describe advantages and disadvantages of each method of implementation
- explain the need for technical documentation
- identify the components of technical documentation (e.g. purpose of the system/program, limitations of the system, program listing, program language, program flowcharts/algorithms, system flowcharts, hardware and software requirements, file structures, list of variables, input format, output format, sample runs/test runs, validation routines) user documentation for an information system
- explain the need for user documentation
- identify the components of user documentation (e.g. purpose of the system, limitations of the system, hardware and software requirements, how to load/run/install software, how to save a file, how to print data, how to add records, how to delete/edit records, input format, output formats, sample runs, error messages, error handling, trouble-shooting guide/help line,

- describe the need to evaluate a solution in terms of the efficiency of the solution, the ease of use
- of the solution, and the appropriateness of the solution
- describe the need for a variety of evaluation strategies e.g.
- compare the solution with the original task requirements
- identify any limitations and necessary improvements to the system
- evaluate the users' responses to the results of testing the system

Safety and security

Candidates should be able to:

- describe common physical safety issues and what causes them, e.g. electrocution from spilling
- drinks, fire from sockets being overloaded or equipment overheating, tripping over trailing cables
- describe some simple strategies for preventing these issues
- evaluate own use of IT equipment and develop strategies to minimise the potential safety risks
- explain what is meant by personal data
- explain why personal data should be confidential and protected
- explain how to avoid inappropriate disclosure of personal data including: own name, address, school name, a picture in school uniform
- discuss why e-safety is needed
- evaluate own use of the internet and use strategies to minimise the potential dangers, e.g. only using websites recommended by teachers, only using a learner-friendly search engine
- evaluate own use of email and use strategies to minimise the potential dangers, including only emailing people already known, thinking before opening an email from an unknown person, never emailing the school's name or a picture of a learner in school uniform
- evaluate own use of social media/networking sites, instant messaging and internet chat rooms and use strategies to minimise the potential dangers, including: knowing how to block and report unwanted users, never arranging to meet anyone alone, and always telling an adult first and meeting in a public place, avoiding the misuse of images, using appropriate language, respecting confidentiality
- describe measures which should be taken when playing games on the internet (including not using real names)

Effective security of data

○ define the term hacking and describe its effects
○ explain what is meant by the term hacking and the measures that must be taken in order to protect data.
○ explain what is meant by the terms user id and password stating their purpose and how they are used to increase the security of data
○ explain what is meant by the terms biometric data and why biometric data is used
• security of data online
○ explain what is meant by the term digital certificate and its purpose
○ explain what is meant by the term Secure Socket Layer (SSL)
○ describe the features of a web page that identify it as using a secure server
○ define the terms: phishing, pharming, smishing
○ describe the methods which can be used to help prevent phishing, pharming and smishing
○ describe the potential for the malicious use of technology to collect personal data, including: phishing, pharming, smishing
○ describe how it is possible to recognise when someone is attempting to obtain personal data, report the attempt and avoid the disclosure of information
○ explain the difference between moderated and un-moderated forums and the relative security of these
○ explain the concept of and how to recognise spam mail and avoid being drawn into it

○ describe what encryption is and why it is used
○ define the term computer virus and describe its effects
○ describe the effects of infecting a computer with a virus from a downloaded file
○ describe how to take preventative action to avoid the danger of infecting a computer with a virus from a downloaded file
○ describe the measures that must be taken in order to protect against hacking
○ describe how it is possible to be the subject of fraud when using a credit card online
○ explain the issues related to security of data in the cloud
○ explain the concept of a firewall and why it is used
○ discuss the effectiveness of different methods of increasing security
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9. **Audience**
Candidates should be able to:
9.1 audience appreciation
• show a clear sense of audience when planning and creating ICT solutions
• analyse the needs of an audience
• explain why solutions must meet the needs of the audience
9.2 legal, moral, ethical and cultural appreciation
• explain the need for copyright legislation and the principles of copyright relating to computer software (e.g. software piracy)
• describe methods that software producers employ to prevent software copyright being broken
• discuss the legal, moral, ethical and cultural implications of creating an ICT solution
• create ICT solutions that are responsive to and respectful of the needs of the audience
• discuss why the internet is not policed (although legislation is enforced in some countries) and the effects of this, including the existence of inappropriate sites
10. **Communication**
Candidates should be able to:
10.1 communicate with other ICT users using email
• describe the constraints that affect the use of email, including: the laws within a country, acceptable language, copyright, local guidelines set by an employer, the need for security, netiquette, password protection
• define the term spam
• explain why spam needs to be prevented
• describe the methods which can be used to help prevent spam
• explain why email groups are used
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24 Cambridge IGCSE Information and Communication Technology 0417. Syllabus for examination in 2016.
10.2 effective use of the internet
• fundamentals of the internet
○ define the terms internet and intranet
○ explain the differences between the internet, an intranet and the World Wide Web (WWW)
○ explain the concept of storage in the cloud
○ define and understand the terms: HyperText Transfer Protocol (HTTP), HyperText Transfer Protocol secure variant (HTTPS), Uniform Resource Locator (URL), hyperlink, Internet Service Provider (ISP), File Transfer Protocol (FTP)
○ describe the structure of a web address
○ explain what a web browser is used for
○ explain what a search engine is used for
○ define the term blog and describe the use of a blog as a means of communication
○ define the term wiki and describe the use of a wiki as a means of communication
○ define the term social networking and describe the use of social networking websites as a means of communication.
• advantages and disadvantages of using the internet

○ explain why the internet is so popular giving reasons such as the amount of information available and the speed of accessing information
○ explain why an internet search to find relevant information is not always fast
○ explain why it is not always easy to find reliable information on the internet
○ explain how to evaluate the reliability of information found on the internet
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11. File management
Candidates should be able to:
11.1 manage files effectively
• identify different file types and their use/s, for example: css, csv, gif, htm, jpg, pdf, png, rtf, txt, zip
• locate stored files
• open and import files of different types
• save files in a planned hierarchical directory/folder structure
• save files using appropriate file names
• save and print files in a variety of formats, including: a draft document, final copy, screen shots, database reports, data table, graph/chart, a web page in browser view, a web page in HTML view
• save and export data into file formats for your applications packages, e.g. .doc, .docx, .xls, .sdb, .sdc, .rtf, .ppt
• explain why generic file formats are needed
• save and export data into generic file formats, including: .csv, .txt, .rtf, .pdf, .css, .htm
11.2 reduce file sizes for storage or transmission
• explain the need to reduce file sizes for storage or transmission
• identify where it will be necessary to reduce file sizes for storage or transmission
• reduce file sizes using file compression
12. Images
Candidates should be able to:
• use software tools to place and edit an image to meet the requirements of its intended application and audience
• know when it is necessary to edit an image and can appropriately:
○ place an image with precision
○ resize an image
○ maintain or adjust the aspect ratio of an image, or distort an image where appropriate
○ crop an image
○ rotate an image
○ reflect an image
○ adjust the colour depth of an image
○ adjust the brightness of an image
○ adjust the contrast of an image
○ understand the need to reduce image resolution to increase transmission speed
○ reduce the resolution of an image to reduce file size
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13. Layout
Candidates should be able to:
NB: The word ‘document’ in this section relates to any of the applications used within sections 16 to 21.
• use software tools to prepare a basic document to match the purpose and target audience
○ create a new document or, where appropriate, open an existing document
○ enter text and numbers
○ use editing techniques to manipulate text and numbers, including: highlight, delete, move, cut, copy, paste, drag and drop
○ place objects into the document from a variety of sources, including: text, image, screen shot,

spreadsheet extract, database extract, clip art or chart
○ create a table with a specified number of rows and columns
○ format a table and its contents
○ place text or objects in a table
○ wrap text around a table, chart or image, including: above, below, square and tight
• use software tools to use headers and footers appropriately within a range of software packages
○ create headers and footers
○ align consistently within a document the contents of the header and footer including: to left margin, right margin and centre of the page
○ place automated objects in headers and footers, including: automated file information, automated page numbering, text, date, time
○ explain why headers and footers are needed

14. **Styles**

Candidates should be able to:
• understand the purpose of a corporate house style and ensure that all work produced matches this
○ produce documents which conform to a corporate house style
○ explain what is meant by corporate branding/house style
• apply styles to ensure consistency of presentation
○ explain why consistent styles are required
○ apply consistent styles using a variety of application packages
○ ensure that page/slide layout is consistent, including: font styles, text alignment, spacing between lines, spacing between paragraphs, spacing before and after headings
○ create and apply an appropriate style, including: font type (serif, sans-serif), point size, font colour, alignment, line spacing, style of bullets, text alignment to the left, right, centre or fully justified
○ select an appropriate font style for a task, taking into account the audience
○ use text enhancement, including: bold, underline, italic, highlight
○ create and apply paragraph style(s) with a new style name to match the corporate house style

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15. **Proofing**

Candidates should be able to:
15.1 software tools
• use software tools to ensure that all work produced contains as few errors as possible
○ explain why the automated suggestions given by spell check software do not always give the correct response
○ use automated tools, including spell check facilities, to remove errors
○ use validation routines to minimise errors
○ explain why validation checks must be appropriate to the data that is being checked
15.2 proofing techniques
• accuracy of data entry
○ describe the importance of accuracy and the potential consequences of data entry errors
○ correct errors in data entry, including: transposed numbers, spelling, consistent character spacing, consistent case and factual errors (following proofreading by a third party)
○ check to ensure consistent line spacing, to remove blank pages/slides, remove widows/ orphans, ensure that tables and lists are not split over columns or pages/slides
• verification
○ define the term verification
○ describe visual verification (i.e. visual comparison of data entered with a data source)
○ describe double data entry (i.e. entering data twice and the computer compares the two sets of data, either by comparing them after data has been entered or by comparing them during data entry)
○ explain the need for validation as well as verification

16 **Graphs and charts**

Candidates should be able to:
• produce a graph or chart from the given data
○ select data to produce a graph/chart, including: using contiguous data, non-contiguous data, and specified data ranges where necessary
○ select the graph or chart type to match the required purpose and meet the needs of the audience
○ label the graph or chart, including: chart title, legend, sector labels, sector values, segment labels, segment values, percentages, category axis title, value axis title, category axis labels, value axis labels, scales
○ add a second data series to a chart, as necessary
○ add a second axis to a chart, as necessary
○ change the maximum and minimum values of an axis scale to appropriate values
○ enhance the appearance of a graph or chart, including: changing the colour scheme or fill patterns, extracting a pie chart sector to meet the needs of the audience
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17. Document production
Candidates should be able to:
• format text and organise page layout
○ set page size
○ set page orientation
○ set page and gutter margins
○ set the number of columns
○ set the column width and spacing between columns
○ define the terms widow and orphan
○ explain why it is necessary to use page, section and column breaks, to adjust pagination and to avoid widows and orphans
○ set and remove page, section and column breaks
○ set line spacing, including: single, 1.5 times, double, multiple, spacing before and after paragraphs
○ set tabulation settings, including: indented paragraphs, hanging paragraphs
○ format text as bulleted or numbered lists to meet the needs of the audience
• use software tools to edit tables
○ edit a table structure, where necessary, to include: insert row(s), delete row(s), insert column(s), delete column(s), merge cells
○ set horizontal cell alignment: left, right, centre, fully justified
○ set vertical cell alignment: top, centre, bottom
○ format cells and the cell contents, including: show gridlines, hide gridlines, wrap text within a cell, shading/colouring cells
• mail merge a document with a data source
○ explain why mail merged documents are created
○ edit a master document to insert appropriate fields from a data source
○ insert special fields such as date
○ select records to merge
○ merge a document with selected fields
○ save and print merge master document
○ save and print selected merged documents as appropriate
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18. Data manipulation
Candidates should be able to:
18.1 create a database structure
• design and use suitable software tools to create an appropriate database record structure
○ define the terms flat-file database and relational database

○ explain where it would be appropriate to select a flat-file database or a relational database
○ assign appropriate data types to fields, including: text, numeric, (integer, decimal, percentage, currency), date/time, Boolean/logical (–1/0, yes/no, true/false)
○ explain that other field types like placeholders for media, including images, sound bites and video clips are used in commercial databases
○ use short, meaningful file and field names
○ format fields and identify sub-types, including: specifying the number of decimal places, specifying a particular currency
○ identify the structure of external data with different file types, including: .csv, .txt, .rtf
○ locate, open and import data from an existing file
○ define and understand the terms primary key and foreign key and their role in a relational database
○ create a relationship between two or three tables
○ discuss the advantages and disadvantages of using relational tables rather than a flat file database
• design and use suitable software tools to create a data entry form appropriate to purpose and audience.
○ understand the key features of form design
○ create a data entry form to meet the needs of the audience
○ create a data entry form with all fields included to match the purpose of the task
○ create an appropriate data entry form, including: appropriate font styles and sizes, spacing between fields, character spacing of individual fields, use of white space, radio buttons, drop down menus, highlighting key fields
18.2 manipulate data
• use arithmetic operations or numeric functions to perform calculations within a database
○ create a calculated field
○ perform calculations at run time using formulae and functions, including: addition, subtraction, multiplication, division, sum, average, maximum, minimum, count
• use suitable software tools to sort data appropriately in a database
○ sort data using a single criterion and using multiple criteria where necessary, into ascending or descending order
• use suitable software tools to search a database to select subsets of data
○ perform suitable searches using a single criterion and using multiple criteria, on different field types like alphanumeric, numeric, Boolean
○ perform searches using a variety of operators including: AND, OR, NOT, LIKE, >, <, =, >=, <=, <>
○ perform searches using wildcards, as appropriate
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18.3 present data
• use suitable software tools to produce reports to display data appropriate to purpose and audience
○ produce reports to display all the required data and labels in full where required
○ use appropriate headers and footers within a database report, including: report header, report footer, page header, page footer
○ set report titles
○ produce different output layouts as required, including: tabular format, labels,
○ align data and labels appropriately, including: right aligning numeric data and decimal alignment
○ format numeric data, including: number of decimal places, variety of currencies, percentages as required by the task
○ show and hide data and labels within a report, as necessary
○ export data for use in another application
19. **Presentations**
Candidates should be able to:
• use a master slide to appropriately place objects and set suitable styles to meet the needs of the

audience
○ identify the need for consistency of presentation, in terms of styles, point sizes, colour schemes, transitions and animations
○ use the master slide to place objects appropriately, including: images, text, logos, slide footers, automated slide numbering
○ use the master slide to set font styles, heading styles and colour schemes as required by the audience
○ manipulate and use specified areas for headings, subheadings, bullets, images, charts, colours, text boxes, presenter notes, audience notes as appropriate
• use suitable software tools to create presentation slides to meet the needs of the audience
○ insert a new slide, when required, selecting the appropriate slide type for the purpose
○ place text on the slides including: headings, subheadings, bulleted lists where appropriate
○ apply consistent styles using available software tools, including: select from the presentation colour scheme, the use of text enhancement
○ place appropriate images on the slides, including: still images, video clips, animated images
○ place sound within a slide
○ place charts imported from a spreadsheet
○ place other objects including: symbols, lines, arrows, call out boxes
○ create consistent transitions between pages
○ create consistent animation facilities on text, images and other objects
• use suitable software tools to display the presentation in a variety of formats, including: looped on-screen carousel, controlled presentation, presenter notes, audience notes taking into account the needs of the audience
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20. **Data analysis**
Candidates should be able to:
20.1 create a data model
• create and edit a data model
○ define the terms: cells, rows, columns, sheets, tabs, pages, charts
○ explain the importance of accurate data entry in spreadsheets
○ enter data with 100% accuracy
○ edit the structure of an existing model, including: inserting cells, deleting cells, inserting rows, deleting rows, inserting columns, deleting columns
○ define the terms: formula, function, absolute reference, relative reference, ranges, named cell, named range, nested formulae/functions
○ explain the difference between a formula and a function
○ explain the order in which mathematical operations are performed and use brackets to make sure that formulae work
○ use mathematical operators, including: add, subtract, multiply, divide, indices, where necessary
○ explain the function of, and use, absolute and relative referencing, as appropriate, when formulae are to be replicated
○ use absolute and relative references, named cells, named ranges and nested formulae, as appropriate
○ use functions, including: sum, average, maximum, minimum, integer, rounding, counting, LOOKUP, VLOOKUP, HLOOKUP, IF and nested functions, when necessary
20.2 test the data model
• devise suitable test plans and test the data to demonstrate that the model works
○ define the terms: testing, test data, expected outcome, actual outcome, normal data, abnormal data, extreme data, what if
○ explain the need to test a model before it is used
○ select appropriate test data to thoroughly test a data model
○ justify the choice of test data
○ calculate the expected outcomes before testing the model

○ test the model, correcting errors and re-testing, where appropriate
○ test the model by the use of what ifs
20.3 manipulate data
• use search tools in spreadsheet software to select subsets of data
○ search using a single criterion and using multiple criteria, where appropriate, with a variety of operators like: AND, OR, NOT, LIKE, >, <, =, >=, <=
○ search, where appropriate, using wildcards
• sort data using a single criterion and using multiple criteria into ascending or descending order, as required
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20.4 present data
• use software tools to adjust the display features in a spreadsheet
○ adjust row height, column width and cell sizes so that all data, labels, and formulae are fully visible
○ wrap text within cells so that all data are fully visible
○ hide and display rows and columns, where appropriate
○ use features to enhance a spreadsheet, including: text colour, cell colour, bold, underline, italic and shading to meet the needs of the audience
○ format numeric data to display the number of decimal places, a variety of different currency values, percentages as appropriate
○ set the spreadsheet to display formulae and values
○ set the page orientation to portrait or landscape as necessary
○ set the page layout so that it prints on a specified number of pages
○ use conditional formatting appropriately to change display format depending upon the contents of a cell
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Website authoring
Candidates should be able to:
• identify and describe the three web development layers
• understand the function of: content layer to enter the content of a web page structure; presentation layer to format whole web page(s) or individual elements; behaviour layer to enter scripting language to a web page or an individual element
21.2 create a web page
• use software tools to create the content layer of a web page to meet the needs of the audience
○ explain why tables are used to structure elements within a web page
○ insert a table, including: table header, table rows, table data
○ use attributes within a table, including: width in terms of pixels and % values, border to create visible and invisible borders, set the border thickness, merging cells, background colour, horizontal alignment, vertical alignment, to meet the needs of the audience
• use software tools to appropriately place the content in a web page
○ insert appropriate objects into a web page including: text, still images, moving images, sound clips
○ apply styles to text within a web page
○ apply styles to a list, including: ordered list, unordered list
○ insert an appropriate image into a web page
○ use appropriate attributes of an image to adjust its size
• use software tools to create navigation within a web page and between web pages
○ describe the function of a hyperlink
○ describe the function of an anchor and why it is rarely seen from the browser view
○ define and understand the terms relative file path and absolute file path
○ explain why absolute file paths must not be used for hyperlinks to locally saved web pages/ objects
○ create an anchor within a web page

○ create hyperlinks from: text, images
○ create hyperlinks, where appropriate, to: anchors on the same page, other locally stored web pages, a website using the URL, send mail to a specified email address, open in a specified location including: the same window, new window, with a window named as specified
21.3 use stylesheets
• use software tools to create the presentation layer of a web page
○ explain what is meant by the term cascading stylesheets
○ explain the hierarchy of multiple attached stylesheets and in-line styles within a web page
○ create generic external styles including: background properties (like colour), table properties (like border, spacing, padding), font properties (like style, typeface)
○ create external styles to be tagged in a web page including: h1, h2, h3, p, li as required
○ specify the font appearance for each style, including features like: font family, size, colour, alignment, bold and italic
○ save styles in cascading stylesheet format
○ explain why relative file paths must be used for attached stylesheets
○ attach an external stylesheet to a web page using a relative file path
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21.4 test and publish a website
• know how to publish a website
○ explain how to upload and publish the content of a website using ftp
○ test that web page elements work
○ test navigation within/from a web page using a test plan
• test a website
○ create a test plan to test a website including: web page elements are visible, navigation within/from a web page
○ justify the choice of test plan

Year 7 Physical Education

Invasion Games 1

Acquiring and developing skills

- identify what they need to do to improve their own fitness
- explain some of the principles for warming up and preparing safely and effectively
- select appropriate exercises to put into their warm-up and cool-down activities to suit the event
- identify the types of fitness most needed in different events, and exercises and activities that will help to prepare them effectively.

Selecting and applying skills, tactics and compositional ideas

- recognise, find and use space well in the games
- change speed in attack and know what to do to score points in the games
- plan as a team and organise themselves into different roles, choosing and using skills and tactics that affect the games positively
- defend effectively, slowing games down and making it hard for opponents to find space.

Knowledge and understanding of fitness and health

- identify the types of fitness and preparation that are most important to the games
- recognise that speed, strength and flexibility are important in these games
- identify which parts of the body need most preparation.

Evaluating and improving performance

- identify how they and others are more or less effective in different parts of the games, and use this information to decide what they need to practice
- analyse how to make the most of their own strengths in the games.

Gymnastic Activities

Acquiring and developing skills

- perform single actions and balances with control, showing tension and extension
- move into and out of these actions and balances fluently, showing good weight transfer
- link actions and balances together and show good timing when working with others
- use a variety of ways to be inverted.

Selecting and applying skills, tactics and compositional ideas

- explain how changing and varying the speed, direction and level of their sequence affects the way it looks and increases its interest for the audience
- use some of these ideas when designing and performing their sequences
- describe the relationships they have with their partner(s), and use different combinations of chosen shapes, directions in which they move, and timing of their actions.

Knowledge and understanding of fitness and health

- explain the importance of preparing the body for gymnastic activities
- explain how strength, power and flexibility are important for good-quality work and control
- identify the parts of the body that work hardest, and choose safe exercises to prepare these for work.

Evaluating and improving performance

- identify what to look out for when observing actions, phrases and sequences
- describe and sequence what they see or do, using appropriate terminology
- identify strengths in technique and in composition

describe these strengths to others and pick out areas that they need to improve.

Net/ Wall Games

Acquiring and developing skills

- hit the ball with reasonable consistency and accuracy in cooperative and competitive rallies
- play a range of different shots on both sides of the body with sound basic technique in backswing, contact and follow-through.

Selecting and applying skills, tactics and compositional ideas

- select and implement simple shot combinations which move their opponent out of position
- describe how to vary the strength, height and direction of their shots during a game
- identify which shots are used most for defending and which for attacking.

Knowledge and understanding of fitness and health

- explain what they need to do to improve their own fitness level
- identify areas of fitness most needed in the games, and explain how involvement in these games contributes to their fitness, health and wellbeing
- carry out warm-up and cool-down routines safely
- select and incorporate stretching exercises which are suitable for the game and their own needs.

Evaluating and improving performance

- use simple game analysis techniques to evaluate their own and others' consistency and accuracy
- understand and identify the basic principles of good technique including backswing, contact and follow-through
- choose and implement appropriate practices to improve their own play.

Outdoor and Adventurous Activities

Acquiring and developing skills

- show increasing awareness of how to cope with orienteering events successfully
- apply their skills accurately, effectively and confidently
- plan and trial their efforts.

Selecting and applying skills, tactics and compositional ideas

- have the confidence to attempt new tasks
- make effective decisions
- adapt approaches to meet the challenges of different environments
- relate well to others in the group taking on roles and responsibilities.

Knowledge and understanding of fitness and health

- describe the physical nature of the task
- explain how to develop their own fitness in order to improve their performance.

Evaluating and improving performance

- review their work, identifying strengths and weaknesses
- suggest alternative approaches
- try out different approaches.

Invasion Games 2

Acquiring and developing skills

- identify what they need to do to improve their own fitness
- explain some of the principles for warming up and preparing safely and effectively
- select appropriate exercises to put into their warm-up and cool-down activities to suit the event
- identify the types of fitness most needed in different events, and exercises and activities that will help to prepare them effectively.

Selecting and applying skills, tactics and compositional ideas

- recognise, find and use space well in the games
- change speed in attack and know what to do to score points in the games
- plan as a team and organise themselves into different roles, choosing and using skills and tactics that affect the games positively
- defend effectively, slowing games down and making it hard for opponents to find space.

Knowledge and understanding of fitness and health

- identify the types of fitness and preparation that are most important to the games
- recognise that speed, strength and flexibility are important in these games
- identify which parts of the body need most preparation.

Evaluating and improving performance

- identify how they and others are more or less effective in different parts of the games, and use this information to decide what they need to practice
- analyse how to make the most of their own strengths in the games.

Athletic Activities
Acquiring and developing skills • perform a range of running, jumping and throwing skills with control, accuracy, power and sound technique • show a good range of skills used over different times and distances and the ability to vary them to suit the needs of the activity or event. **Selecting and applying skills, tactics and compositional ideas** • pace their effort well to meet the needs of a range of activities and events • perform effectively in different events by adapting their skills to meet the challenges and tasks set. **Knowledge and understanding of fitness and health** • identify what they need to do to improve their own fitness • explain some of the principles for warming up and preparing safely and effectively • select appropriate exercises to put into their warm-up and cool-down activities to suit the event • identify the types of fitness most needed in different events, and exercises and activities that will help to prepare them effectively. **Evaluating and improving performance** • identify strengths and weaknesses in their own and others' performance • select an appropriate focus for improvement • explain how the practice they are using will affect their performance. •

Year 8 Physical Education

Invasion Games 1

Acquiring and developing skills
- use an increasing range of personal techniques consistently, accurately and fluently while playing small-sided games
- adapt skills to different situations.

Selecting and applying skills, tactics and compositional ideas
- organise themselves as a team to attack and defend and play in different positions
- select and use a range of tactics and strategies and apply them successfully in different games
- explain the similarities between the different invasion games played.

Knowledge and understanding of fitness and health
- describe what they need to do to improve their own fitness
- design and carry out warm-up and cool-down routines safely and effectively
- explain why these activities are important
- recognise and describe how games affect their health and fitness.

Evaluating and improving performance
- explain the range of decisions they have to make in a game
- identify their own and others' strengths and weaknesses
- implement practices to improve their performance
- identify aspects of technique that require practice and improvement
- assess and comment on the ways in which they can improve, e.g. attack and defence tactics.

Gymnastic Activities

Acquiring and developing skills
- perform single and linked actions accurately
- perform a wider range of skills, actions and agilities including rolls, flight from hands, partner supports and balances, and some vaults
- consistently show control, tension and extension
- use transference of weight effectively.

Selecting and applying skills, tactics and compositional ideas
- design and perform aesthetically pleasing and imaginative sequences
- demonstrate a good memory for sequences and repeat their sequences accurately
- perform with confidence and fluency.

Knowledge and understanding of fitness and health
- identify where the strength and suppleness is needed in their own and others' work
- select exercises that help their strength and suppleness
- devise and implement an effective and safe warm-up and cool-down routine with a partner.

Evaluating and improving performance
- analyse performance against specific criteria and give accurate feedback on what they see
- identify specific aspects that need improvement in their own and others' work

suggest the options that will lead to improvement.

Net/ Wall Games

Acquiring and developing skills
- hit the ball with reasonable consistency and accuracy in cooperative and competitive rallies
- play a range of different shots on both sides of the body with sound basic technique in backswing, contact and follow-through.

Selecting and applying skills, tactics and compositional ideas
- select and implement simple shot combinations which move their opponent out of position
- describe how to vary the strength, height and direction of their shots during a game
- identify which shots are used most for defending and which for attacking.

Knowledge and understanding of fitness and health
- explain what they need to do to improve their own fitness level
- identify areas of fitness most needed in the games, and explain how involvement in these games contributes to their fitness, health and wellbeing
- carry out warm-up and cool-down routines safely
- select and incorporate stretching exercises which are suitable for the game and their own needs.

Evaluating and improving performance
- use simple game analysis techniques to evaluate their own and others' consistency and accuracy
- understand and identify the basic principles of good technique including backswing, contact and follow-through
- choose and implement appropriate practices to improve their own play.

Outdoor and Adventurous Activities

Acquiring and developing skills
- show increasing awareness of how to cope with orienteering events successfully
- apply their skills accurately, effectively and confidently
- plan and trial their efforts.

Selecting and applying skills, tactics and compositional ideas
- have the confidence to attempt new tasks
- make effective decisions
- adapt approaches to meet the challenges of different environments
- relate well to others in the group taking on roles and responsibilities.

Knowledge and understanding of fitness and health
- describe the physical nature of the task
- explain how to develop their own fitness in order to improve their performance.

Evaluating and improving performance
- review their work, identifying strengths and weaknesses
- suggest alternative approaches
- try out different approaches.

Invasion Games 2

Acquiring and developing skills

- use an increasing range of personal techniques consistently, accurately and fluently while playing small-sided games
- adapt skills to different situations.

Selecting and applying skills, tactics and compositional ideas

- organise themselves as a team to attack and defend and play in different positions
- select and use a range of tactics and strategies and apply them successfully in different games
- explain the similarities between the different invasion games played.

Knowledge and understanding of fitness and health

- describe what they need to do to improve their own fitness
- design and carry out warm-up and cool-down routines safely and effectively
- explain why these activities are important
- recognise and describe how games affect their health and fitness.

Evaluating and improving performance

- explain the range of decisions they have to make in a game
- identify their own and others' strengths and weaknesses
- implement practices to improve their performance
- identify aspects of technique that require practice and improvement
- assess and comment on the ways in which they can improve, e.g. attack and defence tactics.

Athletic Activities

Acquiring and developing skills

- perform a range of running, jumping and throwing skills with control, accuracy, power and sound technique
- show a good range of skills used over different times and distances and the ability to vary them to suit the needs of the activity or event.

Selecting and applying skills, tactics and compositional ideas

- pace their effort well to meet the needs of a range of activities and events
- perform effectively in different events by adapting their skills to meet the challenges and tasks set.

Knowledge and understanding of fitness and health

- identify what they need to do to improve their own fitness
- explain some of the principles for warming up and preparing safely and effectively
- select appropriate exercises to put into their warm-up and cool-down activities to suit the event
- identify the types of fitness most needed in different events, and exercises and activities that will help to prepare them effectively.

Evaluating and improving performance

- identify strengths and weaknesses in their own and others' performance
- select an appropriate focus for improvement
- explain how the practice they are using will affect their performance

Year 9 Physical Education

Invasion Games 1

Acquiring and developing skills
- use a good range of techniques for attack and defence
- adapt and improvise techniques to suit different situations.

Selecting and applying skills, tactics and compositional ideas
- put the game plans into effect with success and adapt and vary them when necessary
- play at greater speed and with more precision, selecting skills and techniques to apply principles of attack and defence effectively.

Knowledge and understanding of fitness and health
- identify what they need to do to become fitter to play games
- explain the effects of regular exercise on the body, how it contributes to health and wellbeing, and how it affects different parts of the body.

Evaluating and improving performance
- observe performances and identify strengths and weaknesses in their own and others' performance
- identify what they need to improve, set targets for improvement and practise to improve their game.

Gymnastic Activities

Acquiring and developing skills
- perform a range of skills, agilities and movement phrases with precision, tension and extension
- show confidence in their movement and have good control of their bodies
- transfer weight well to initiate and stop movement.

Selecting and applying skills, tactics and compositional ideas
- design sequences on their own and in groups showing a clear understanding of compositional principles
- perform their sequences with a clear understanding of the criteria for judging them and of performing to an audience

Knowledge and understanding of fitness and health

- explain what they need to do to continue to improve their personal fitness for gymnastics
- identify opportunities that will allow them to continue their interest in gymnastic activities outside lessons.

Evaluating and improving performance

- devise and use criteria and checklists to analyse performance effectively
- identify correctly important strengths and weaknesses
- make good choices and take decisions about what to do to improve their own and others' work.

Net/ Wall Games

Acquiring and developing skills

- use a range of strokes and shots with accuracy and consistency.

Selecting and applying skills, tactics and compositional ideas

- readily adapt strokes and court positioning in response to their opponents' actions
- explain and demonstrate the essential elements of attack and defence in both high-net and low-net games.

Knowledge and understanding of fitness and health

- explain how exercise can be beneficial to fitness, health and wellbeing and identify the key features of training programmes that maintain health and fitness for the games
- explain how to become involved in joining a local club and have enough knowledge of the requirements of the activity to feel confident enough to do so.

Evaluating and improving performance

- analyse performance, using criteria to identify tactical and technical strengths and weaknesses
- select the key factors that underpin successful performance and set targets to try and improve play.

Outdoor and Adventurous Activities

Acquiring and developing skills

- consistently use specific techniques and skills accurately
- adapt skills to new and unfamiliar situations

Selecting and applying skills, tactics and compositional ideas

- select and apply appropriate techniques or strategies to practical contexts
- work together to identify, prepare for and execute a challenge, so that conflicting evidence has been discussed, evaluated and a conclusion reached

Knowledge and understanding of fitness and health
- explain clearly what they need to do to be able to achieve a higher level of fitness in the specific activities involved in outdoor and adventurous activities
- describe how being involved in outdoor and adventurous activities helps their personal health and wellbeing.

Evaluating and improving performance
- work collaboratively to improve on group effectiveness and respond constructively to the environment they are in
- review practice as a matter of course and start to set targets for improvement.

Invasion Games 2

Acquiring and developing skills
- use a good range of techniques for attack and defence
- adapt and improvise techniques to suit different situations.

Selecting and applying skills, tactics and compositional ideas
- put the game plans into effect with success and adapt and vary them when necessary
- play at greater speed and with more precision, selecting skills and techniques to apply principles of attack and defence effectively.

Knowledge and understanding of fitness and health
- identify what they need to do to become fitter to play games
- explain the effects of regular exercise on the body, how it contributes to health and wellbeing, and how it affects different parts of the body.

Evaluating and improving performance
- observe performances and identify strengths and weaknesses in their own and others' performance
- identify what they need to improve, set targets for improvement and practise to improve their game.

Athletic Activities

Acquiring and developing skills
- demonstrate good technique in all phases of a run or race
- use a range of throwing and jumping techniques with precision and power, incorporating preparation and recovery phases.

Selecting and applying skills, tactics and compositional ideas
- select appropriate approaches for the event
- distribute their effort effectively within a competition
- choose when to use power and when to use greater control.

Knowledge and understanding of fitness and health

- identify different forms of training that will improve their own personal fitness
- select exercises and training activities appropriate to an event
- explain the value of joining a club.

Evaluating and improving performance

- analyse performance accurately
- identify the key factors that underpin successful performance
- set targets and programmes to improve performance.

Year 10 and Year 11 Physical Education

(Cambridge IGCSE Syllabus 0413)

Unit 1 Subcategories	Year 10	Year 11
Skeleton and Joints	S1	
Muscles and Tendons	S1	
Circulatory and Respiratory Systems	S1	
Motivation and Mental Preparation	S1	
Fitness	S2	
Physique		S1
Skill		S1
Drugs		S2

Unit 2 Subcategories	Year 10	Year 11
Health	S2	
Diet	S2	
Games; Safe Practise		S1
Injuries		S1
Exercise and Training		S2

Unit 3 Subcategories	Year 10	Year 11
Leisure and Recreation		S2
Facilities, Participation, Excellence		S2
Global Events		S2
Media		S2
Access to Sports		S2

Football & Unit 1: Factors Affecting Performance

Planning, performing and evaluating

- A detailed understanding of the rules and regulations for highly successful team play
- a very good understanding of tactics with the ability to plan strategies appropriate to all phases of the game
- an ability to show to a high standard a full range of skills, understanding and 'vision' in respect of an individual position. Also, as a result of his/her 'reading' of the game and good positional sense he/she is able to perform the skills, if required, at varying speed with consistency, accuracy and with total control.

Skeleton and joints

- The four major functions of the skeleton:
  - shape and support,
  - movement,
  - protection,
  - blood production.
- examples of major bones of the body to highlight these functions
- relevance to performance and participation in physical activity
- examples of different types of joints:
  - fixed or immovable joints/fibrous joints,
  - slightly movable joints/cartilaginous joints,
  - freely movable joints/synovial joints
- describe the components of each type of joint
- describe the range of movements which includes:
  - flexion, extension, rotation, abduction and adduction
- ligament, cartilage and synovial fluid problems.

Muscles and tendons

- How muscles and their composition, function and action, affect movement and performance
- fast twitch for power and strength activities, slow twitch for endurance activities.
- how activities and exercise affect the composition and efficiency of muscles, focusing on:
  - deltoid,
  - trapezius,
  - pectorals,
  - biceps,
  - triceps,
  - latissimus dorsi,
  - abdominals,
  - gluteals,
  - quadriceps,
  - hamstrings,
  - gastrocnemius
- how improved muscle functioning can improve performance and participation in physical activities
- the role of antagonistic pairs, prime movers and synergists during a range of physical activities, using examples from the muscles listed above.
- the role and function of tendons during movement.

Badminton & Unit 1: Factors Affecting Performance

Planning, performing and evaluating

- A detailed understanding of the rules and regulations for highly successful play in both singles and doubles games
- a very good understanding of tactics with the ability to plan strategies appropriate to all phases of the game
- an ability to select the best shots to play in practice and match situations and produce very good attacking strokes with control, consistency and accuracy.

Circulatory and respiratory systems

- Components of blood and the functions of plasma, red cells, white cells, platelets
- the role of haemoglobin in red blood cells
- how red blood cells are affected when people live at altitude
- illness/conditions that result from an imbalance in blood cells, e.g. haemophilia, anaemia, and the effect this could have on a person's ability to participate in sports.
- how the circulatory and respiratory systems affect performance and participation levels:
  - lactic acid and oxygen debt tolerance,
  - duration of activity,
  - recovery rate
- how activity and exercise develop and affect the efficiency of the circulatory and respiratory systems:
  - stronger heart muscle,
  - increased stroke volume and cardiac output,
  - lower resting heart rate,
  - more efficient gaseous exchange,
  - increased vital capacity,
  - tidal volume,
  - oxygen debt tolerance
- the difference between aerobic and anaerobic work and the effect of lactic acid production on performance, with examples from specific physical activities.

Motivation and mental preparation

- Meaning of motivation
- types of motivation:
  - intrinsic and extrinsic,
  - rewards and incentives
- arousal and performance; how one is affected by the other.
- physiological responses of the body to arousal:
  - production of adrenaline,
  - increased heart rate,
  - increased respiration,
  - muscles tense in readiness for action.
- inverted u theory (Yerkes-Dodson theory)
- causes of over-arousal
- causes of decline in performance; anxiety
- need for relaxation and visualisation
- goal setting – smarter (specific, measurable, agreed, realistic, time-phased, exciting, recorded) as a means of controlling anxiety
- mental rehearsal.

Volleyball & Unit 1: Factors Affecting Performance

Planning, performing and evaluating

- a detailed understanding of the rules and regulations for highly successful team play
- a very good understanding of tactics with the ability to plan strategies appropriate to all
- phases of the game;
- an ability to select the best shot/pass to play in a game situation and produce very good attacking shots with control, consistency and accuracy amongst players of similar ability
- he/she would be able to perform a three-touch routine with comparative ease. He/she would also be able to control a served ball at a variety of speeds using appropriate methods, set and reverse set from 3, serve to a high standard and block effectively.

Fitness

- Simple definition of fitness
- components of fitness; measurement and explanation, with example, of each of the following.
  - health related fitness:
    - cardio-vascular endurance (aerobic fitness),
    - body composition,
    - flexibility,
    - muscular endurance,
    - speed,
    - stamina,
    - strength.
  - skill related fitness:
    - agility,
    - balance,
    - co-ordination,
    - speed of reaction, timing.
- health related exercise programme
- tests of cardio-vascular fitness:
  - 12 minute run (cooper test),
  - multi stage fitness test.
- factors which affect fitness.
- fitness, graphs/charts/data; understanding, dissemination of information.
- maximum oxygen uptake (vo2 max.) as a measurement of cardio-vascular fitness.
- plan a health-promoting exercise programme; considerations, involve FITT (frequency, intensity, time, training activity).

Cross Country Running & Unit 2: Health, Safety and Training

Planning, performing and evaluating

- an ability to plan, carry out and evaluate, without supervision, an effective personal training schedule for his/her chosen event
- an ability to run the following distances over a marked grass course with some undulations in less than the following times: girls 2000m 9 mins 0 seconds, boys 3000m 11 mins 30 seconds
- an ability to run the distance showing very good technique and pace judgement throughout
- an ability to apply tactics and strategies to very good effect throughout the race.

Diet

- The body needs nutrients for energy, growth and repair of cells. these nutrients are proteins, carbohydrates, fats, vitamins and minerals. also water and fibre.
- consider proteins, carbohydrates, fats, vitamins, minerals, water and fibre; why they are important in the diet, examples of sources in food, if and why they are useful sources of energy.
- different energy requirements:
  - teenagers need more energy than young children,
  - males tend to need more energy than females,
  - athletes need more energy than non-athletes,
  - people with active lifestyles need more energy than people with non-active lifestyles
- energy balance; daily energy food intake needs to balance daily energy need.
- unused energy is stored as fat. person risks becoming obese.

Track and Field Unit 2: Health, Safety and Training

Planning, performing and evaluating

- the ability to distinguish and apply advanced skills, techniques and ideas consistently showing high standards of precision, control, fluency and originality
- the ability to perform in three events in athletics (no more than two from any one group) showing very good technique and consistently high standards of control and fluency, and where appropriate power, speed and stamina. (For boys, 245 points, for girls, 200 points)
- the ability to draw from their understanding of tactics to outwit the opposition in competitions and adopt a leading role within a group or team
- the ability to evaluate their own work and independently make adjustment to technique in response to changing circumstances, show sound leadership skills
- a thorough understanding of the role of rules and conventions of the activity.

Health

- World Health Organisation (WHO) definition of health – a state of complete physical, mental and social well-being.
- Physical well-being:
  - all body systems work well,
  - free from injuries and illnesses,
  - able to carry out every day physical tasks.
- Mental well-being:
  - able to cope with stress,
  - can control emotions,
  - feel good about yourself.
- Social well-being:
  - have essential human needs, food, clothing and shelter,
  - have friendship and support,
  - have some value in society,
  - able to mix with others.
- Health and fitness:
  - need for a healthy lifestyle,
  - need to eat a balanced diet,
  - need to take regular exercise,
  - need to avoid drugs and pollution.

Basketball & Revision of PE Theory

Planning, performing and evaluating

- a detailed understanding of the rules and regulations for highly successful team play
- a full range of skills in a competitive game relative to his/her age group, showing good reactions and an element of disguise in play; skills to include left and right handed lay-up shots
- an ability to fulfil positional requirements with sufficient flexibility to change roles depending
- upon the situation
- an awareness of tactics and strategies necessary for successful team play including the ability to set a pick (screen) and roll situation.

Revision

- recall information pertaining to areas covered in Units 1 and 2 thus far.

Football & Unit 1: Factors Affecting Performance

Planning, performing and evaluating

- a detailed understanding of the rules and regulations for highly successful team play
- a very good understanding of tactics with the ability to plan strategies appropriate to all
- phases of the game
- an ability to show to a high standard a full range of skills, understanding and 'vision' in
- respect of an individual position. Also, as a result of his/her 'reading' of the game and good positional sense he/she is able to perform the skills, if required, at varying speed with consistency, accuracy and with total control.

Physique

- understand the term physique.
- three extreme body types:
  - endomorph – fat – degree of fatness,
  - mesomorph – muscular – degree of muscularity,
  - ectomorph – thin – degree of linearity.
- examples of each body type, from different sports.
- advantages of certain body types for certain sports e.g.:
  - gymnast,
  - high jumper,
  - rugby prop forward.

Skill

- Definition of skill.
- types of skill: basic and complex, fine and gross motor skills, open and closed continuum
- factors affecting variations in skill level: age and maturity, motivation, anxiety, arousal conditions, facilities, environment, teaching and coaching
- simple information processing model: what is meant by the terms input, decision making, output, feedback
- types of feedback: intrinsic, extrinsic, knowledge of performance, knowledge of results.
- the importance of feedback
- how you learn a new skill; considerations – limited channel capacity, overload, only do a little
- instructions should be simple, demonstration should be simple (when you first do movement it goes into short term memory, through practice – movement goes into long term memory).

Badminton & Unit 1: Factors Affecting Performance

Planning, performing and evaluating

- a detailed understanding of the rules and regulations for highly successful play in both singles and doubles games
- a very good understanding of tactics with the ability to plan strategies appropriate to all phases of the game
- an ability to select the best shots to play in practice and match situations and produce very good attacking strokes with control, consistency and accuracy.

Games; Safe Practice

- Schoolteachers have a responsibility to ensure that Physical Education activities are undertaken in a safe and secure environment.
- some activities are exciting because they are challenging and there is an element of risk.
- participants need to:
  - be aware of the correct clothing and safety equipment to be used,
  - know how to check and handle equipment,
  - know safety arrangements,
  - know how to assist and support other pupils,
  - adhere to a code of behaviour,
  - recognise the need to warm up and cool down after exercise,
  - be able to give examples of the above in a practical situation.
- safety rules and regulations. these will differ from activity to activity.
- participants should be able to outline the safety arrangements, potential dangers, rules and regulations in one activity/game from each of the seven categories of activities.

Injuries

- Minor injuries are an acceptable part of playing sport. More serious injuries are less acceptable and may be avoided.
- Prevention of some injuries may be possible if the participant
  - warms up and cools down correctly,
  - uses the correct equipment,
  - knows the rules and regulations,
  - checks if the surface and facilities are safe to use,
  - does not participate when tired,
  - ensures that a teacher is always present.
- Types of injuries. Can vary from simple to very severe.
- Simple treatment for the following:
  - winding,
  - simple cut or graze,
  - blisters,
  - bruises,
  - muscle, tendon and ligament injuries.
- RICE (Rest + Ice + Compression + Elevation)
- Causes of injuries are many and varied but mainly:
  - impacting with ground or hard surface,
  - impacting with another person,
  - sudden or twisting movement,
  - environment (hot or cold, wet or dry),
  - lack of preparation; warm up, cool down,
  - inadequate clothing/body protection,
  - not following instructions.

Volleyball & Unit 1: Factors Affecting Performance

Planning, performing and evaluating

- a detailed understanding of the rules and regulations for highly successful team play;
- a very good understanding of tactics with the ability to plan strategies appropriate to all
- phases of the game;
- an ability to select the best shot/pass to play in a game situation and produce very good attacking shots with control, consistency and accuracy. Amongst players of similar ability
- he/she would be able to perform a three-touch routine with comparative ease. He/she
- would also be able to control a served ball at a variety of speeds using appropriate methods, set and reverse set from 3, serve to a high standard and block effectively.

Exercise and training

- Exercise is an important component of a healthy lifestyle
- exercise has physical, mental and social benefits
- exercise works on all the body systems
  - movement occurs when muscles contract
  - muscles obtain energy from food some glucose is stored in the muscles and liver as glycogen
- cells get energy from glucose in the process called respiration
- aerobic respiration uses oxygen to release energy:
  - glucose + oxygen → energy + carbon dioxide + water
- when aerobic exercise occurs
  - muscles contract and some energy is used,
  - muscle contractions release heat – warm up,
  - carbon dioxide is excreted by the lungs
- need aerobic exercise when one exercises over a lengthy period of time examples of type of exercise
- anaerobic respiration occurs without oxygen:
  - glucose → energy + lactic acid
- when anaerobic exercise occurs:
  - less energy is produced than in aerobic respiration,
  - excess lactic acid causes pain and fatigue muscles are less efficient and eventually stop working
  - lactic acid is removed by breathing in more oxygen this extra oxygen at the end of anaerobic exercise is called oxygen debt
- anaerobic respiration is used for short periods of intense exercise
- examples of aerobic and anaerobic exercises
- training is a programme and a procedure used to improve performance
  - training principles are:
    - specificity,
    - overload,
    - progression,
    - reversibility
- the effects of too much exercise through over-training
- training methods; explanation of different types and their benefits
  - circuit training – explanation of different types and exercises
  - weight training (strength training) – a method of training using weights
- training can be:
  - isotonic (dynamic) – involves muscle shortening examples, advantages and disadvantages
  - isometric (static) – muscles contract but stay the same length examples, advantages and disadvantages
  - plyometrics – alternative method of power training
  - fartlek training – method of training which improves aerobic and anaerobic energy systems
- example of this type of fartlek training
- used in a variety of sports, e.g. cycling and skiing
- advantages and disadvantages

– continuous training – a method of training which requires participants to run, swim, cycle for set periods of time
- advantages and disadvantages
  – resistance training – a method of training which requires athletes to work against a load (resistance)
- advantages and disadvantages
  – interval training – a method of training which involves periods of fast work and periods of recovery (slow work or rest) the recovery period enables the lactic acid in muscles to be removed
- advantages
- effect of exercise on the heart, circulatory and respiratory systems
  – response of the heart; measurement of heart rate per minute:
- stroke volume and cardiac output
- cardiac output = stroke volume × heart rate
  – responses of the circulatory system
  – responses of the respiratory system
- minute volume = tidal volume × respiratory rate
- examples of breathing changes with exercise
  – how the body controls body temperature
  – training effects of exercise on the major organ and systems of the body, especially the heart, the circulatory system, the respiratory system and the skeletal muscles.

Cross Country Running & Unit 1: Factors Affecting Performance & Unit 3: Reasons and Opportunities for Participation in Physical Activity

Planning, performing and evaluating

- an ability to plan, carry out and evaluate, without supervision, an effective personal training schedule for his/her chosen event
- an ability to run the following distances over a marked grass course with some undulations in less than the following times: girls 2000m 9 mins 0 seconds, boys 3000m 11 mins 30 seconds
- an ability to run the distance showing very good technique and pace judgement throughout
- an ability to apply tactics and strategies to very good effect throughout the race.

Drugs

- Definition – any chemical introduced to the body which affects how the body works
- doping; term used to improve performance by taking drugs
- reasons why sports persons take drugs
- types of drugs identified as performance enhancing and banned by the international Olympic
- committee:
  – stimulants,
  – narcotic-analgesics,
  – anabolic agents,
  – diuretics,
  – anxiety reducing drugs,
  – peptide hormones and analogues,
  – drugs subject to certain restrictions: alcohol, marijuana, beta blockers
- types of drugs and their reactions on the body
- blood doping
- other drugs, which may be socially accepted:
  – smoking: dangers and the long-term effects
  – alcohol: dangers and the long-term effects.

Leisure and Recreation

- Leisure time – the free time a person has when not working or sleeping
- factors which determine what people do during leisure time:

– their age
– interests
– social circumstances
– facilities available
– where people live
- determinants of the growth in leisure activities:
  – advances in technology (in the work place) resulting in
  - people working shorter days
  - having longer holidays
  - more unemployed
  – improvements in health care, people live longer,
  – growth in leisure time activities,
  – growth in facilities
- recreation is any voluntary activity a person might do during leisure time
- physical recreation is any physical activity a person may choose to do during leisure time
- reasons why people choose recreational activities
- role and aims of local sports clubs
- why clubs find the role of the volunteer essential
- roles within a club may be secretary, treasurer, chairperson, fixtures/membership secretary, coach
- how schools can support participation at all levels
- role that schools play through lessons, examinations and extracurricular activities to promote participation.

Facilities, participation, excellence

- Facilities for physical activities vary depending on where people live
  – urban areas may have leisure centres, sports stadiums, specialist sports clubs
  – rural areas and remote areas are unlikely to have purpose built sports facilities but may have natural facilities for such activities as sailing, hill walking, rock climbing, etc.
- sport and recreation facilities may be controlled and run by
  – local authorities
  – private companies
  – voluntary organisations
- local authorities normally own sports facilities but do not always run them
  – companies compete for chances to run the facilities
  – dual use facilities are often school sports facilities which are also used by the local community
- private companies run sports facilities as a business in order to make a profit these might be golf clubs, theme parks or holiday activity centres syllabus content
- voluntary organisations tend to cater for a local need for example:
  – local scout and youth groups,
  – places of worship, e.g. churches,
  – large national charities, e.g. the youth hostels association
- the location of sports facilities; main considerations
- facilities catering for different groups; identify the groups
- types of sports centres; range of activities and people they cater for
- factors which encourage people to take part in physical activities
- factors which determine excellence in sport
- sponsorship – business provides financial support for an athlete, team or event/competition
  – advantages and disadvantages to a sponsor
  – advantages and disadvantages of sponsorship to the sport.

Track and Field & Unit 3: Reasons and Opportunities for Participation in Physical Activity

Planning, performing and evaluating

- the ability to distinguish and apply advanced skills, techniques and ideas consistently
- showing high standards of precision, control, fluency and originality
- the ability to perform in three events in athletics (no more than two from any one group) showing very good technique and consistently high standards of control and fluency, and where appropriate power, speed and stamina (For boys, 245 points, for girls, 200 points)
- the ability to draw from their understanding of tactics to outwit the opposition in competitions and adopt a leading role within a group or team
- the ability to evaluate their own work and independently make adjustment to technique in response to changing circumstances, show sound leadership skills
- a thorough understanding of the role of rules and conventions of the activity.

Global Events

- The impact of global events on participation, e.g. Olympic Games, Football World Cup
- advantages and disadvantages of being the host nation:
  - – the development of facilities
  - – the development of training facilities
  - – how coaching systems are developed to ensure a high level of success, particularly for the host nation
- social impacts of global events on a host nation
- why both professionals and amateurs compete in the Olympic games
- how education supports participation at the highest level through scholarships, sports colleges, trust funds
- the reasons why certain countries develop excellence in specific sports reasons should include geographical, climatic, financial, traditional and cultural
- identify certain countries and the sports in which they excel in
- examples could include:
  - – Kenya/Ethiopia – middle/long distance running,
  - – brazil – football,
  - – Nordic/Alpine countries – skiing,
  - – Fiji – rugby sevens,
  - – New Zealand – rugby,
  - – Japan – sumo wrestling,
  - – Cuba – boxing

Media

- Types of media – television, radio, books, newspapers, magazines, internet
- positive influence of the media coverage:
  - – promotes sport
  - – more people can see, hear, and read about sport
  - – creates 'sports stars' which can have positive and negative effects on youngsters,
  - – can inform and entertain
  - – if seen on television, sports can attract sponsorship, improving facilities, training and equipment
- drawbacks of media coverage:
  - – more pressure on managers and teams to do well
  - – players adopt a 'win at all cost' attitude rather than playing for enjoyment
  - – some may resort to cheating or the use of drugs
  - – sports stars have less privacy due to media attention
  - – the media may demand changes in the law/rules of some sports
  - – media may become very critical of referees'/officials' decisions
- impact of television on sport:
  - – sport occupies a large percentage of viewing time,
  - – television allows viewers to see the biggest competitions in the world,

– event/match analysis allows the viewer to see the events in great detail e.g. slow motion replays,

– TV companies contribute to event prize money,

– colour TV allows some sports to be seen which were not possible with black and white TV, e.g. snooker, bowls,

– TV companies often decide, due to their financial support, which sports will be shown,

– minority sports; positive and negative effects.

Basketball & Unit 3: Reasons and Opportunities for Participation in Physical Activity

Planning, performing and evaluating

- a detailed understanding of the rules and regulations for highly successful team play;
- a full range of skills in a competitive game relative to his/her age group, showing good reactions and an element of disguise in play; skills to include left and right handed lay-up shots;
- an ability to fulfil positional requirements with sufficient flexibility to change roles depending
- upon the situation;
- an awareness of tactics and strategies necessary for successful team play including the ability to set a pick (screen) and roll situation

Access to Sport

- general availability of sport to all; some elements are common to all three headings below (e.g. women-only swimming sessions both develop sporting/recreational opportunities for women, and may also provide the only access to sport for women in some communities because of religious beliefs)
- campaigns and legislation to create equal opportunity
  – athletes with disability:
  - rapid expansion in participation in disability sport, wider variety of activities available in schools and greater willingness to adapt sports to meet people's needs;
  - improvement in facilities, both for those taking part and spectators;
  - increase in number of coaches available, and in the number of coaches specialising in working with athletes with disability;
  - open competitions, e.g. shooting, archery, creation of competitions where able-bodied athletes and athletes with disability may enter as a pair, e.g. European dance championships;
  - disability games alongside able-bodied;
  - greater social acceptability of people with disabilities;
  - increase in number of role models who are also developing media roles in presenting their sport
  – gender:
  - women encouraged to take part in sport;
  - money for facilities, growth in popularity of certain activities targeted at women, e.g. step
  - aerobics, swing into shape, emergence of role models;
  - recognition that women can compete in events which, in the past, were considered too strenuous for women, e.g. marathon, triple jump, pole vault;
  - men and women competing on equal terms, e.g. equestrian sport
- – social equality:
- the role of local community groups in developing traditional sports and activities for ethnic minority groups;
- the role of local groups in developing a sense of social inclusion through sporting activity programmes (may also apply in the case of athletes with disability);
- cultural attitudes, the relaxation of certain conditions to allow participation for certain cultures;
- affordable sports

Year 7 Music

Form and structure

Why does music need structure?

- identify different starting points for composing music
- identify how structures can make it easier for the listener to both make sense of what is heard and remember musical material

What structures can we use to organize sounds?

- sing and accompany a call-and-response song with accuracy and appropriate dynamics
- comment on when and why the structure of call and response is used
- recognise, describe and create pieces with contrasting sections in simple rondo form

Using structures to describe a journey:

- compose a 'journey', selecting appropriate structures to achieve intended effect
- make written notes to keep a record of their ideas and experiments to develop compositions
- collaborate with others to share information and ideas

Exploring acoustic and electronic sounds

What is music technology?

- identify different acoustic and electronic sounds and understand the difference between the two terms

How can music technology help change and control sounds?

- understand that sounds can be created through sampling or synthesis and that they can then be modified and stored electronically
- understand that every sound has its own unique 'fingerprint' or envelope
- understand the way in which MIDI allows musical information to be produced, stored and reproduced
- understand the central role that recorded sound has on our everyday lives, and the significance of recorded sound on music making and particularly live performance

Combining acoustic and electronic sounds:

- combine acoustic and electronic sounds effectively to convey a sense of mood and perform their work with understanding and conviction
- analyse and evaluate the effectiveness of their work
- organise, sequence and link what they say so listeners can follow it

Musical cycles
What is a cyclic pattern? • identify the difference between cyclic and linear structures How can cyclic patterns be developed? • experiment with media and different methods and approaches to communicate ideas and feelings about landscape • identify the difference between cyclic and linear structures • compare and contrast different examples of non-western music • identify and explore timbral possibilities on a variety of instruments • identify and create timbral change and notate these using mnemonics • explore cyclic models and identify different cyclic patterns • identify different cyclic patterns : Using cyclic patterns to compose music • compare and perform music confidently, using cyclic patterns and conventions taken from a specific musical genre

Year 8 Music

Exploring ways to develop musical ideas

What is variation form?

- identify the main musical idea in a number of variations

How can we vary given musical material?

- alter words and speech rhythms to create new patterns
- identify changes of mode and tempo
- develop ideas using mode, tempo, timbre, rhythm and sequence
- pupils identify variations using appropriate key terms and musical vocabulary
- sing and maintain a part with accuracy and confidence
- improvise rhythmic and melodic material to a given chord sequence

Making our own variations:

- plan, organise and create work in variation form, using devices explored in this unit
- evaluate the effectiveness of their work and describe the process of the group activity
- identify the musical devices used by other composers

Jazz improvisation

What is improvisation?

- copy and improvise rhythmic and melodic material

How can we improvise?

- develop motifs using a blues scale
- improvise patterns over diatonic harmony
- analyse riffs and identify other features that can be used in their own work
- improvise riffs, making small changes with confidence and control
- identify differences and similarities between improvising and more reflective composing

Creating an improvised composition:

- create an improvised performance

Music for dance

What are the characteristics of African dance music?

- identify some conventions used in African dance music

How can we learn to use the conventions in these dance forms?

- identify different speeds of pulse within the same music
- perform rhythmically using both hands
- create and perform rhythmic patterns
- perform from mnemonics
- use mnemonics as support for performing rhythmic and timbral patterns

Creating dance music:

- Create music using conventions and appropriate notations

Year 9 Music

Music and media

How is music used?

- identify similarities and differences in the roles and functions of art from different times and places
- identify when and how music is used to create an intended effect

What effects can music create?

- describe, using appropriate vocabulary, how and where different music can be used to portray specific and/or contrasting messages
- recognise the relationship between musical features and the effects created, referring to specific musical devices
- explain why a particular composition may have been chosen for a specific advertisement
- identify specific ways in which music and visual images can be brought together
- identify specific musical devices used to create different effects

Composing music to achieve an intended effect:

- plan, organise and present a short, effective advertising campaign suitable for radio broadcast
- discuss and evaluate conflicting evidence to arrive at a considered viewpoint

The concerto

What is the significance of the concerto?

- Identify how a concerto uses soloists and ensemble to create a musical dialogue

Investigating and making:

- identify musical ideas and how they are developed between soloists and the larger ensemble
- improvise in small groups, using the concept of argument as the stimulus
- identify how musical ideas are introduced and developed
- improvise a cadenza with an understanding of how to exploit the musical ideas
- identify differences and similarities in concertos taken from different times and places

Composing a concerto:

- compose music that uses and exploits conventions found in the genre of concerto
- identify how technological developments can be a stimulus for composing
- identify particular sounds and techniques that could be used creatively and musically

Exploring songs

Is song a unique genre:

- identify songs from different times, places and cultures

What makes a song popular?

- understand the importance of form and structure in a song

- recognise some common features in popular songs over time and across culture
- recognise how words and music reflect the songwriter's context, standpoint, purpose and audience
- compare melodies and lyrics with awareness of the combined effect
- sing confidently and understand the importance of the instrumental accompaniment in an arrangement
- recognise and understand a simple structure in a song
- recognise how a good instrumental arrangement can add depth and quality to a song
- recognise and understand the effects of different authorial standpoints and how it affects the meaning

Evaluating and developing work:

- produce a song with a strong structure and accompaniment
- produce a combined text and score for the song
- produce their work to a given deadline and participate in a performance of their song
- understand how music technology can be used to create whole song structures, and to enhance instrumental arrangements of songs
- understand that backing tracks created using music technology can change the nature of performance

Year 10 and Year 11 Music

(Cambridge IGCSE Syllabus 0410)

General listening skills
• identify some different features of the music • identify the characteristic features of a concerto • practice of melodic or rhythmic dictation

Music in the Classical period
• learn about the characteristic features of a minuet and trio and a string quartet • learn about the characteristic features of a sonata • compare different styles

Music in the Romantic period
• identify characteristic features of a march and a symphony • identify the key, cadences and modulations • describe how the dynamic markings contribute to the character of this music

Baroque music
• learn the characteristics of a Baroque concerto • recognise the characteristics of recitative • identify how many times the ground bass is heard • present the characteristics of Baroque music

Twentieth-century music
• identify scale/key (major), instruments (orchestra), number of beats per bar/measure (2) etc • describe in detail the texture of the music in different passages • learn the characteristics of jazz and musicals • learn the characteristics of minimalism

World music

Arab music and the music of Africa
• recognise the sound of the following specific instruments:
  ○ Rabāb
  ○ Kora
  ○ Xylophone
  ○ Ūd
• be familiar with the following general characteristics of music from this part of the world:
  ○ Syncopation
  ○ Polyrhythm
  ○ Ostinato

Latin American Music

- recognise the sound of the following specific instruments:
  - Bandoneon
  - Pan-pipes
  - Charango
  - Guitar
- be familiar with the following general characteristics of music from this part of the world:
  - Syncopation
  - Homophonic
  - Texture

Performing

- play examples of music in the style that they are studying
- demonstrate rudiments (e.g. articulation or ornamentation) or different instrumental effects (e.g. arco or pizzicato)
- Find compositional devices in music
- perform their own and each other's compositions

Composing

- handle simple chord sequences and cadences
- demonstrate knowledge of principles of melody writing and word setting
- create accompanying patterns for different instruments
- complete two contrasting compositions

Kompetenzerwartungen am Ende der Jahrgangsstufe 6

Deutsch Sekundarstufe 1

3.1. Sprechen und Zuhören

Sprechen

1. Die Schülerinnen und Schüler sprechen im Deutschunterricht deutlich und artikuliert und lesen flüssig.
2. Sie erzählen eigene Erlebnisse und Erfahrungen sowie Geschichten geordnet, anschaulich und lebendig. *(Gestaltungsmittel wie Steigerung, Andeutungen, Vorausdeutungen, Pointierung einsetzen)*
Schwerpunkt der unterrichtlichen Arbeit
3. Sie informieren anschaulich und verständlich über Sachverhalte oder über Arbeitsergebnisse *(über einfache Sachverhalte berichten; in einfacher Weise Personen, Gegenstände und Vorgänge beschreiben)*
Schwerpunkt der unterrichtlichen Arbeit
4. Sie tragen zu einem begrenzten Sachthema stichwortgestützt Ergebnisse vor und setzen hierbei in einfacher Weise Medien ein.
5. Sie tragen Wünsche und Forderungen angemessen vor.
6. Sie formulieren eigene Meinungen und vertreten sie.

Gespräche führen

7. Sie vereinbaren Gesprächsregeln für die Gesprächsführung und achten auf deren Einhaltung. *(z. B. in einer Diskussion andere zu Wort kommen lassen, aufmerksam zuhören, auf die Äußerungen anderer eingehen)*
Schwerpunkt der unterrichtlichen Arbeit
8. Sie erkennen Störungen in Gesprächsabläufen und erarbeiten Verbesserungsvorschläge. *(eigene und fremde Gespräche untersuchen, Gegenstand des Gesprächs klären, Absichten und Erwartungen benennen)*

Zuhören

9. Sie hören aufmerksam zu und reagieren sach- und situationsbezogen auf andere.
10. Sie machen sich Notizen, um Gehörtes festzuhalten.

Gestaltend sprechen / szenisch spielen

11. Sie sprechen gestaltend in vorgegebenen Situationen. *(Artikulation, Tempo und Intonation/Modulation; Körpersprache: Mimik und Gestik)*
12. Sie tragen kürzere Texte auswendig vor. *(als Möglichkeit der Texterschließung erproben)*
13. Sie setzen beim szenischen Spiel verbale und nonverbale Mittel ein und erproben deren Wirkung. *(in der Darstellung eigener Erlebnisse, Haltungen, Situationen)*
Schwerpunkt der unterrichtlichen Arbeit

3.2. Schreiben

Schreiben als Prozess

1. Die Schülerinnen und Schüler setzen sich ein Schreibziel und wenden elementare Methoden der Textplanung, Textformulierung *(z. B. Notizen, Stichwörter)* und Textüberarbeitung an. *(insbesondere in Schreibkonferenzen, einschließlich der rechtschriftlichen Überarbeitung; eigene Texte dem Zweck entsprechend und adressatengerecht gestalten, sinnvoll aufbauen und strukturieren: z. B. Lesbarkeit, Blattaufteilung, Rand, Absätze)*

Texte schreiben

2. Sie erzählen Erlebnisse und Begebenheiten frei oder nach Vorlagen anschaulich und lebendig. Sie wenden dabei in Ansätzen Erzähltechniken an. *(z. B. einen Traum, von anderen Personen erzählen, eine Geschichte nacherzählen; eine Bildergeschichte erzählen; einen Erzählkern ausgestalten; eine Geschichte zu einem Sprichwort, zu Reizwörtern erzählen; Erzählperspektive, Dialog)*
Schwerpunkt der unterrichtlichen Arbeit
3. Sie informieren über einfache Sachverhalte und wenden dabei die Gestaltungsmittel einer sachbezogenen Darstellung an.*(Sachlichkeit, Vollständigkeit, Reiherfolge, Tempus etc.)*. Sie berichten *(z.B. über einen beobachteten Vorfall, Unfall, ein Ereignis, eigene Erfahrungen mit Personen, Tieren; Beobachtungen in anderen Ländern; über ein Buch)* . Sie beschreiben *(z. B. Tiere, Gegenstände und Vorgänge)*
Schwerpunkt der unterrichtlichen Arbeit
4. Sie formulieren zu vorgegebenen Situationen eigene Meinungen und begründen sie. *(z. B. in einem argumentierenden Text als Anklage oder Verteidigung einer Figur aus einer Erzählung, in einer Diskussion zu einem jugendspezifischen Thema)*
5. Sie verfassen einfache appellative Texte. *(z. B. Briefe, Einladungen, Kleinanzeigen)*
6. Sie geben den Inhalt kürzerer Texte/Textausschnitte in eigenen Worten wieder.
7. Sie entwickeln und beantworten Fragen zu Texten und belegen ihre Aussagen
8. Sie formulieren Aussagen zu diskontinuierlichen Texten. *(z. B. einfache Tabellen, Grafiken)*
9. Sie formulieren persönliche Briefe.

Produktionsorientiertes Schreiben

10. Sie verfassen Texte nach Textmustern *(z. B. Märchen, Fabeln)*, entwickeln fremde Texte weiter, schreiben sie um und verfremden sie. *(z. B. durch Perspektivwechsel, neuen Schluss)*

3.3 Lesen – Umgang mit Texten und Medien

Lesetechniken und -strategien

1. Die Schülerinnen und Schüler unterscheiden informationsentnehmendes und identifikatorisches Lesen. Sie erfassen Wort- und Satzbedeutungen, satzübergreifende Bedeutungseinheiten und bauen unter Heranziehung eigener Wissensbestände ein zusammenhängendes Textverständnis auf. Sie verfügen ansatzweise über die notwendigen Arbeitstechniken der Textbearbeitung:
Informationen entnehmen
Textaussagen markieren, unterstreichen, Texte gliedern
Überschriften für Teilabschnitte formulieren
Notizen zum Gelesenen machen
Fragen an einen Text formulieren
einzelne Begriffe, Aussagen klären

2. Sie nutzen Informationsquellen. *(z. B. Schülerlexika, Wörterbücher - in Ansätzen auch das Internet)*
Schwerpunkt der unterrichtlichen Arbeit: Erkunden und Nutzen einer Bibliothek

Umgang mit Sachtexten und Medien

3. Sie entnehmen Sachtexten *(auch Bildern und diskontinuierlichen Texten)* Informationen und nutzen sie für die Klärung von Sachverhalten.
4. Sie unterscheiden grundlegende Formen von Sachtexten *(Bericht, Beschreibung)* in ihrer Struktur, Zielsetzung und Wirkung.
5. Sie erfassen Inhalte medial vermittelter jugendspezifischer Texte. *(z. B. altersgemäße Fernsehsendungen, Hörbuch)* und beschreiben deren Wirkungen. *(Informations- und Unterhaltungsfunktion unterscheiden; die Handlungsführung und Figuren einer altersgemäßen Fernsehserie untersuchen)*
Schwerpunkt der unterrichtlichen Arbeit

Umgang mit literarischen Texten

6. Sie unterscheiden einfache literarische Formen *(z.B.Erzählung, Märchen, Sagen, Fabeln; Texte unterschiedlicher Art zu einem für die Altersstufe wichtigenThema)*, erfassen deren Inhalte und Wirkungsweisen unter Berücksichtigung sprachlicher und struktureller Besonderheiten. *(elementare Strukturen von Märchen und Sagen, Fabeln; Texte unterschiedlicher Art zu einem für die Altersstufe wichtigenThema)*, erfassen deren Inhalt und Wirkungsweisen unter Berücksichtigung grundlegender sprachlicher und struktureller Merkmale. *(z.B. elementare Strukturen von Märchen erfassen, in Ansätzen durch Themen- und Motivvergleich den historischen Bezug kennen lernen)*
7. Sie wenden einfache Verfahren der Textuntersuchung und Grundbegriffe der Textbeschreibung an. *(Texte inhaltlich erfassen; Handlungen, Figuren und Konflikte kommentieren; einfache Formen der Gliederung von Texten als Hilfsmittel des Verstehens kennen lernen - grafische Darstellung, Überschriften finden)*
8. Sie verstehen kürzere Erzählungen, Jugendbücher und Ausschnitte aus literarischen Ganzschriften. *(sich mit Inhalten, Handlungen und Figuren vor dem Hintergrund eigener Erfahrungen auseinandersetzten; Buchbesprechung; Vorstellen selbst gelesener Bücher)*
Schwerpunkt der unterrichtlichen Arbeit
9. Sie untersuchen Gedichte *themen- und motivgleiche Gedichte z. B. zu Jahreszeiten bzw. Natur)* unter Berücksichtigung einfacher formaler, sprachlicher Beobachtungen. *(z. B. Reimschema, Metrum, Klang, Vergleich, Motive)*
10. Sie untersuchen das Gesprächsverhalten von Figuren in Dialogen aus altersgemäßen Texten*(z. B. elementare Formen einer Inszenierung; Gedichte, Sketche, Szenenausschnitte; Besprechen einer Theateraufführung)*

Produktionsorientierter Umgang mit Texten und Medien

11. Sie gestalten Geschichten und Gedichte nach, formulieren sie um, produzieren Texte mithilfe vorgegebener Textteile. *(bildliche Elemente z. B. Comics, Fotostory als Ergänzung von Texten nutzen; z.B. Sprachspiele, konkrete Poesie entwerfen, erproben, variieren; Texte in geeigneter Form präsentieren)*

3.4 Reflexion über Sprache

Sprache als Mittel der Verständigung

1. Die Schülerinnen und Schüler erkennen die Abhängigkeit der Verständigung von der Situation *(mündlich oder schriftlich, privat oder öffentlich)*und der Rolle der Sprecherinnen oder Sprecher. *(z. B. Gespräche mit Freunden, mit Lehrkräften, mit Eltern)*
2. Sie schließen von der sprachlichen Form einer Äußerung auf die mögliche Absicht ihres Verfassers.

Sprachliche Formen und Strukturen in ihrer Funktion

3. Sie unterscheiden Wortarten und bezeichnen sie terminologisch richtig. *(Nomen, Verb, Adjektiv, Pronomen, Artikel, Präposition)*
4. Sie kennen die einschlägigen Flexionsformen und deren Funktionen und wenden sie richtig an. *(Deklination, Konjugation, Tempus; Steigerung)*
5. Sie beschreiben die grundlegenden Strukturen des Satzes. *(Satzarten: Aussage-, Frage-, Aufforderungssatz; Satzglieder: Subjekt, Prädikat, Adverbiale)*
6. Sie untersuchen die Bildung von Wörtern *(Wortbausteine, Wortzusammensetzungen, Wortableitungen, Wortfamilien, Wortfelder)*. Sie verstehen einfache sprachliche Bilder.
7. Sie verfügen über Einsichten in sprachliche Strukturen durch die Anwendung operationaler Verfahren. *(Verschiebe-, Umstell-, Weglass-, Ersatz-, Erweiterungs-, Ergänzungs-, Umformungsprobe)*

Sprachvarianten und Sprachwandel

8. Sie unterscheiden zwischen mündlichem und schriftlichem Sprachgebrauch. *(z. B. Wortwahl; Stilebene; auch nach Abkürzungen; bewusste Wahl der Satzgliedfolge, Standard- und Umgangsprache)*
9./10. Sie untersuchen Gemeinsamkeiten und Unterschiede zwischen Sprachen. *(z. B. Satzstrukturen, Wörter und Wortgebrauch)*

Richtig Schreiben - Laut- /Buchstabenebene

11. Sie verfügen - aufbauend auf der Arbeit in der Grundschule - über vertieftes Wissen der Laut-Buchstaben-Zuordnung und wenden es an. *(Dehnung und Schärfung, gleich und ähnlich klingende Laute, Schreibung der s-Laute)*

Richtig Schreiben - Wortebene

12. Sie beherrschen wortbezogene Regelungen und deren Ausnahmen. *(Kennzeichnung von Kürze und Länge des Stammvokals, Wortableitungen und Worterweiterungen)*

Richtig Schreiben - Satzebene

13. Sie kennen und beachten satzbezogene Regelungen. *(Kennzeichen für die Großschreibung von Nomen, Satzschlusszeichen, Kommasetzung bei Aufzählungen, Zeichensetzung in der wörtlichen Rede)*

Richtig Schreiben - Lösungsstrategien

14. Sie korrigieren und vermeiden Fehlschreibungen durch
richtiges Abschreiben
Sprech- und Schreibproben
Berücksichtigung der Silbenstruktur von Wörtern
Fehleranalyse in Anlehnung an den jeweiligen Rechtschreibschwerpunkt
Nachschlagen in einem Wörterbuch

Kompetenzerwartungen am Ende der Jahrgangsstufe 8

3.1 Sprechen und Zuhören

Sprechen

1. Die Schülerinnen und Schüler enstwickeln zunehmend eine zuhörergerechte Sprechweise.
2. Sie erzählen intentional und adressatengerecht.
3. Sie beschaffen Informationen werten sie aus und geben sie adressatengerecht weiter. *(über funktionale Zusammenhänge in sachgerechter Sprache berichten; Vorgänge, Abläufe und Personen beschreiben)*
4. Sie verarbeiten Informationen zu kürzeren, thematisch begrenzten freien Redebeiträgen und präsentieren diese mediengestützt. *(z. B. kurze Referate als Grundlage für eine Diskussion, eine Textbesprechung)*
Schwerpunkt der unterrichtlichen Arbeit
5. Sie äußern Gedanken, Wünsche und Forderungen strukturiert, situationsangemessen und adressatenbezogen.
6. Sie tragen einen eigenen Standpunkt vor und können ihn begründen.

Gespräche führen

7. Sie beteiligen sich an einem Gespräch sachbezogen und ergebnisorientiert und unterscheiden zwischen Gesprächsformen. *(z. B. in einer Diskussionsrunde oder einem Planungsgespräch einen eigenen Standpunkt entwickeln undbegründen, sich während des Gesprächs mit den Argumenten anderer auseinander setzen, weitere Gegenargumente entwicklen)*
Schwerpunkt der unterrichtlichen Arbeit
8. Sie unterscheiden in strittigen Auseinandersetzungen zwischen sachlichen und personenbezogenen Beiträgen und erarbeiten Kompromisse. *(z. B. eigene und fremde Gespräche unter dem Aspekt des Sprechverhaltens der Sprecherinnen und Sprecher untersuchen, Formulierungsweisen vergleichen)*

Zuhören

9. Sie verfolgen konzentriert zusammenhängende mündliche Darstellungen und klären durch Fragen ihr Verständnis.
10. Sie formulieren Stichwörter oder Sätze, um das Verständnis von gesprochenen Texten zu sichern und den Inhalt wiedergeben zu können.

Gestaltend sprechen / szenisch spielen

11. Sie setzen sprechgestaltende Mittel bewusst ein. *(z. B. bei einer Beschwerde, Entschuldigung)*
12. Sie tragen Texte sinngebend und möglichst auswendig vor. *(z. B. Balladen)*
13. Sie erschließen sich literarische Texte in szenischem Spiel *(einfache dialogische Texte)* und setzen dabei verbale und nonverbale Ausdrucksformen ein. *(z. B. Standbild, Pantomime, Improvisation)*
Schwerpunkt der unterrichtlichen Arbeit

3.2 Schreiben

Schreiben als Prozess

1. Die Schülerinnen und Schüler gestalten Schreibprozesse zunehmend selbstständig. *(zur Ideenfindung geeignete Verfahren wie Cluster oder Mindmap einsetzen, den Text nach den Normen der Sprachrichtigkeit überarbeiten, stilistische Varianten erproben und Formulierungsentscheidungen auch in Schreibkonferenzen begründen, hierbei die Möglichkeiten von Textverarbeitungsprogrammen nutzen)*

Texte schreiben

2. Sie erzählen von Erfahrungen, Gefühlen, Meinungen.*(z. B. Tagebucheintrag, Briefe, Schilderung eines Erlebnisses)*
3. Sie informieren über Sachverhalte *(z. B. Leben eines Autors bzw. einer Autorin, gesellschaftlicher Missstand, Ereignis, Bedeutung und Aufgaben einer Organisation),* beschreiben einen Vorgang *(z. B. Experiment, Programmieren eines technischen Gerätes),*einen Gegenstand *(z. B. Telefon)* ein Tier oder eine Person, aber auch Bilder *(Gemälde, Foto)*in ihren funktionalen Zusammenhängen.
Schwerpunkt der unterrichtlichen Arbeit
4. Sie setzen sich argumentativ mit einem neuen Sachverhalt auseinander. *(z. B. in einem Leserbrief Stellung zu einem Sachverhalt nehmen; für die Schülerzeitung zu einem Problem oder einer kritischen Fragestellung eine Position vertreten bzw. eine Argumentation verfassen)*
5. Sie gestalten appellative Texte*(z.B. Werbung/Kommentar)* und verwenden dabei verschiedene Präsentationstechniken. *(z. B. Plakat, Folie, Bild-Text-Collage)*
6. Sie fassen literarische Texte, Sachtexte und Medientexte inhaltlich zusammen. *(Inhaltsangabe, Randbemerkungen)*
7. Sie entwickeln und beantworten Fragen zu Texten und deren Gestaltung. *(literarische Figuren charakterisieren; gelernte Fachbegriffe einsetzen; Textbelege angeben und korrekt zitieren)*
Schwerpunkt der unterrichtlichen Arbeit
8. Sie formulieren Aussagen zu diskontinuierlichen Texten in Ansätzen und werten die Texte in einem funktionalen Zusammenhang aus. *(z. B. Diagramme, Übersichten, Grafiken)*
9. Sie kennen und verwenden einfache standardisierte Textformen. *(z. B. Anträge, Anfragen, Anzeigen)*

Produktionsorientiertes Schreiben

10. Sie experimentieren mit Texten und Medien. *(z. B. Parallel-, Gegentexte, Umformung/Ergänzung und mediale Transformation; dabei das Zusammenwirken von Rezeption, Produktion und Darstellungsformen erkennen und Absicht und Wirkung der kreativen Bearbeitungen reflektieren)*
Schwerpunkt der unterrichtlichen Arbeit

3.3 Lesen – Umgang mit Texten und Medien

Lesetechniken und -strategien

1. Die Schülerinnen und Schüler verfügen über Strategien und Techniken des Textverstehens:
komplexe Texte sinnerfassend lesen
Verschiedene Informationen entnehmen und zueinander in Beziehung setzen

Wörter und Begriffe im Kontext klären
Aussagen erklären und konkretisieren, Stichwörter formulieren, Texte und Textabschnitte zusammenfassen
ein allgemeines Verständnis des Textes entwickeln
Schlussfolgerungen ziehen
Textaussagen mit eigenen Wissensbeständen in Beziehung setzen
Beziehungen zwischen Inhalt, Sprache und Form eines Textes herstellen
Textaussagen bewerten
2. Sie nutzen Bücher und Medien zur Informationsentnahme, ordnen die Informationen und halten sie fest. *(z. B. Zeitungen, Zeitschriften, Nachrichtensendungen, Nachschlagewerke, Suchmaschinen des Internets und das Internet)*

Umgang mit Sachtexten und Medien

3. Sie untersuchen und bewerten Sachtexte, Bilder und diskontinuierliche Texte im Hinblick auf Intention und Funktion *(z.B. Informationen eines Textes entnehmen und zusammenfassen; Informationsgehalt und Schlüssigkeit überprüfen; Merkmale argumentierender Texte kennen und berücksichtigen - Behauptung/Feststellung, Argument, Beleg/Beispiel etc.)*
4. Sie orientieren sich in Zeitungen. *(elementare Merkmale kennen z. B. Schlagzeile, Ressorts, Nachrichtentext; Textsorten und Textformen in Zeitungen und Zeitschriften unterscheiden, z. B. Bericht, Reportage, Kommentar, Werbung; mit ihnen experimentieren; Wirkungsweise und Inhalt ausgewählter Zeitungstexte beschreiben)*
Schwerpunkt der unterrichtlichen Arbeit
5. Sie untersuchen Texte audiovisueller Medien *(z. B. Werbespots einfache Hypertexte)* im Hinblick auf ihre Intention. Sie reflektieren und bewerten deren Inhalte, Gestaltungs-und Wirkungsweisen. *(z. B. Rollen- und Handlungsmuster, Lebensgefühl und Leitbilder in Werbespots, Realität und virtuelle Welten in Medien)*
Schwerpunkt der unterrichtlichen Arbeit

Umgang mit literarischen Texten

6. Sie unterscheiden spezifische Merkmale epischer, lyrischer und dialogischer Texteund setzen sich mit der Wirkungsweise auseinander. Sie verfügen über grundlegende Fachbegriffe. *(gemeinsame Merkmale von Texten als Merkmale einer literarischen Textsorte z. B. Balladen, Kurzprosa, erfassen; motivgleiche Texte, z.B. Gedichte, miteinander vergleichen, die historische Bedingtheit von Motivabwandlungen verstehen)*
7. Sie untersuchen altergemäße literarische Texte im Hinblick auf die Zusammenhänge zwischen Inhalt, Sprache und Form.*(Handlungsabläufe und Entwicklung von Figuren in umfangreicherenTexten wiedergeben; Texte gliedern und wichtige Textstellen sammeln; Handlungsmotive von Figuren erklären; produktive Möglichkeiten der Auseinandersetzung mit literarischen Figuren nutzen)*
Schwerpunkt der unterrichtlichen Arbeit
8. Sie verstehen längere epische Texte.
*(Erzählungen, Ganzschriften - vor allem Jugendbücher /Jugendromane),*indem sie Handlungsabläufe und die entwicklung von Figuren erfassen.
(Texte gliedern, wichtige Textstellen erkennen)
9. Sie untersuchen lyrische Formen *(Ballade, Erzählgedicht, themenverwandte Gedichte)*, erarbeiten deren Merkmale und Funktion.*(Motive miteinander vergleichen; den Deutungsspielraum der Texte kennen lernen)*
10. Sie untersuchen Dialoge in Texten im Hinblick auf die Konstellation der Figuren, deren Charaktere und Verhaltensweisen. *(z. B. altersgemäße Jugendstücke, Szenen und Dialoge, einfache Dramentexte; Inszenieren kurzer Szenen und Erproben der Wirkungsmöglichkeiten)*

Produktionsorientierter Umgang mit Texten und Medien

11. Sie verändern Texte unter Verwendung akustischer, optischer und szenischer Elemente *(z. B. eine Ballade als Hörspiel, ein klassisches Gedicht als Rap in moderner (Alltags-) Sprache)*. Sie präsentieren ihre Ergebnisse in medial geeigneter Form. *(z. B. Vortrag mit Instrumenten, CD, Plakat)*

3.4 Reflexion über Sprache

Sprache als Mittel der Verständigung

1. Die Schülerinnen und Schüler erkennen verschiedene Sprachebenen und Sprachfunktionen in gesprochenen und schriftlich verfassten Texten. *(Intentionen und Wirkungsweisen - Sprache und Stil - dieser Texte erkennen; öffentliche und private Kommunikationssituationen unterscheiden; Ursachen von Kommunikationsstörungen kennen und über Lösungswege nachdenken)*
2. Sie vergleichen und unterscheiden Ausdrucksweisen und Wirkungsabsichten von sprachlichen Äußerungen.*(Information, Regulierung, Appell, Selbstdarstellung)*

Sprachliche Formen und Strukturen in ihrer Funktion

3. Sie kennen die verschiedenen Wortarten und gebrauchen sie funktional. *(Artikel, Nomen, Verb, Adjektiv, Pronomen, Adverb, Konjunktion, Präposition)*
4. Sie kennen weitere Formen der Verbflexion, bilden die Formen weitgehend korrekt und können ihren funktionalen Wert erkennen und deuten. *(Aktiv/Passiv, Modi)*
5. Sie unterscheiden Satzglieder, Gliedsätze und Satzverbindungen. Sie bilden komplexe Satzgefüge. *(Attribut, Subjektsatz, Objektsatz, Adverbialsatz, Attributsatz)*
6. Sie gewinnen Sicherheit in der Erschließung und treffenden Anwendung von Wortbedeutungen *(Gliederungsmöglichkeiten des Wortschatzes nach Schlüsselwörtern, Oberbegriff/Unterbegriff; Umgangssprache).* Sie verstehen Formen metaphorischen Sprachgebrauchs. *(z. B. in Redewendungen).*
7. Sie wenden operationale Verfahren zur Ermittlung der Satz- und Textstruktur zunehmend selbstständig an.
(Passivprobe, Textreduktion, Texterweiterung, Texte gliedern, Sätze verknüpfen)

Sprachvarianten und Sprachwandel

8. Sie unterscheiden Sprachvarianten. *(Standard-, Umgangs-, Jugendsprache, in Ansätzen auch Fachsprachen)*
9./10. Sie erkennen Zusammenhänge zwischen Sprachen und nutzen ihre Kenntnisse für das Erlernen fremder Sprachen.

Richtig Schreiben - Laut- /Buchstabenebene

11. Sie wenden ihr Wissen über lautbezogene Regelungen weitgehend sicher an, auch in schwierigen Fällen.

Richtig Schreiben - Wortebenen

12. Sie verfügen über weitere wortbezogene Regelungen. *(häufig gebrauchte Fach- und Fremdwörter, Getrenntschreibung als Regelschreibung)*

Richtig Schreiben - Satzebenen

13. Sie kennen und beachten satzbezogene Regelungen. *(Kennzeichen für die Großschreibung von Verben und Adjektiven, Zeitangaben, "dass" als Konjunktion, Zeichensetzung in Satzgefügen und Satzreihen)*

Richtig Schreiben - Lösungsstrategien

14. Sie kontrollieren Schreibungen mithilfe
des Nachschlagens im Wörterbuch
der Benutzung von Textverarbeitungsprogrammen
von Fehleranalyse
sie berichtigen nach individuellen Fehlerschwerpunkten

Kompetenzerwartungen am Ende der Jahrgangsstufe 10

3.1 Sprechen und Zuhören

Sprechen

1. Die Schülerinnen und Schüler verfügen über kommunikative Sicherheit.
2. Sie setzen erzählerische Formen als Darstellungsmittel bewusst ein. *(z. B. Argumentationen veranschaulichen; eigene und fremde Erlebnisse und Erfahrungen darstellen - Metaphern, Vergleiche, schildernde Passsagen)*
3. Sie berichten über Ereignisse unter Einbeziehung eigener Bewertungen und beschreiben komplexe Vorgänge in ihren Zusammenhängen.
4. Sie erarbeiten Referate zu begrenzten Themen und tragen diese weitgehend frei vor *(ggf. mithilfe eines Stichwortzettels/einer Gliederung)*. Sie unterstützen ihren Vortrag durch Präsentationstechniken und Begleitmedien, die der Intention angemessen sind. *(z. B. Tafel, Folie, Plakat, Moderationskarten)*
Schwerpunkt der unterrichtlichen Arbeit
5. Sie äußern Empfindungen und Gedanken unter Beachtung der Formen gesellschaftlichen Umgangs.
6. Sie wägen in strittigen Auseinandersetzungen Argumente sachlich ab, entwickeln den eigenen Standpunkt sprachlich differenziert unter Beachtung von Argumentationsregeln.

Gespräche führen

7. Sie beteiligen sich mit differenzierten Beiträgen an Gesprächen. Sie leiten, moderieren und beobachten Gespräche. *(z. B. einen Dialog, ein Streitgespräch, eine Debatte, ein Rundgespräch, eine Pro- und Contra-Diskussion strukturieren, in dem Gespräch nachfragen, Denkanstöße geben, zielorientiert zusammenfassen)*
8.Sie verfügen in Auseinandersetzungen über eine sachbezogeneArgumentationsweise, respektieren fremde Positionen und erarbeiten Kompromisse; sie bewerten Gesprächs- und Argumentationsstrategien. *(eigene und fremde Gespräche strukturell untersuchen - z. B . kriterienorientiert das eigene Gesprächsverhalten und das anderer beobachten, reflektieren und bewerten; Personen-/ Figurenkonstellation untersuchen; Formen der Eröffnung und des Verlaufes reflektieren; die Leistung des Gesprächsleiters bewerten; das Verhältnis von Information, Argumentation und Appell bzw. Aussage, Argument, Beispiel und Verallgemeinerung kennzeichnen; den Abschluss von Gesprächen kennzeichnen - offener Gesprächsstand, Widerstreit, Kompromiss)*
Schwerpunkt der unterrichtlichen Arbeit

Zuhören

9. Sie verfolgen konzentriert längere Redebeiträge und mündliche Darstellungen und setzen sich kritisch mit ihnen auseinander.
10. Sie sichern umfangreiche gesprochene Texte, mithilfe geeigneter Schreibformen. *(z.B. Mitschrift, Protokoll, Mindmap)*

Gestaltend sprechen / szenisch spielen

11./12. Sie setzen sprechgestaltende Mittel in unterschiedlichen Situationen bewusst ein. *(z. B. Textinterpretation in Rollenspielen)*
13. Sie interpretieren literarische Texte mithilfe szenischen Spiels. *(z. B. Darstellung derselben Szene in unterschiedlicher Grundhaltung, emotionaler Färbung, um verschiedene Deutungsmöglichkeiten zu finden)*

3.2 Schreiben

Schreiben als Prozess

1. Die Schülerinnen und Schüler beherrschen Verfahren prozesshaften Schreibens. *(einen Schreibplan erstellen, Fragen und Arbeitshypothesen formulieren, Texte ziel-, adressaten- und situationsbezogen, ggf. materialorientiert konzipieren; Stoffsammlung erstellen, ordnen und eine Gliederung anfertigen; strukturiert, verständlich, sprachlich variabel und stilistisch stimmig zur Aussage schreiben; sprachliche Mittel einsetzen; Zitate in Texte integrieren; Aufbau, Inhalt undFormulierungen hinsichtlich der Aufgabenstellung überprüfen; Texte inhaltlich und sprachlich überarbeiten; Strategien der Überprüfung der sprachlichen Richtigkeit und Rechtschreibung anwenden; über die notwendige fachspezifische Begrifflichkeit verfügen; in gut lesbarer handschriftlicher Form und in einem der Situation entsprechenden Tempo schreiben; mit Textverarbeitungsprogrammen umgehen; Schreibkonferenzen/Schreibwerkstatt durchführen;)*

Texte schreiben

2. Sie verwenden beim Schreiben eigener Texte gestalterische Mittel des Erzählens planvoll und differenziert. *(z. B. Mittel der Übertreibung in einer Satire für die Schülerzeitung oder in einer Parodie; Fallbeispiel im Rahmen eines Referates)*
3. Sie informieren über komplexe Sachverhalte, über Gesprächsergebnisse und Arbeitsabläufe *(mithilfe von: Exzerpt, Mitschrift, Protokoll)* und beschreiben vom eigenen oder fremden Standpunkt aus *(z. B. Personen, Sachverhalte, Gegenstände)*. Sie erklären Sachverhalte unter Benutzung von Materialien und Beobachtungen an Texten. *(z. B. Vorgänge in Zusammenhängen, abstrakte Begriffe, Hintergründe zum Verständnis von Texten)*
4. Sie verfassen argumentative Texte. *(Thesen entwickeln, Argumente sammeln, nach Gewichtigkeit ordnen; korrekt zitiert belegen, Argumente durch Beispiele veranschaulichen, Schlussfolgerungen ziehen; den Argumentationsgang einer Vorlage zusammenfassen; für eine eigene Auffassung argumentieren, Argumente überlegt anordnen; Gegenargumente zurückweisen - z. B. in einem Leserbrief)*
Schwerpunkt der unterrichtlichen Arbeit
5. Sie nutzen Formen appellativen Schreibens bewusst und situationsangemessen. *(z. B. in Anlehnung an Vorlagen werbende Texte verfassen - für die Lektüre eines Buches, für den Besuch einer Theaterveranstaltung)*
6. Sie fassen komplexe Texte strukturiert zusammen. *(mithilfe von Stichwörtern, Symbolen, Farbmarkierungen, Unterstreichungen; Inhalte veranschaulichen: z. B. durch Mindmap, Flussdiagramm)*
7. Sie verfassen Analysen zu Texten und Textauszügen *(literarische Texte, Sachtexte und medial vermittelte Texte)* unter Berücksichtigung formaler und sprachlicher Besonderheiten. *(Inhalte auch längerer und komplexerer Texte verkürzt und abstrahierend wiedergeben; Informationen aus linearen und nicht-linearen Texten zusammenfassen und so wiedergeben, dass insgesamt eine kohärente Darstellung entsteht; formale und sprachlich-stilistische Gestaltungsmittel und ihre Wirkungsweise an Beispielen darstellen; Textdeutungen begründen; sprachliche Bilder deuten; Thesen formulieren; Argumente zu einer Argumentationskette verknüpfen; Gegenargumente formulieren, überdenken und einbeziehen; Argumente gewichten und*

Schlüsse ziehen; begründet Stellung nehmen)
Schwerpunkt der unterrichtlichen Arbeit
8. Sie setzen diskontinuierliche Texte funktional ein. *(z. B. Grafiken, Schaubilder in Referaten)*.
9. Sie kennen, verwenden und verfassen Texte in standardisierten Formaten. *(z. B. Praktikumsbericht, Lebenslauf, Bewerbungsschreiben, Geschäftsbrief, Protokoll - auch unter Nutzung diskontinuierlicherTexte wie Diagramme, Übersichten u. Ä.)*
Schwerpunkt der unterrichtlichen Arbeit

Produktionsorientiertes Schreiben

10. Sie verfassen in Anlehnung an literarische Vorlagen umfangreichere eigene Texte *(z. B. Rollenbiografie)* und nutzen die Umgestaltung von Texten als Mittel zu einem vertieften Verständnis thematischer Zusammenhänge.
Schwerpunkt der unterrichtlichen Arbeit.

3.3 Lesen – Umgang mit Texten und Medien

Lesetechniken und -strategien

1. Die Schülerinnen und Schüler verfügen über erweiterte Strategien und Techniken des Textverstehens:
überfliegend, selektiv, kursorisch, navigierend (z. B. Bild-Ton-Text integrierend) lesen
genaues Erfassen der Informationen komplexerer Texte
Erschließen schwieriger Textpassagen / Begriffe
Fragen und Arbeitshypothesen formulieren
Erstellen von Exzerpten und Übersichten
Formulierung von Hypothesen unter Einbeziehung eigener Wissensbestände
Entwicklung einer textbezogenen Interpretation
Nachdenken über Inhalt, Sprache und Form eines Textes
2. Sie nutzen selbstständig Bücher und Medien zur Recherche und berücksichtigen zunehmend fachübergreifende Aspekte. (z. B. Fachbücher, Rundfunk- und Fernsehangebote, Bibliotheken, Suchmaschinen des Internets und das Internet)

Umgang mit Sachtexten und Medien

3. Sie verstehen Sachtexte. (vor allem argumentative Texte, diskontinuierliche Texte und Bilder). Sie erkennen das Thema, den Argumentationsgang, die Stilmittel erkennen, erschließen die Aussageabsicht und beziehen Stellung zu den Aussagen.Zusammenhang zwischen Intention, Textmerkmalen, Lesererwartungen und Wirkung herstellen; Realitätsbezug untersuchen; Unterschied zwischen Information und Wertung erkennen; persönliche Schlussfolgerungen ziehen)
Schwerpunkt der unterrichtlichen Arbeit
4/5. Sie untersuchen Informationsvermittlung,Wirklichkeitsdarstellung und Meinungsbildung in Texten der Massenmedien. (vor allem zu jugendspezifischen Themen in regionalen bzw. überregionalen Zeitungen und Fernsehsendungen), berücksichtigen dabei auch medienkritische Positionen. Sie verfügen über die notwendige Fachterminologie und über Methoden zur Untersuchung medial vermittelter Texte. (Informationen zu einem Thema/Problem in unterschiedlichen Medien suchen, vergleichen, auswählen und bewerten; Interviews auf Fragetechnik und Antwortstrategien untersuchen, Steuerungsmöglichkeiten in Interviews, Talk-Shows o. Ä. darlegen; medienspezifische Formen kennen, z. B. Print- und Online-Zeitungen, Infotainment, Hypertexte, Werbekommunikation, Film)
Schwerpunkt der unterrichtlichen Arbeit

Umgang mit literarischen Texten

6. Sie verstehen komplexere, altersstufengemäße epische, lyrische und dramatische Texte, schätzen deren Wirkungsweisen ein. (zentrale Inhalte erschließen; Struktur von Handlung, Ort und Zeit mithilfe von Kompositionsskizze oder Inhaltsangabe erfassen; Figurenkonstellation und Handlungsmotive der Figuren, den zentralen Konflikt herausarbeiten; Zusammenhang zwischen Text, Entstehungszeit und Lebensumständen des Autors/derAutorin untersuchen; über die notwendigen Fachbegriffe verfügen)
7. Sie erschließen literarische Texte mit Verfahren der Textanalyse und -interpretation auch unter Einbeziehung historischer und gesellschaftlicher Fragestellungen. (Textinhalt - Handlung, Handlungszusammenhang - wiedergeben; Figuren-, Raum-, Zeitdarstellung, spezifische Formen und Merkmale untersuchen und ihre Funktion bestimmen; ansatzweise epochentypische Themen und Gestaltungsmittel berücksichtigen - Wort-, Satz-, Gedankenfiguren, Bildsprache (Metapher))
Schwerpunkt der unterrichtlichen Arbeit
8. Sie verstehen epische Texte. (Erzähltexte und Ganzschriften, auch medial vermittelt). Sie erfassen deren Inhalt, Struktur und Figurenkonstellation.die Handlung - z. B. in einer Inhaltsangabe - erfassen; Besonderheiten der Textsorte erkennen; die handelnden Personen charakterisieren; Gestaltungsmittel in ihrer Funktion beschreiben - z. B. Erzähler, Erzählperspektive etc.; sich mit den Texten auseinandersetzen, indem das Gelesene auf Kontexte (z. B. eigenes Vorwissen) bezogen wird; über Methoden zur Untersuchung medial vermittelter Erzähltexte verfügen -Film, Literaturverfilmung)
Schwerpunkt der unterrichtlichen Arbeit
9. Sie erschließen auf der Grundlage eingeführten fachlichen und methodischen Wissens lyrische Texte und stellen ihre Ergebnisse in Form eines zusammenhängenden und strukturierten, deutenden Textes dar. (z. B. durch den Vortrag auswendig gelernter Gedichte, durch gestaltendes Lesen eine Sensibilisierung für Auffälligkeiten im Texterreichen; Deutungshypothesen formulieren und am Text überprüfen; lyrische Texte auf ihren Entstehungskontext beziehen; themenverwandte Gedichte vergleichen; eine Autorin/einen Autor über eine Auswahl von Gedichten kennen lernen; eine persönliche Lyrikanthologie zusammenstellen und die Auswahl im Vorwort begründen)<br< schwerpunkt="" der="" unterrichtlichen="" arbeit<="" em=""></br<>
10. Sie verstehen und erschließen dramatische Texte (auch Auszüge und Teile eines Drehbuchs) unter Berücksichtigung struktureller, sprachlicher und inhaltlicher Merkmale. (z. B. Merkmale des Dramas erarbeiten; Figurenzeichnung und Konfliktbehandlung im Drama untersuchen; durch produktive Ausarbeitung eine Rolle im Drama untersuchen; Konfliktbewältigungen nachzeichnen oder alternativ entwickeln; Vorschläge zur Inszenierung einer Dramenszene machen, Teile eines Drehbuchs entwerfen und evtl. im eigenen Spiel erproben; Inszenierung eines Dramas nach einem Theaterbesuch mit der Vorlage vergleichen)
Schwerpunkt der unterrichtlichen Arbeit

Produktionsorientierter Umgang mit Texten und Medien

11. Sie arbeiten gestaltend mit Texten. (z. B. Bild-Text-Ton-Verbindungen u. Ä.; diese medial vermittelten Texte präsentieren; Perspektivenwechsel gestalten: innerer Monolog, Brief in der Rolle einer literarischen Figur; szenische Umsetzung, Paralleltext verfassen, Textauszug weiterschreiben, in eine andere Textsorte umschreiben)

3.4 Reflexion über Sprache

Sprache als Mittel der Verständigung

1. Die Schülerinnen und Schüler kennen verbale und nonverbale Strategien der Kommunikation, und setzen diese gezielt ein (z. B.Bewerbungsgespräch) und reflektieren ihre Wirkung.
2. Sie unterscheiden und reflektieren bei Sprachhandlungen Inhalts- und Beziehungsebenen und stellen ihre Sprachhandlungen darauf ein. (gelingende und misslingende Kommunikation; öffentliche bzw. private Kommunikationssituationen)

Sprachliche Formen und Strukturen in ihrer Funktion

3. Sie nutzen ihre Kenntnisse über Funktion und Bedeutung von Wörtern für die Untersuchung von Texten und das Schreiben eigener Texte. (z. B. stilistische Varianten unterscheiden und ausprobieren, Fachvokabular bei der Sprachanalyse korrekt verwenden)
4. Sie verfügen sicher über die Formen der Verbflexion; sie nutzen sie für die Untersuchung von Texten und das Schreiben eigener Texte. (z. B. stilistische Varianten unterscheiden und ausprobieren, Fachvokabular bei der Sprachanalyse korrekt verwenden)
5. Sie festigen, differenzieren und erweitern ihre Kenntnisse im Bereich der Syntax und nutzen sie zur Analyse und zum Schreiben von Texten. (z. B. Wirkungen von Satzbau-Varianten, Gliedsatz-Varianten unterscheiden und ausprobieren)
6. Sie unterscheiden sicher zwischen begrifflichem und bildlichem Sprachgebrauch. (ausgewählte rhetorische Mittel kennen)
7. Sie beherrschen sprachliche Verfahren und können diese beschreiben. (z. B. Textwiedergabe; Gedanken in argumentierenden Texten verknüpfen; gedankliche Struktur eines Textes herausarbeiten)

Sprachvarianten und Sprachwandel

8. Sie reflektieren Sprachvarianten. (z. B. Standard-, Fach-, Umgangs-, Jugendsprache, Dialekte)und verfügen über vertiefte Kenntnisse in Bezug auf Gebrauch, Bedeutung und Wandel von Wörtern und Formulierungen. (z. B. sprachliche Trends, political correctness)
9./10. Sie kennen die kulturelle Bedingtheit von Sprache und den Einfluss fremder Sprachen auf die deutsche. (z. B. Anglizismen)

Richtig Schreiben - Laut- /Buchstabenebene

11. Sie beherrschen im Wesentlichen die lautbezogenen Regelungen.

Richtig Schreiben - Wortebene

12. Sie schreiben im Bereich wortbezogener Regelungen weitgehend sicher. (vor allem: Fach- und Fremdwörter, Zusammen- und Getrenntschreibung)

Richtig Schreiben - Satzebene

13. Sie verfügen über weitere satzbezogene Regelungen. (vor allem: Besonderheiten der Groß- und Kleinschreibung, Regeln der Zeichensetzung bei Zitaten, Zeichensetzung im Satzgefüge)

Richtig Schreiben - Lösungsstrategien

14. Sie korrigieren und vermeiden Fehler mithilfe
des Regelteils eines Wörterbuchs
von Computerprogrammen

selbstständiger Fehleranalyse

3.5 Differenzierung der Anforderung zwischen Grundkursen und Erweiterungskursen

Spätestens mit der Jahrgangsstufe 9 setzt im Deutschunterricht in der Gesamtschule eine äußere Fachleistungsdifferenzierung in Grund- und Erweiterungskurse ein. Die für die Doppeljahrgangsstufe 9/10 und für das Ende der Sekundarstufe I ausgewiesenen Anforderungen gelten sowohl für die Erweiterungskurse als auch für die Grundkurse. Die sich mit dem Beginn der Jahrgangsstufe 9 immer deutlicher ausprägende Abschlussorientierung darf in den Grundkursen nicht dazu führen, dass keine Auseinandersetzung mit komplexeren Anforderungen mehr stattfindet. Grundkurse und Erweiterungskurse unterscheiden sich in den Anforderungen im Wesentlichen darin, wie und in welchem Grade die angestrebten Befähigungen konkretisiert und entfaltet werden können. Die Differenzierung der Anforderungen zwischen beiden Kursarten kann sich insbesondere an folgenden Kriterien orientieren:

Breite und Komplexität des Lernangebots: Das Lernangebot (Themen und Materialien) im Grundkurs kann im Umfang und in der Komplexität begrenzter sein, um mehr Zeit für die Erarbeitung und für die Sicherung und Einübung des Erarbeiteten zur Verfügung zu haben.

Grad des vertiefenden Arbeitens: Die Arbeit im Erweiterungskurs wird in der Regel zügiger erfolgen; damit kann Zeit für vertiefendes Durchdringen der Themen gewonnen werden.

Grad des selbstständigen Arbeitens: Das Lernen im Grundkurs kann unter dem Aspekt intensiverer Lernförderung stärker die Begleitung und Beratung durch die Lehrerin oder den Lehrer erforderlich machen. Im Erweiterungskurs schließt das selbstständige Lernen in stärkerem Maße die eigenständige Lernplanung, Auswahl angemessener Techniken und Strategien und Reflexion des Lernweges und -ergebnisses ein.

Grad der Beherrschung von Arbeitstechniken und fachlichen Methoden: Das in höherem Maße selbstständige Lernen im Erweiterungskurs wird getragen durch die differenziertere und sicherere Anwendung methodischer Verfahren und deren Reflexion, insbesondere im Bereich der Textanalyse und der Entwicklung von Schreibkompetenz.

Differenziertheit der Fachkenntnisse

Grad der Beherrschung der deutschen Sprache in Wort und Schrift

Year 7 German

Unit 1: Ich stelle mich vor

New language content:

- introduction to asking and answering questions
- classroom instructions (receptive only)
- simple classroom expressions
- numbers 1-50 (cardinals and ordinals)
- dates
- introduction to verbs in first/second person singular
- introduction to spelling/pronunciation rules, *eg Umlaut, ß*, use of capitals
- *das ist* and classroom objects
- gender
- indefinite and definite articles (nominative)

New contexts:

- meeting and greeting people
- introductions
- personal information
- classroom objects
- classroom instructions

Unit 2: Freunde und Familie

New language content:

- *haben* (first, second, third person singular) + accusative
- *kein*
- introduction to plural nouns
- *sein* (first, second, third person singular)
- descriptions
- modifiers (*sehr, ziemlich*)
- *der/die/das > er/sie/es*
- singular forms of verbs (first, second, third person)
- simple connectives (*und, aber*)
- the alphabet
- *mein(e)/dein(e)*

New contexts:

- family, friends and pets
- describing others
- asking for simple personal information

Alternative contexts: home, personal possessions, school, clothes.

Unit 3: Der Schultag

New language content:

- time
- numbers 32-60
- days of the week
- likes, dislikes and other opinions (*gern, lieber, nicht, Lieblings-,* etc)
- verb paradigm
- introduction to verb as 'second idea'
- plural forms of *haben* and *sein*

New contexts:

- school subjects
- school timetable
- school life in England and Germany

Alternative contexts: describing others, rooms in the house, leisure activities.

Unit 4: Zu Hause

New language content:

- *es gibt* + accusative
- more on verb as second idea
- numbers 61-200
- third person possessives (*sein, ihr*)
- prepositions with dative
- introduction to separable verbs
- introduction to strong verbs
- correct use of *du/Sie*

New contexts:

- where you live
- rooms
- furniture
- simple routine activities
- home life in Germany

Alternative contexts: places in a town.

Unit 5: Freizeit

New language content:

- frequency
- negatives with *nicht*
- adverbs
- introduction to prepositions + accusative (with *gehen*)
- introduction to infinitives with *können*
- introduction to *man*

New contexts:

- leisure
- family activities

- hobbies
- sport
- opportunities for developing independent strategies for learning about own hobbies, etc

Alternative contexts: transport

Unit 6: Der Alltag
New language content: • reflexives (*mich, dich, sich*) • word order with adverbs • infinitive after *müssen* **New contexts:** • daily routine • transport • informal letter writing • opportunities for developing independent reading Alternative contexts: holiday/ weekend routine

Year 8 German

Unit 7: Städte und Länder

New language content:

- countries and languages
- introduction to simple adjectival agreement (nominative and accusative)
- prepositions with accusative
- imperative
- more on prepositions with accusative or dative

New contexts:

- the geography of Germany
- compass points
- places in a town
- directions

Alternative contexts: weather, holidays, visits abroad

Unit 8: Essen und Feiertage

New language content:

- *mögen*
- introduction to subordinate clauses with *weil*
- *für* + accusative
- concept of future with present tense

New contexts:

- food and drink
- festivals and special occasions
- presents and shopping

Alternative contexts: eating out.

Unit 9: Wir sind auf Besuch gekommen

New language content:

- perfect tense (common strong and weak verbs with *haben*)
- past time phrases

New contexts:

- invitations and replies
- being and welcoming a guest

Alternative contexts: holidays, daily routine.

Unit 10: Gesundes Leben
New language content: • infinitive after *sollen* • further work on the perfect tense (more strong and weak verbs plus verbs with *sein*) • contrast present and perfect tenses New contexts: • lifestyles (healthy eating, etc) Alternative contexts: the environment.

Unit 11: Mode
New language content: • comparatives of adjectives • demonstratives *(welcher, dieser)* • modifiers (including *zu*) • introduction to imperfect (*sein* and *haben* only) • compound nouns New contexts: • clothes and fashion • trends Alternative contexts: travel and transport, holidays.

Unit 12: Österreich und die Schweiz
New language content: ▪ specific new language may arise in listening and reading activities New contexts: ▪ focus on a country other than Germany Alternative contexts: many of the contexts covered in units 1-11.

Year 9 German

Unit 13: Umwelt

New language content:

- future tense
- contrast three tenses (present, past, future)
- negatives other than *nicht*

New contexts:

- weather
- the environment
- green issues in Germany, Switzerland or Austria

Alternative contexts: local area, holidays, healthy living.

Unit 14: Ich und andere Leute

New language content:

- more subordinating conjunctions
- pronouns (accusative and dative)

New contexts:

- relationships with others
- socialising
- dealing with problems

Alternative contexts: fashion, the environment, the world of work.

Unit 15: Geld

New language content:

- *um … zu*
- more on questions

New contexts:

- pocket money
- jobs and part-time jobs
- personal qualities
- the world of work

Alternative contexts: shopping, everyday activities.

Unit 16: Eine Geschichte

New language content:

- time/manner/place
- plural possessives (*unser, ihr*)
- clauses with *als*
- simple reasons for points of view

New contexts:

- the context provided by a story, magazine, poem, advert, or video clip.

Unit 17: Partnerstadt/ Ferien

New language content:

- superlative adjectives
- more on adjectival agreement (dative)
- formal letter writing

New contexts:

- advertisements
- brochures
- school exchanges
- accommodation
- holidays

Alternative contexts: fashion, transport, other people.

Unit 18: Wir fassen alles zusammen

New language content:

- new language may arise in authentic listening and reading materials

New contexts:

- opportunities to apply known language to a range of contexts in a variety of media.

Years 10 and 11 IGCSE German as a Foreign Language

(Cambridge IGCSE Syllabus 0525)

Topic Area A – Everyday activities

A1: Home life

Objectives

- to describe their home
- to understand rooms in the house and what people do in different rooms
- to understand and exchange information about their daily routine.

Vocabulary

- numbers
- time
- days and months
- seasons
- colours
- question words
- housing, rooms
- verbs for daily routine
- likes/dislikes
- expressions of obligation

Grammar

Present tense of regular and irregular verbs; *haben*, *sein, werden*, modal verbs + infinitive; perfect tense; imperfect tense (higher levels only) *ich möchte/hätte gern* + infinitive; position of infinitive/past participle; word order; future tense.
Negatives; commands; asking questions.
Genders; singular and plural forms; cases with definitive and indefinite articles; adjective endings; possessive adjectives; comparisons.
Personal pronouns; reflexive pronouns; indefinite pronouns; interrogative pronouns.
Numbers, including ordinal numbers; date and time.
Prepositions and cases; nominative, accusative, dative (and genitive) cases.
Conjunctions and simple subordinating conjunctions.

A2: School routine

Objectives

- to understand and give information about school, including their routine at school, subjects studied, likes and dislikes, rules and regulations, and the pressures of school

Vocabulary

- numbers
- time
- days and months
- colours
- question words
- verbs for daily school routine
- school types and subjects
- school life
- school subjects

- likes/dislikes
- expressions of obligation
- school commands
- food and drink
- items of clothing (for uniform)

Grammar
Present tense of regular and irregular verbs; *haben*, *sein, werden*, modal verbs + infinitive; perfect tense of regular and irregular verbs; *ich möchte/hätte gern* + infinitive; position of infinitive/past participle; word order; future tense; present tense after *seit*; negatives; commands; asking questions.
Genders; singular and plural forms; cases with definitive and indefinite articles; adjective endings; possessive adjectives; quantifiers; comparisons.
Personal pronouns; reflexive pronouns; indefinite pronouns; interrogative pronouns; impersonal pronouns.
Numbers, including ordinal numbers; date and time.
Prepositions and cases; nominative, accusative, dative (and genitive) cases.
Conjunctions and simple subordinating conjunctions.

A3 Eating and drinking
Objectives
- to understand and use the language necessary to talk about food and drink, including food from different parts of the world

Vocabulary
- food and drink
- shops
- weights and measures
- expressions of wanting/not wanting
- numbers and money (including pocket money and money earned)
- ordering food and drink

Grammar
Present tense of regular and irregular verbs; modal verbs + infinitive; perfect tense of regular and irregular verbs; *ich möchte/ hätte gern* + infinitive; position of infinitive/past participle; word order; future tense; conditional tense.
Negatives; commands; asking questions.
Genders; singular and plural forms (including irregulars); cases with definitive and indefinite articles (including negative form); adjective endings; possessive adjectives; quantifiers; comparisons.
Personal pronouns; indefinite pronouns; interrogative pronouns; impersonal pronouns; demonstrative pronouns; relative pronouns.
Numbers, including ordinal numbers; weights and measures.
Prepositions and cases; nominative, accusative, dative and genitive cases.
Conjunctions; simple subordinating conjunctions; word order in subordinating clauses.

A4 Health and fitness
Objectives
- to understand and give information about health and health issues, and discuss the importance of a healthy lifestyle

Vocabulary
- parts of the body
- common illnesses and ailments
- lifestyle issues (smoking, drugs, drinking, malnutrition, obesity)
- making appointments

Grammar
Present tense of regular and irregular verbs; modal verbs + infinitive; perfect tense of regular and irregular verbs; *ich möchte/ hätte gern* + infinitive; position of infinitive/past participle; word order; future tense; conditional tense with *ich würde*, etc. + infinitive; imperfect tense (*haben, sein*); pluperfect tense; present tense after *seit*.
Negatives; commands; asking questions.
Genders; singular and plural forms (including irregulars); cases with definitive and indefinite articles (including negative form); adjective endings; possessive adjectives; quantifiers, adverbs of frequency.
Personal pronouns; indefinite pronouns; interrogative pronouns; impersonal pronouns; demonstrative pronouns; relative pronouns.
Prepositions and cases; nominative, accusative, dative and genitive cases.
Conjunctions; simple subordinating conjunctions; word order in subordinating clauses

Topic Area B – Personal and social life

B1 Self, family, pets, personal relationships
Objective
- to understand and exchange information about themselves, their families and friends (including household pets)

Vocabulary
- family members
- friends and friendship
- pets; colours
- appearance
- personal characteristics
- countries and nationalities
- months and dates
- the alphabet

Grammar
Present tense of regular and irregular verbs; *haben*, *sein, werden*; modal verbs + infinitive; perfect tense; position of infinitive/past participle; word order; future tense.
Negatives; commands; asking questions.
Genders; singular and plural forms; cases with definitive and indefinite articles; adjective endings; possessive adjectives.
Personal pronouns; reflexive pronouns; indefinite pronouns; interrogative pronouns.
Numbers, including ordinal numbers; date and time.
Prepositions and cases; nominative, accusative, dative (and genitive) cases.
Conjunctions and simple subordinating conjunctions.

B2 Home and house
Objective
- to understand and give information about people's homes and rooms, and they will be able to discuss household tasks

Vocabulary
- houses
- rooms
- furniture and fittings
- kitchen utensils
- household tasks

Grammar
Present tense of regular and irregular verbs; modal verbs + infinitive; perfect tense; position of infinitive/past participle; word order; future tense.
Negatives; asking questions.
Genders; singular and plural forms; cases with definitive and indefinite articles; adjective endings; possessive adjectives; comparisons.
Personal pronouns; reflexive pronouns; indefinite pronouns; impersonal pronouns.
Numbers.
Prepositions and cases; nominative, accusative, dative (and genitive) cases.
Conjunctions and simple subordinating conjunctions.

B3 Leisure, entertainments, invitations
Objective
- to understand and give information about leisure and entertainment and to exchange and justify opinions about them
- to accept and refuse invitation to go out
- to give excuses

Vocabulary
- family members
- friends and friendship
- hobby and leisure activities
- sports
- musical instruments
- entertainment
- making suggestions and excuses
- accepting and refusing invitations
- time expressions

Grammar
Present tense of regular and irregular verbs; *haben*, *sein, werden, lesen, fahren, sehen;* separable verbs; modal verbs + infinitive; perfect tense; imperfect tense (higher levels only); *ich möchte/hätte gern* + infinitive; position of infinitive/past participle; word order; future tense; conditional tense; impersonal verbs; subjunctive.
Negatives; commands; asking questions.
Genders; singular and plural forms; cases with definitive and indefinite articles; adjective endings; possessive adjectives; comparatives and superlatives (adjectives and adverbs); adverbs of frequency.
Personal pronouns; reflexive pronouns; indefinite pronouns; interrogative pronouns.
Numbers, including ordinal numbers; date and time; time expressions.
Prepositions and cases; nominative, accusative, dative (and genitive) cases.
Conjunctions and simple subordinating conjunctions.

B4 Eating out
Objective
- to understand and give information about eating out and respond to questions about their food requirements

Vocabulary
- Family members
- friends
- making suggestions and excuses
- accepting and refusing
- restaurants and cafes
- including meals
- menus and possible problems

Grammar
Present tense of regular and irregular verbs; *haben*, *sein, werden*, modal verbs + infinitive; perfect tense; *ich möchte/hätte gern* + infinitive; position of infinitive/past participle; word order.
Negatives; commands; asking questions.
Genders; singular and plural forms; cases with definitive and indefinite articles; adjective endings; possessive adjectives; comparisons.
Personal pronouns; interrogative pronouns.
Numbers, quantities; prices.
Prepositions and cases; nominative, accusative, dative (and genitive) cases.

B5 Festivals and special occasions
Objective
- to understand and exchange information about festivals and special occasions
- to gain some understanding of significant festivals in German-speaking countries

Vocabulary
- family members
- friends and friendship
- festivals and special occasions
- accepting and refusing invitations

Grammar
Present tense of regular and irregular verbs; *haben*, *sein, werden*, modal verbs + infinitive; perfect tense; imperfect tense (higher levels only) *ich möchte/hätte gern* + infinitive; position of infinitive/past participle; word order; separable and inseparable verbs; future tense; passive tense (receptive use).
Negatives; asking questions.
Genders; singular and plural forms; cases with definitive and indefinite articles; adjective endings; possessive adjectives; comparisons.
Personal pronouns; reflexive pronouns; indefinite pronouns; relative pronouns.
Numbers, including ordinal numbers; date and time; adverbs of frequency.
Prepositions and cases; nominative, accusative, dative (and genitive) cases.
Conjunctions and simple subordinating conjunctions.

B6 Holidays; Getting around
Objective
- to understand and exchange information about different types of holidays and discuss appropriate means of transport

Vocabulary
- holidays
- countries and nationalities
- transport
- weather

Grammar
Present tense of regular and irregular verbs; *haben*, *sein, werden*; perfect tense (with *haben* and *sein)*; imperfect tense (higher levels only) *ich möchte/hätte gern* + infinitive; position of infinitive/past participle; word order; Inseparable verbs; future tense; conditional tense.
Negatives; asking questions.
Genders; singular and plural forms; cases with definitive and indefinite articles; adjective endings; possessive adjectives; comparisons.
Personal pronouns; reflexive pronouns; indefinite pronouns; demonstrative pronouns; interrogative pronouns.

Numbers, including ordinal numbers; date and time; expressions of time.
Prepositions and cases; nominative, accusative, dative (and genitive) cases.
Conjunctions and simple subordinating conjunctions; *wenn* clauses; letter formats.

B7 Accommodation

Objective

- to understand, seek and give information about holiday accommodation
- to respond to questions about accommodation requirements

Vocabulary

travel
transport
holiday accommodation
dates

Grammar

Present tense of regular and irregular verbs; *haben*, *sein, werden*, modal verbs + infinitive; perfect tense; *ich möchte/ hätte gern* + infinitive; position of infinitive/past participle; word order; future tense.
Negatives; asking questions.
Genders; singular and plural forms; cases with definitive and indefinite articles; adjective endings; possessive adjectives.
Personal pronouns; reflexive pronouns; indefinite pronouns; interrogative pronouns.
Numbers, including ordinal numbers; date and time.
Prepositions and cases; nominative, accusative, dative (and genitive) cases.
Conjunctions and simple subordinating conjunctions; letter formats.

Topic Area C – The world around us

C1 Home town and geographical surroundings

Objective

- to understand and give information about home town and local environs.

Vocabulary

- buildings and places within a town/countryside
- countries
- environment
- weather
- directions

Grammar

Revision of present, perfect and future tenses; imperfect tense.
Demonstrative pronouns; relative pronouns and clauses.
Compound nouns; revision of cases; revision of adjective endings; comparisons.
Prepositions with places.
Conjunctions (*weil).*

C2 Shopping

Objectives

- to understand and give information about different shops
- to understand prices, weights and measures
- to give opinions about clothes and fashion

Vocabulary

- shops

- shopping (food and clothes)
- numbers, weights and measures
- sizes

Grammar
Present tense of regular and irregular verbs; perfect tense; *ich möchte/hätte gern* + infinitive; position of infinitive/past participle; word order.
Articles and cases (revision); comparisons.
Etwas/nichts + adjective; demonstrative pronouns; pronouns in the accusative.
Prepositions + cases (revision).

C3 Public service
Objective
- to give and understand information about services in a post office, bank, police station and lost property office

Vocabulary
- places in a town
- objects; post office
- currency
- bank
- lost property office
- minor crime incidents
- numbers
- colours

Grammar
Revision of present tense, including separable and inseparable verbs; perfect tense, simple imperfect tense; future tense.
Articles; cases; adjectives and endings; adverbs of time and place.
Indefinite pronouns; reflexive pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions; word order.

C4 Natural environment
Objective
- to understand and give information about problems affecting the environment, such as climate change and pollution, and remedial measures, such as renewable energies and recycling

Vocabulary
- places in the town and countryside
- environment
- weather

Grammar
Revision of present tense, including separable and inseparable verbs; perfect tense, simple imperfect tense; future tense; conditional tense; passive tense (receptive); subjunctive (receptive); modal verbs; commands.
Articles; cases; adjectives and endings; adverbs of time and place; negatives.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions; word order.

C5 Weather
Objective
- to understand and give information regarding the weather

Vocabulary
- places in the town and countryside
- compass points
- weather

Grammar
Revision of present tense, including separable and inseparable verbs; perfect tense, simple imperfect tense; future tense.
Articles; cases; adjectives and endings; adverbs of time and place; negatives.
Impersonal pronouns.
Prepositions + cases.
Subordinating conjunctions; word order.

C6 Finding the way
Objective
- to understand and give directions

Vocabulary
- places in a town
- directions
- shops
- modes of transport

Grammar
Revision of present tense; commands; future tense.
Articles; cases; adjectives and endings; adverbs of place; negatives; ordinal numbers.
Indefinite pronouns.
Prepositions + cases.
Word order.

C7 Meeting people
Objective
- to find out and discuss some general facts about people from other countries and about different ethnic groups living in German-speaking countries or student's own country

Vocabulary
- countries and nationalities
- problems ethnic groups face
- numbers

Grammar
Revision of present tense; perfect tense, simple imperfect tense; future tense.
Articles; cases; adjectives and endings; adverbs of place; negatives.
Indefinite pronouns.
Prepositions + cases.
Subordinating conjunctions; word order.

C8 Places and customs
Objective
- to understand and give information about festivals and customs in other countries

Vocabulary

- countries and nationalities
- festivals

Grammar

Revision of present tense; perfect tense, simple imperfect tense; future tense.
Articles; cases; adjectives and endings; adverbs of place; negatives.
Indefinite pronouns.
Prepositions + cases.
Subordinating conjunctions; word order.

C9 Travel and transport

Objective

Learners will be able to understand and give information about different types of journey and modes of transport; discuss the environmental impact of transport on towns/regions; understand and give information about travel arrangements (times, prices, etc.)

Vocabulary

- local places in the town/countryside
- buildings
- directions
- numbers
- time
- travel and transport vocabulary
- forms of transport; enquiries about transport
- buying tickets, etc.
- railway/bus station and airport facilities
- private and public transport

Grammar

Revision of present tense, including separable and inseparable verbs; perfect tense, simple imperfect tense; future tense; conditional tense; passive tense (receptive); subjunctive (receptive); modal verbs; commands.
Articles; cases; adjectives and endings; adverbs of time and place; negatives.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions; word order (time, manner, place).

Topic Area D – The world of work

D1 Further education and training

Objective

- to understand and give information about exams and preferences for future study/training
- to discuss exam preparation, revision and stress
- to understand and express ideas on work experience

Vocabulary

- exams
- work experience placement jobs
- general part-time jobs
- further education

Grammar

Revision of present tense, including separable and inseparable verbs; perfect tense, simple imperfect tense; future tense; conditional tense; subjunctive (receptive); modal verbs; *um …zu* + infinitive; *vor-haben* + infinitive.
Articles; cases; adjectives and endings; negatives.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions (use of *weil*); word order.

D2 Future career plans
Objective

- to understand and give information about preferences for work and careers

Vocabulary

- world of work
- work experience placement job
- jobs and careers
- unemployment
- future plans

Grammar
Revision of present tense, including separable and inseparable verbs; perfect tense, simple imperfect tense; future tense; conditional tense; subjunctive (receptive); modal verbs; *um …zu* + infinitive; *vor-haben* + infinitive.
Articles; cases; adjectives and endings; negatives; lack of article with jobs.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions (use of *weil*); word order.

D3 Employment
Objective

- to talk about employment

Vocabulary

- world of work
- work experience placement jobs
- jobs and careers
- unemployment
- future plans

Grammar
Revision of present tense, including separable and inseparable verbs; perfect tense, simple imperfect tense; future tense; conditional tense; subjunctive (receptive); modal verbs; *um …zu* + infinitive; *vor-haben* + infinitive.
Articles; cases; adjectives and endings; negatives; lack of article with jobs.
Indefinite pronouns; reflexive pronouns; impersonal pronouns;interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions (use of *weil*); word order.

D4 Communication
Objective
Learners will be able to understand and make applications for jobs and understand formal letter formats and CVs. This topic can be linked in with D5. This topic will be aimed at learners who have a

good background knowledge of German, so should not be covered in the early stages of the course.
Vocabulary
World of work; job adverts; jobs and careers; formal letter formats; CVs.
Grammar
Revision of present tense, including separable and inseparable verbs; perfect tense; simple imperfect tense; future tense; conditional tense; subjunctive (receptive); modal verbs; *um …zu* + infinitive; *vor-haben* + infinitive.
Articles; cases; adjectives and endings; negatives; lack of article with jobs.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions (use of *weil*); word order; formal letter formats.

D5 Language at work

Objective

- to understand and discuss everyday routines at work and new technologies in the workplace, and the advantages and disadvantages of them

Vocabulary

- world of work
- job adverts
- jobs and careers
- new technologies in the workplace

Grammar

Revision of present tense, including separable and inseparable verbs; perfect tense; the passive; *um …zu* + infinitive; modal verbs.
Articles; cases; adjectives and endings; negatives.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions; word order.

Topic Area E – The international world

E1 Holiday travel and transport

Objective

- to understand and give information about travelling and holidays

Vocabulary

- holidays
- transport emergencies
- warnings and accidents

Grammar

Revision of present tense; separable and inseparable verbs; perfect tense (+ verbs that take *sein*); imperfect tense; future tense; conditional tense; um *…zu* + infinitive; modal verbs.
Articles; cases; adjectives and endings; negatives.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns; demonstrative pronouns.
Prepositions + cases, expressions of time and place.
Subordinating conjunctions; word order.

E2 Geographical surroundings

Objective

- to understand and give information about different geographical areas

Vocabulary
- German-speaking countries
- places in a town/ region/ country
- cultural differences

Grammar
Revision of all tenses; separable and inseparable verbs; modals.
Articles; cases; adjectives and endings; adverbs of time and place; negatives.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions; word order.

E3 Weather
Objective
- to understand and give information about weather and climate, and climate change

Vocabulary
- places in the town and countryside
- compass points; weather
- climate patterns and changes

Grammar
Revision of all tenses; separable and inseparable verbs; modals.
Articles; cases; adjectives and endings; adverbs of time and place; negatives.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions; word order

E4 Places and customs
Objective
- to understand and give information about places and customs around the world and about different communities living in German-speaking countries

Vocabulary
- countries and nationalities
- meeting people
- culture and religion
- charities and voluntary work

Grammar
Revision of all tenses; separable and inseparable verbs; modals.
Articles; cases; adjectives and endings; adverbs of time and place; negatives.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions; word order.

E5 Food and drink
Objective
- to understand and give information about food and drink in German-speaking countries and from around the world, and share opinions about it

Vocabulary
- countries and nationalities
- food and drink

Grammar
Revision of all tenses; separable and inseparable verbs; modals.
Articles; cases; adjectives and endings; adverbs of time and place; negatives.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases, quantities.
Subordinating conjunctions; word order.

E6 Meeting people
Objective
- to understand and discuss different ways of meeting people, including social media

Vocabulary
- meeting people
- social media
- technology

Grammar
Revision of all tenses; separable and inseparable verbs; modals.
Articles; cases; adjectives and endings; adverbs of time and place; negatives.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions; word order.

E7 Issues according to available resources and individual interest
Objective
- to understand and discuss world issues appropriate to their age range
- to express opinions and offer different viewpoints

Vocabulary
- world issues
- global problems
- charities
- voluntary work

Grammar
Revision of all tenses; separable and inseparable verbs; modals.
Articles; cases; adjectives and endings; adverbs of time and place; negatives.
Indefinite pronouns; reflexive pronouns; impersonal pronouns; interrogative pronouns; relative pronouns.
Prepositions + cases.
Subordinating conjunctions; word order.

Year 7 Spanish

Yo Unit 1
Content: • To introduce themselves and their families and friends • To answer questions about their families: (¿Cómo se llama tu madre?,¿De dónde es tu hermano?, ¿Cuántos años tiene tu abuelo? • To answer questions about themselves (¿Cómo te llamas?,¿De dónde eres?, ¿Cuántos años tienes?) • To say the time in Spanish • To know cultural facts about Spanish speakers countries (nationalities, capitals) • Meeting and greeting/two ways of saying 'you' • Expressing people's age • Months and birthdays • Hold a short conversation

Grammar
Writing • To use the present tense in regular verbs (-ar, -er,-ir) • To use the articles (gender and number) in the right way • To use adjectives (gender and number) in the right way

Phonics, spelling and vocabulary
• Numbers (0-50) • Alphabet • The time • Nationalities • Welcome words (hola, adios, Buenos dias, buenas tardes)

Cultural knowledge
• Hispanic famous people • Nationalities and Spanish speakers' countries. Capitals

Familia Unit 2
Content • Describing family and pets using the definite article/making adjectives agree/the verb ser/intensifiers: muy, bastante • Nationalities • Reading about people and animals • Numbers to 100 • Spelling words- the alphabet • Indicating possession

Grammar
Writing • Family and pets/using possessive adjectives: mi, tu, su • The infinitive/the irregular verb tener/ser • Verbs used when speaking about other people

Phonics, spelling and vocabulary
• Family members (madre, padre, hijo, abuelo, tio, hermano) • Description adjectives (guapo, feo, alto, bajo, delgado, liso, corto) • The colors

Home and hobbies Unit 3
Content • Inferring rules from known language • Reading for enjoyment • Describing where things are/distinguishing between indefinite and definite articles • Using prepositions to indicate the location of objects • Describing what happens in the house • To learn how to talk about the type of house you live in • To describe rooms and furniture in the house • To talk about where things are in the house • To talk about what you do or have to do to help at home • To learn to give instructions • To talk about where you live • To describe what your home town is like • To say what there is to do there • To give a reply to invitations to different places

Grammar
Writing • Describing daily routines using regular -ar reflexive verbs • Where people live/using ser and estar in the correct context • Numbers over 100 and ordinal numbers

Phonics, spelling and vocabulary
• Different rooms in house • Different furniture • Possessives • Activities ate home

Cultural knowledge
• Different countries speaking Spanish. Research

Year 8 Spanish

School
Content: • Places in our school • Following directions • To talk about the facilities in the school • To seek and offer opinions about the school • To learn the names of the different school subjects • To express your personal preferences for your subjects and give reasons • To discuss your school timetable • To identify various things connected with school • To describe your classroom/school • To say what you have/own • To learn to say where things are.

School subjects/Activities
Content • Talk about the facilities in the school • Seek and offer opinions about the school • Learn the name of the different subjects • Seek other opinions of these subjects • Express your personal preferences for your subjects and give reasons • Discuss the school timetable • Going out and entertainment • Reserving and buying tickets • Understanding information about public events • Applying known language to a new context

Grammar
Writing • The verb HABER • Non regular verbs • Using the preterite tense to recount actions in the past • Introduction to the imperfect tense

Phonics, spelling and vocabulary
• Directions • Articles • Vocabulary related to the school • Subjects • Adjectives • After school activities • Question words

Diviértete fuera de casa / Al aire libre Unit 1
Content: • To learn how to talk about your hobbies and interests, and those of others • To find out how to express what you don't do, and add other negative information • To talk about how often you do things • Describe your daily routine and that of others • To say at what time you do various activities • To say what sports and outdoors activities you like to do • To talk about aches and pains • To discuss the weather and invite someone to go out and do something

Grammar
Writing • The verb HABER • Past, present and future tenses • Regular -ar verbs in the preterite tens • Present participle and gerund • Me duele, tengo dolor • Duele/duelen

Phonics, spelling and vocabulary
• Hobbies • Preferences • Likes/dislikes • Negative particles

Cultural knowledge
• La vuelta a España

De compras Unit 2
Content • To practice high numbers • To deal in different weights and currencies • To learn how to buy food in different situations • To talk about clothes • To learn how to shop for shoes and clothes • To discover how to express what you like and not • To find a way around a department store • To learn the meaning of different signs • Fashion preferences • Learning about dress codes in Spanish-speaking countries • Applying the knowledge, skills and understanding of the unit

Grammar
Writing • The verb GUSTAR • The verb LLEVAR

Phonics, spelling and vocabulary
• Food • Clothes • Directions • The mall • Ordering

Year 9 Spanish

Weather and seasons Unit 3
Content • Discuss likes and dislikes • Express what you need • To ask about the weather • To identify the weather • To express some physical feelings as being cold or hungry

Grammar
Writing • The verb GUSTAR • The verb LLEVAR

Phonics, spelling and vocabulary
• Weather conditions • Feelings

Healthy living/Restaurant Unit 4
Content: • To learn how to tell someone to do something • To find out ways of saying what you must do, or need to do, or should do, • To express what you are going to do • Likes and dislikes about food¨ • What it is good for your health • Celebrations • To choose which restaurant to eat and book a table • To learn about different dishes • To find out how to order food and drink • To discover how to invite others • To learn how to pay the bill

Phonics, spelling and vocabulary
• Plural nouns • Compound sentences with connectives y and pero • Adjectives: masculine and feminine plural agreement • Imperatives: tú form of regular verbs • Phonic focus: synthesising words from phonemes; hearing individual phonemes in words

De viaje/Al hotel Unit 1
Content: • To talk about your holidays in the present tense, where you go and what you do • To talk about the things you and your family do • To talk about different ways to travel • To give reasons for your preferences • To book a journey • To find out travel details • To talk about dream destinations • To find out what there is to see in a town • To ask the way • To give directions • To understand signs you see • To learn how to make a hotel booking • To make choices between things • To make a complaint

Grammar
Writing • The verb HACER • Give reasons • Give opinions

Phonics, spelling and vocabulary
• Holidays/Vacation • Transport and travel • Dreams

IGCSE Spanish as a Foreign Language

(Cambridge IGCSE Syllabus 0530)

Years 10

Profesiones Unit 1
Content: • To discover how to say what you would like to do in later life • To talk about the characteristics you may need for that career • To practice descriptions of people

Cultural knowledge Unit 2
Content: • Reading and researching about different issues in the Hispanic world

Asi soy yo Unit 1
Mi familia y yo: • Talking about myself and my family • Revising the present tense of key verbs • Preparing a presentation on this topic • Adjectives • **Grammar- Question words, the present tense of four key verbs, adjectives** ¿Cómo es tu casa? • Describing your home • Describing your bedroom • Using prepositions • Household chores • Pockey money • Daily routines • Reflexive verbs • **Grammar- How long?, using prepositions, reflexive verbs**

Mi barrio

- Talking about your local area
- Finding your way around town
- Discussing advantages and disadvantages
- Ser/Estar/Hay
- Using the imperfect
- **Grammar- Ser, estar and hay, the imperfect tense**

Gente joven Unit 2

El tiempo libre:

- Say what I like doing in my free time
- Revising the present tense of key verbs
- Arrange to go out
- Use the present and past tense
- **Grammar- The present tense, the present tense of irregular verbs, the preterite tense.**

¿Cómo te enteras?

- Say what types of media I prefer
- Give opinions and reasons
- Use impersonal verbs
- Grammar- Expressing an opinion, using infinitives.

¿A quién admiras?

- Practice using ser and tener to describe people
- Practice talking about people I admire
- Practice extended writing
- Use adverbs and adjectives
- Use the superlative
- **Grammar- Using adverbs, más...que, menos...que, tan...como, more bout using adjectives, the superlative.**

El mundo del trabajo Unit 3

- ¿Qué tal tu cole?:
  - Learn the different school subjects
  - Talk about daily routine
  - Use verbs expressing necessity and obligation
  - Use pronouns
  - **Grammar: Verbs expressing necessity, agreement of adjectives, pronouns**

- La práctica del trabajo
    - Apply for a job
    - Learn about workplace activities
    - Use the preterite
    - **Grammar- The preterite tense.**
- El futuro
    - Talk about the future (ir+infinitive)
    - **Grammar- The future**

Years 11

El mundo es un pañuelo Unit 1

- El transporte
  - Talk about travelling around
  - Compare types of transport
  - Use interrogatives
  - Use pronouns
  - **Grammar- Interrogatives, prepositions**
- De vacaciones
  - Talk about holiday plans
  - Talk about hotels and accommodations
- El tiempo
  - Talking about the weather
  - Compare climates
  - Use different tenses to describe the weather

Así es mi vida Unit 2

- Una vida sana:
  - Learn the parts of the body.
  - Discuss health, healthy eating and exercise.
  - Use formal and informal imperatives
  - Use impersonal verbs
  - **Grammar- The imperative, giving instructions and advices, impersonal verbs**
- De compras:
  - Talk about shops and places of business
  - Learn quantities, sizes and shapes
  - Discuss eating out
  - Use ordinal umbers
- A comer fuera
  - Learn about regional specialities
  - Discuss restaurants and places to eat and drink
  - Learn food types and recipes
  - Use disjunctive pronouns
- Vivir a tope
  - Talk about youth issues
  - Give opinions
  - Use the subjunctive mood
  - **Grammar- Giving opinions, the imperative and present subjunctive forms**
  - Use different tenses to describe the weather
  - reparation for the Cambridge exam

Year 7 Dansk A

Læsning og læseforståelse
• Kan læse ukendte ord ved umiddelbar genkendelse af de mest almindelige orddele. • Har viden om morfemer i danske ord • Har viden om ord og udtryk, der forklarer nyt stof • Kan gengive hovedindholdet i fagtekster • Har viden om fagteksters struktur • Kan vurdere teksters perspektiv på et emne • Har viden om metoder til sammenligning af teksters perspektiver

Litteraturforståelse
• Kan læse med fordobling • Har viden om at læse på, mellem og bag linjerne • Kan undersøge fortællerpositioner • Har viden om fortællertyper • Kan udtrykke sin tekstforståelse gennem medskabelsen af teksten • Kan anmelde litteratur og andre æstetiske tekster • Kan sætte teksten i forhold til andre værker • Har viden om intertekstualitet

Stavning, grammatik, tegnsætning og ordforråd
• Kan stave alle almindelige ord sikkert • Kender til de mest almindelige ordsprogs betydninger • Har et alderssvarende ordforråd både i skrift og tale • Har viden om bøjningssystemer og ords oprindelse • Kan anvende afsnit og sætte startkomma • Har viden om sætnings – og tekststruktur • Anvender relevante stoptegn sikkert • Anvender ordklassers bøjninger sikkert

Skriftlig kommunikation
• Kan konkretisere ideer gennem skrivetænkning • Har viden om tænkeskrivning, mindmap og brainstorm • Kan udarbejde anmeldelser, instruktioner og fagtekster • Har viden om kommenterende og forklarende fremstillingsformer • Har viden om modtagerforhold • Kan udtrykke sig sammenhængende og forståeligt på skrift

Mundtlig kommunikation
• Kan modtage og give respons • Kan fremlægge sit produkt for andre • Har viden om frie og formaliserede samtaleformer • Har viden om talesprogets virkemidler • Kan indgå i sprogligt mangfoldige situationer • Kan trække tråde fra et sprog til et andet • Har viden om sprogets historie og sprogfamilier

Year 8 Dansk A

Læsning og læseforståelse

- Kan sammenholde teksters formål og indhold med læseformål
- Kan læse ukendte ord i fagtekster
- Har viden om stavemåde og betydning af ord i fagtekster
- Kan udlede dele af ords betydning fra konteksten
- Har viden om forståelsesstrategier
- Kan anvende grafiske modeller til at få overblik over teksters struktur og indhold
- Kan vurderer teksters anvendelighed
- Kan læse og forholde sig til teksters faglige og offentlige sammenhænge

Litteraturforståelse

- Kan udtrykke en æstetisk teksts stemning
- Kan undersøge en teksts rum og tid
- Har viden om scenarier og tidsforståelse
- Kan sammenfatte sin fortolkning
- Har viden om motiv og tema
- Kan vurdere en tekst i lyset af tekstens samtid
- Har viden om udvalgte historiske og kulturelle litterære perioder
- Kan forholde sig til almene temaer gennem systematisk undersøgelse af litteratur og andre æstetiske tekster

Stavning, grammatik, tegnsætning og ordforråd

- Kan stave alle almindelige ord sikkert
- Kan anvende lydfølgereglerne sikkert
- Kender til danske ordsprogs betydninger
- Har viden om bøjningssystemer og ords oprindelse
- Kan anvende afsnit og sætte startkomma
- Har viden om sætnings – og tekststruktur
- Anvender relevante stoptegn sikkert
- Anvender ordklassers bøjninger sikkert

Skriftlig kommunikation
• Kan udtrykke sig i skrift i formelle situationer • Har viden om forskellige fremstillingsformer • Kan udarbejde dramatiske, dokumentariske og interaktive produkter • Har viden om synopse, manuskript og storyboard • Har viden om brug af respons i skriftlige produkter, ud fra fastlagte kriterier

Mundtlig kommunikation
• Kan kommunikere med bevidsthed om sprogets funktion i overskuelige formelle og sociale situationer • Kan skabe en fælles fortælling sammen med andre • Kan videndele og samarbejde • Kan kommunikere i enkle situationer med nordmænd og svenskere • Kan iagttage en kommunikationssituation • Har viden om kommunikationsmodeller

Year 9 Dansk A

Læsning og læseforståelse
• Kan kildekritisk vurdere bruger - og ekspertproduceret indhold • Kan vurdere tekstens afsender og målgruppe • Kan variere læsehastighed efter læseformål og ordkendskab i teksten • Har viden om sammenhæng mellem ordkendskab og læsehastighed • Har viden om sammenhæng mellem tekst og kontekst

Litteraturforståelse
• Kan vurdere og har viden om tekstens sproglige virkemidler • Kan sammenfatte informationer fra forskellige elementer i teksten • Har viden om tekstelementers opbygning og funktion • Har viden om æstetisk sprog • Kan undersøge sammenspillet mellem genre, sprog, indhold og virkelighed • Har viden om genrer, sprog, symbolik, forfatter, værk og fortæller • Kan fortolke egne og andres fremstillinger af identiteter i tekster • Kan vurdere tekstens form • Kan sætte teksten i relation til aktuelle problemstillinger • Har viden om metoder til at sætte tekster i relation til aktuelle problemstillinger

Stavning, grammatik, tegnsætning og ordforråd
• Kan anvende korrekt tegnsætning og retstavning, herunder start – og slutkomma • Kan registrere og korrigere egne og andres fejl • Har viden om sproglig korrekthed

Skriftlig kommunikation
• Kan udtrykke sig forståeligt, klart og varieret på skrift i en form der passer til genre og situation • Kan indsamle oplysninger og disponere over indholdet • Har viden om opgave og problemformulering • Har viden om argumenterende og reflekterende fremstillingsformer • Kan respondere på forskellige fremstillingsformer • Kan layoute tekster, så det fremmer kommunikationen • Har viden om formidlingsformer

Mundtlig kommunikation
• Kan udtrykke sig forståeligt, klart og varieret i tale i en form der passer til genre og situation • Har viden om spørgeteknikker • Kan argumentere og informere • Har viden om argumentations - og informationsformer • Har viden om kommunikationsetik • Kan iagttage udtryk for holdninger i det talte sprog • Har viden om sproglig modalitet • Har viden om norsk og svensk i letforståelig form

Year 10 Dansk A

Læsning og læseforståelse
• Kan skaffe sig overblik over multimodale teksters opbygning • Kan læse komplekse tekster og lånte ord hurtigt og sikkert • Kan sammenfatte informationer fra flere tekster • Har viden om metoder til opstilling af scenarier • Har viden om forskellige læserpositioner

Litteraturforståelse
• Kan følge forløb og komposition i komplekse tekster • Har viden om komplekse fortællestrukturer og kompositioner • Kan undersøge teksters flertydighed • Har viden om fortællepålidelighed og betydningslag i tekster • Kan foretage flertydige fortolkninger • Har viden om metoder til fortolkninger • Kan diskutere forskellige fortolkninger af en tekst • Kan sætte tekster i perspektiv til litterære og kulturel tradition gennem litteraturhistorisk læsning og Dansk litteraturs kanon • Har viden om kulturelle og litterære perioder og Dansk litteraturs kanon

Stavning, grammatik, tegnsætning og ordforråd
• Har viden om morfemer i låneord • Kan anvende korrekt tegnsætning og retstavning, herunder start – og slutkomma • Kan registrere og korrigere egne og andres fejl • Har viden om sproglig korrekthed

Skriftlig kommunikation
• Kan organisere samarbejde om fremstilling • Har viden om produktionsplanlægning, roller, faser, ressourcer, opgavetyper og deadlines • Har viden om virkemidler, grafisk design og efterproduktion • Har viden om sproglig stil • Kan udtrykke sig forståeligt, klart og varieret på skrift i en form der passer til genre og situation

Mundtlig kommunikation
• Kan analysere samtaler • Har viden om retoriske virkemidler, talehandlinger og positioner • Har viden om kropslige og retoriske virkemidler • Kan begå sig bevidst i sprogligt komplekse situationer • Har viden om sproglige normer og omgangsformer i forskellige situationer • Har viden om nuancer i sproget og sprogets virkning • Kan udtrykke sig forståeligt, klart og varieret i tale i en form der passer til genre og situation

Year 11 Dansk A

Læsning og læseforståelse

- Kan afgøre hvordan en tekst skal læses
- Har viden om læsestrategier
- Kan læse komplekse tekster hurtigt og sikkert
- Kan anvende ord og udtryks betydning tila t forstå komplekse tekster
- Har viden om ordvalgets betydning for budskabet
- Kan forstå komplekse tekster
- Har viden om metoder til vurdering af teksters formål og perspektiv
- Har viden om metoder til systematisk undersøgelse af tekster

Litteraturforståelse

- Kan forholde sig til kultur, identitet og sprog gennem systematisk undersøgelse og diskussion af litteratur og andre æstetiske tekster
- Kan reflekteret indleve sig i teksters univers som grundlag for fortolkning
- Har viden om fortolkningsorienterede læsestrategier
- Kan gennemføre en målrettet analyse af en tekst
- Har viden om analysemetoder og forståelsesstrategier
- Kan diskutere bud på et elle flere samlede udsagn på baggrund af undersøgelsen
- Har viden om metoder til sammenstilling af undersøgelsens elementer
- Kan vurdere teksters udsagn og kvalitet
- Kan sætte tekster i relation til mulige fremtidsperspektiver
- Har videnom metoder til at sætte tekster i relation til mulige fremtidsperspektiver

Stavning, grammatik, tegnsætning og ordforråd

- Kan fremstille tekster med korrekt grammatik og layout
- Har viden om korrekt grammatik, stavning, tegnsætning og layout

Skriftlig kommunikation
• Kan udtrykke sig forståeligt, klart og varieret på skrift i en form der passer til genre og situation • Kan tilrettelægge fra proces til færdigt produkt • Har viden om komplekse fremstillingsformer • Kan disponere og layoute stof så det fremmer hensigten med produktet • Har viden om målrettet dispositions – og formidlingsmetoder • Kan fremstille sammenhængende tekster i forskellige genrer og stilarter • Har viden om varierede udtryksformer, målrettet forskellige målgrupper • Kan respondere på forholdet mellem produktion og genre • Har viden om genretræk • Har viden om evalueringsmetoder

Mundtlig kommunikation
• Kan deltage aktivt, åbent og analytisk i dialog • Har viden om demokratisk dialog • Har viden om sammenhæng mellem situation, kultur og kropssprog • Kan kommunikere aktivt i firskellige sproglige situationer i en globaliseret verden • Har viden om sammenhæng mellem sprog, situation og kultur • Kan karakterisere og diskutere sprog i forskellige situationer • Har viden om sprogbrug, sprogets variation og forskellige situationer

Year 7/8 Danish B

Intermediate

Speaking
• Tell about experiences • Take part of a discussion about familiar topic • Express fantasy, thoughts, feelings and experience • Understand the main content of spoken Danish • Read a simple text with good articulation

Reading
• Read and understand a simple text in a given genre and a familiar subject • Seek for an explanation and be able to translate new words • Express the content and understanding of a text • Read and understand easy non-fiction texts • Use the relevant method of reading in different text forms

Writing
• Write an understandable and coherent text on the basis of a given topic • Write in a narrative and creative manor with a vocabulary adjusted to various types of texts • Look for information in printed and digital texts and write from idea to final text • Spell easy and high frequent words in a text. Be able to use full stop and new paragraphs

Language and communication
• Use the language as a mean of contact and personal expression • Differentiate between written and spoken language • Know the meaning words and concepts of everyday life, fiction and non-fiction • Speak and write Danish with an appropriate use of word class and syntax • Discuss differences and similarities between Danish and other languages

Language, culture and society
• Take part of a conversation about everyday life in Denmark • Knowledge of a range of Danish songs, nursery rhymes • Knowledge of the Danish society

Year 7/8 Danish B

Advanced

Speaking

- Tell about experiences, debate, argue and inform
- Use the spoken language clearly in discussions, cooperation
- Express fantasy, thoughts, feelings and experience
- Understand spoken Danish and follow up with analytical questions and response
- Read a text aloud with good and clear articulation

Reading

- Read and understand age-appropriate text in a given genre and a familiar subject
- Seek for an explanation for words and technical terms in printed and digital dictionaries
- Maintain and express the main content of a printed text
- Look for new knowledge in non-fiction literature
- Use the relevant method of reading in different text forms and be critical about own text comprehension

Writing

- Write an understandable and coherent text on the basis of a given topic
- Write in a explaining, arguing and commenting manor with a vocabulary adjusted to various types of texts
- Collect and dispose knowledge before the writing process and write from idea to final text
- Spell all common words, use the correct conjugation and use punctuation

Language and communication

- Use the language for communication, argumentation and problem solving
- Differentiate between written and spoken language
- Know the meaning of technical and abstract words
- Speak and write Danish with an appropriate use of word class and syntax
- Reflect of differences and similarities between Danish and other languages

Language, culture and society

- Discuss social and cultural differences between nationalities
- Talk about different youth cultures in Denmark starting from movies, magazines etc.
- Be able to discuss the Danish society

Year 9, 10 & 11 Danish B

Beginners

Speaking
• Understand simple words and phrases connected to everyday life • Be able to present oneself and take part of a simple conversation about oneself • Express simple feelings and thoughts • Understand the main part of spoken Danish • Know the sound of the letters and read aloud single words

Reading
• Read and understand the content of a short and simple text with a familiar topic • Seek explanation of new words • Recapture the main part of a new text • Read and understand simple non-fiction texts

Writing
• Write simple words about familiar topics such as school, family and friends • Write narratively and creatively • Find information in a familiar text • Spell easy and high frequent words • Use the writing to maintain information and thoughts

Language and communication
• Be able to take part of a simple conversation and introduce oneself. • Knowledge of the differences between spoken and written language • Know the meaning of the high frequent words • Be able to say simple sentences

Language, culture and society
• Take about daily life • Knowledge of Danish rhymes, songs and poems • Know about Danish society

Year 9, 10 & 11 Danish B

Intermediate

Speaking

- Understand most common words and concepts
- Take part of a group discussion
- Express fantasies, thoughts, feelings and experience
- Understand the main part of spoken Danish
- Read a simple text with a good pronunciation

Reading

- Read and understand age-appropriate text in a given genre and a familiar subject
- Seek for an explanation for words and technical terms in printed and digital dictionaries
- Express the content and understanding of a text and discuss it
- Read and understand easy non-fiction texts

Writing

- Write an understandable and coherent text on the basis of a given topic
- Write in a explaining, arguing and commenting manor with a vocabulary adjusted to various types of texts
- Collect and dispose knowledge before the writing process and write from idea to final text
- Spell all common words, use the correct conjugation and use punctuation

Language and communication

- Use the language for contact and personal expression, argumentation and problem solving
- Differentiate between written and spoken language
- Know the meaning of words and context in everyday language, fiction and non-fiction
- Speak and write Danish with an appropriate use of word class and syntax
- Reflect of differences and similarities between Danish and other languages

Language, culture and society

- Discuss social and cultural differences between nationalities
- Talk about different youth cultures in Denmark starting from movies, magazines etc.
- Have knowledge about and be able to discuss the structure of the Danish society

Year 9, 10 & 11 Danish B

Advanced

Speaking
• Develop a nuanced vocabulary • Be able to discuss, argue and be in charge of a meeting and a discussion • Express fantasies, thoughts and knowledge • Understand spoken Danish and follow up with analytical questions and responses • Read a text aloud with clear articulation

Reading
• Read and understand texts in various genres • Be able to use encyclopedias and dictionaries and search on the internet • Maintain and express the main content of a printed text • Look for new knowledge in non-fiction literature, newspapers, encyclopedias and the internet

Writing
• Write a clear, detailed and precise text adapted to the correct genre • Write reflective, arguing and express oneself with a varied, nuanced vocabulary • Use correct spelling and formal correctness

Language and communication
• Characterize the language and use it for communication, arguing and problem solving • Characterize the differences and similarities between written and spoken language • Master words and concepts from many different subjects • Speak and write Danish according to the correct grammatical rules

Language, culture and society
• Discuss ethical, social, cultural subjects • Knowledge about Danish texts and genres • Discuss and reflect about social differences and similarities

Year 7 – Year 8 Traffic knowledge

These topics in this course will be instructed during the PSHCE (Personal, Social, Health,Citizenship Education) Assemblies.

Traffic behaviour

Traffic rules
Knowledge and Skills • is able to safely travel alone in the traffic by bike according to the traffic rules • demonstrates knowledge of the traffic rules for cyclists

Personal safety
Knowledge and Skills • conducts oneself carefully in traffic • demonstrates knowledge of potential distractors in the traffic • demonstrates knowledge of the reasons for not using mobile phones and music in traffic

Interaction in the traffic
Knowledge and Skills • can predict potential traffic situations and adapt their movements • demonstrates knowledge of potential risks associated with other types of traffic • demonstrates knowledge of braking distance, blind spots and heavy vehicles

Safe route
Knowledge and Skills • is able to pick out a safe route for cyclists • is able to identify what requires extra attention such as large traffic lights and roundabouts • demonstrates knowledge of the characteristics and signals of safe routes for cyclists

Handling an accident

Security
Knowledge and Skills • is able to secure injured people by stopping the traffic in less congested areas • demonstrates knowledge of securing injured people in less congested areas

Evaluation of an injury
Knowledge and Skills • is able to evaluate the breathing of the injured and create free airway • demonstrates knowledge of the characteristics of normal breathing

Calling for help
Knowledge and Skills • is able to call 112 and tell about the accident, name and place of accident • demonstrates knowledge about the necessary information at a 112 call

First aid
Knowledge and Skills • is able to assist at injuries such as concussion and fractures • demonstrates knowledge of stabilization of bone fractures and how to identify a concussion

Year 9 – Year 11 Traffic knowledge

These topics in this course will be instructed during the PSHCE (Personal, Social, Health,Citizenship Education) Assembly lesson.

Traffic behaviour

Traffic rules
Knowledge and Skills • is able to travel safely in the traffic according to the traffic rules • demonstrates knowledge of traffic rules in interaction with other road users • demonstrates knowledge of speed limits, limits for drinking and driving • demonstrates knowledge of the rules for mopeds and scooters

Personal safety
Knowledge and Skills • is able to reduce the risks of getting hurt in the traffic • demonstrates knowledge of risk factors in the traffic • demonstrates knowledge of the risk when driving too fast • demonstrates knowledge of the body's ability to react under influence of drugs and alcohol

Responsibility
Knowledge and Skills • is able to conduct responsibly in the traffic • demonstrates knowledge of liability in the traffic

Feasibility study
Knowledge and Skills • is able to evaluate possible consequences of behavior in traffic

Handling an accident

Security
Knowledge and Skills • is able to secure injured people by dragging them away when necessary • demonstrates knowledge of when its necessary to drag an injured person away from danger

Evaluation/assessment of an injury
Knowledge and Skills • is able to evaluate the cardiovascular functions of an injured person • demonstrates knowledge of circulatory failures

Call for help
Knowledge and Skills • is able to call 112 and tell about the accident, name and place of accident • demonstrates knowledge of the involvement of professional help

First aid
Knowledge and Skills • is able to demonstrate techniques for cardiopulmonary resuscitation • is able to stop life-threatening bleeding • demonstrates knowledge of life-saving first aid

Year 7 – Year 8 Education and Careers

These topics in this course will be instructed during the PSHCE (Personal, Social, Health,Citizenship Education) Assemblies.

Personal choices

My targets
Knowledge and Skills • Describe the connection between own wishes, interests and goals • Knowledge about own forces and interests

My posibilities
Knowledge and Skills • Give a description of different peoples careers • Knowledge about a variety of careers

My choices
Knowledge and Skills • Consider and argue for the decisions taken • Knowledge about different factors that can make influence on a decision

From education to job

From education to job
Knowledge and Skills • Describe the connection between school, educations and a job • Knowledge about the demands and qualifications for different careers

Information
Knowledge and Skills • Is able to search for information about educations and jobs

Education and job knowledge
Knowledge and Skills • Describe educations and jobs in different branches • Knowledge about educations, jobs and branches

Working life

Working conditions
Knowledge and Skills • Discuss working conditions in the past and in the presence • Knowledge about the rules of the labor market

Labor market
Knowledge and Skills • Can discuss the importance of a spacious and flexible labor market • Knowledge about equality and working environment

Working life
Knowledge and Skills • Discuss the connections between family, leisure and work

Year 9 – Year 11 Education and Careers

These topics in this course will be instructed during the PSHCE (Personal, Social, Health,Citizenship Education) Assemblies.

Personal choices

My targets
Knowledge and Skills • Formulate personal goals for education and career • Knowledge about own resources, assumptions and career desires

My posibilities
Knowledge and Skills • Connect own targets and desires with educations and careers

My choices
Knowledge and Skills • Make informed choices in a career perspective • Knowledge of the connections between career choices, personal values, interests and skills

From education to job

From education to job
Knowledge and Skills • Can account for possible connections between education and career • Knowledge about different educations, job possibilities locally, nationally and internationally

Information
Knowledge and Skills • Evaluate information about education and job • Knowledge about being critical when searching for information about education and job

Education and job knowledge
Knowledge and Skills • Evaluate possibilities in educations and jobs • Knowledge about the contents and requirements of various educations and jobs.

Working life

Working conditions
Knowledge and Skills • Evaluate aspects of a working life

Labor market
Knowledge and Skills • Evaluate the importance of conditions and changes on the labor market

Working life
Knowledge and Skills • Evaluate the significance of lifelong learning and innovation in career • Knowledge about lifelong learning and innovation in career

Year 7 – Year 8

Health, family and sexual education

These topics in this course will be instructed during the PSHCE (Personal, Social, Health,Citizenship Education) Assemblies.

Health and well-being

Health
Knowledge and Skills • is able to talk about what the school can do to promote health and well-being • knowledge about what promotes health and well-being

Lifestyle
Knowledge and Skills • can analyze standards and ideals for a good health • knowledge about standards and ideals for health

Living conditions
Knowledge and Skills • can analyze how health is affected by living conditions • knowledge about interaction between health, well-being and living conditions

Rights
Knowledge and Skills • is able to discuss the options if a child's fundamental right to protection is being violated • knowledge about children's right to being protected against physical, psychical and digital abuse

Personal boundaries
Knowledge and Skills • is able to respect own and other peoples boundaries • knowledge about bullying and well-being

Feelings
Knowledge and Skills • is able to understand the importance of good friendships • knowledge about relations impact on health and well-being

Gender, body and sexuality

Standards and ideals
Knowledge and Skills • is able to analyze how one's body and gender can affect people • knowledge about standards for body and gender

Puberty
Knowledge and Skills • is able to discuss the puberty's importance for identity and relation • knowledge about the physical and psychologial changes during puberty

Family
Knowledge and Skills • knowledge about sexuality

Year 9 – Year 11

Health, family and sexual education

These topics in this course will be instructed during the PSHCE (Personal, Social, Health,Citizenship Education) Assemblies.

Health and well-being

Health
Knowledge and Skills • is able to talk about how health and well-being is promoted through health policies • knowledge about health policies

Lifestyle and living conditions
Knowledge and Skills • can analyze health factors in relation to own life • knowledge about health factors that are particularly relevant to teenagers

Health inequality
Knowledge and Skills • is able to discuss health inequality • knowledge about factors that create health inequality

Personal boundaries
Knowledge and Skills • is able to discuss how abuse of kids and teenagers can be prevented • knowledge about violence, physical, psychological and sexual abuse

Relations
Knowledge and Skills • is able to understand emotional dilemmas in relations • knowledge about the feelings and relations impact on health, well-being and sexuality

Sexual health
Knowledge and Skills • is able to know what promotes own and other people's sexual health and well-being • knowledge about sexual health and well-being

Gender, body and sexuality

Standards and ideals
Knowledge and Skills • is able to analyze body, gender and sexuality in a present, historical and global perspective • knowledge about cultural and social standards and ideals for body, gender and sexuality

Sexual rights
Knowledge and Skills • is able to discuss sexual rights in Denmark and the world • knowledge about the rights related to body, gender, sexuality and family