GCSE Revision Checklist

Year 11

The Barlow RC High School
& Specialist Science College

Art and Design Exam

Preparation

You must have:

Sketchbook including-

1. Design development
2. Final design
3. Colour studies
4. Annotations explaining personal response

Exam

In the exam you will:

- Complete 3D/ relief African inspired construction.

IMedia Revision List:

- Mood Boards
- Camera angles and movements
- Storyboards
- Scripts
- Mind Maps/Spider Diagrams Work Plans and Schedules
- Visualisation Diagrams
- Target Audiences
- Client Requirements
- Digitising pre-production documents
- Primary and Secondary Research
- Health and Safety
- Location Recce
- Legislation
- Film Classification
- File Formats ..
- File Naming Conventions
- Reviewing work

3Ddesign Exam

Preparation

You must have:

- Similar Products research
- Architecture/architect research
- Storage Design ideas based on research
- *Development sheets recording details / changes / modifications / problem solving / different aesthetics for your chosen design*
- *2Ddesign prepared drawings / templates for pieces that will need cutting.*

Exam

In the exam you will:

- Produce a Storage Unit

Business Paper 1:(Investigating a small Business)

1.1: Enterprise and entrepreneurship

- 1.1.1 The Dynamic Nature of Business
- 1.1.2 Risk and reward
- 1.1.3 The role of business enterprise

1.2 Spotting a Business Opportunity

- 1.2.1 Customer Needs
- 1.2.2 Market research
- 1.2.3 Market Segmentation
- 1.2.4 The Competitive environment

1.3 Putting a business idea into practice

- 1.3.1 Business Aims and objectives
- 1.3.2 Business revenues costs and profits
- 1.3.3 Cash and Cash Flow
- 1.3.4 Sources of Business finance

1.4 Making the business effective

- 1.4.1 The options for start-ups and small businesses
- 1.4.2 Business Location
- 1.4.3 The marketing mix
- 1.4.4 Business Plans

1.5 Understanding external influences

- 1.5.1 Business Stakeholders
- 1.5.2 Technology and Business
- 1.5.3 Legislation and Business
- 1.5.4 The economy and Business
- 1.5.5 External influences

Business Paper 2: (Building a Business)

2.1 Growing a Business

- 2.1.1 Business Growth
- 2.1.2 Changes in aims and objectives
- 2.1.3 Business Globalisation

2.2 Making marketing decisions

- 2.2.1 product
- 2.2.2 Price
- 2.2.3 Promotion
- 2.2.4 Place
- 2.2.5 Making the marketing mix to make Business decisions

2.3 Making operational decisions

- 2.3.1 Business operations
- 2.3.2 Working with suppliers
- 2.3.3 Managing quality
- 2.3.4 The sales process

2.4 Making financial decisions

- 2.4.1 Business calculations
- 2.4.2 Understanding Business performance
- 2.5 Making human resource decisions
- 2.5.1 Organisational structure
- 2.5.2 Effective recruitment
- 2.5.3 Effective training and development of staff
- 2.5.4 Motivation

Computer Science Revision List:

Paper 1 Computer systems

- Systems architecture
- Memory
- Storage
- Wired and wireless networks
- Network topologies, protocols and layers
- Systems security
- Systems software
- Ethical, legal, cultural and Environmental concerns

Paper 2 – Computational thinking, algorithms and Programming

- 2.1 Algorithms
- 2.2 Programming techniques
- 2.3 Producing robust programs
- 2.4 Computational logic
- 2.5 Translators and facilitators of Language
- 2.6 Data representation

Paper 1

Changing Physical and Human Landscapes

- Drainage basins
- River processes (erosion, transportation, deposition) and the landforms created by these processes e.g. meanders, waterfalls
- Flooding in the UK (Boscastle 2004, Cumbria 2010)
- Flood Hydrographs
- Flood management (hard and soft engineering)
- Coastal processes (erosion, transportation, deposition) and the landforms created by these processes e.g. Wave cut platform, Arches
- Holderness coastline UK
- Coastal erosion management
- UK distinctive landscapes - management

Rural – Urban Links

- Differences and similarities between rural and urban areas in LICs and HICs
- Population change in UK - consequences
- Issues associated with CBDs in UK

- Counter urbanisation – causes and effects
- Retail change - impact of out-of-town shopping and online shopping on CBDs
- Rural issues in UK e.g. isolation, second homes
- Urbanisation in LICs – causes and effects e.g. India, Mumbai
- Global cities – LIC e.g. Manchester and HIC e.g. Mumbai

Tectonic Hazards

- Tectonic Processes at plate margins
- What are the different types of plate margin?
- What happens there? Diagram/explanation
- Convection currents fold mountains, mid-ocean ridges, ocean trenches
- Continental crust vs. Oceanic crust
- Volcanoes
    - Shield volcano formation and characteristics
    - Strato/composite volcano formation and characteristics
    - Features of volcanic landscapes
    - Primary and secondary effects
    - Montserrat – Soufriere Hills eruption 1997, 2004
    - Monitoring and response

- Earthquakes: Cause, effects, responses
    - Difference in effects LIC vs HIC
    - Nepal EQ 2015
- Tsunami: Cause, effects, responses
- Vulnerability to tectonic hazards

Paper 2

Weather, Climate and Ecosystems

- Global Warming: evidence and causes
- Extreme Weather: Cyclones e.g. cyclone Pam 2015 and drought e.g. California 2014
- UK climate – weather contrasts, depressions and anticyclones
- Ecosystems and biomes
- Nutrient cycles
- Tropical Rainforest (Structure, Problems, solutions)
- Savannah (Structure, Problems, solutions)

Geographical skills

- Maps, graphs and understanding data
- UK Fieldwork – Formby and Liverpool CBD
- Decision making exercise

Year 11 Mock Examinations Summary (History)

Paper 1	Paper 2	Paper 3
Medicine in Britain, c.1250-present	Early Elizabethan England, 1558-88	Weimar and Nazi Germany, 1919-29
50 minutes	55 minutes	80 minutes

*When scheduling examinations, please ensure that X and Y band populations sit the three papers *at the same time*. This will help to avoid some pupils being potentially advantaged or disadvantaged.

Revision List

*Note that the following revision list comprises of pertinent specification points prescribed by Edexcel. Further information on each one can be found on the Edexcel History website.

Paper 1

⇒ c.1250-c.1500: Medicine in medieval England
⇒ c.1500-c.1700: The Medical Renaissance in England
⇒ c.17000-c.1900: Medicine in eighteenth and nineteenth century Britain
⇒ c.1900-present: Medicine in Modern Britain

Paper 2

⇒ Queen, government and religion, 1558-69
⇒ Challenges to Elizabeth at home and abroad, 1569-88
⇒ Elizabethan society in the Age of Exploration, 1558-88

Paper 3

⇒ The Weimar Republic, 1918-29
⇒ Hitler's rise to power, 1919-33
⇒ Nazi control and dictatorship, 1933-39
⇒ Life in Nazi Germany, 1933-39

Music Department AQA GCSE

Component 1-Understanding Music Revision

Four areas of study:

Western Classical tradition 1650 – 1910
Popular Music
Traditional Music
Western classical tradition since 1910

Listening – unfamiliar music – you are required to listen to unfamiliar music form all four areas of study to identify and accurately describe musical elements, musical context and use musical language – including notation – stave notation, key signatures of up to and including 4 sharps and flats, simple and compound time signatures.

Study pieces:–

- Area of Study no 1 =Mozart Clarinet Concerto - Rondo.
- Area of Study no 3 = Graceland – Paul Simon
    - Graceland
    - You can call me Al
    - Diamonds on the soles of her shoes

You must be able to critically appraise the music form the specified study pieces using knowledge and understanding of:

- The effect of audience, time and place on how the how the pieces were created, developed and performed
- How and why the music across the selected areas of study has changed over time
- How the composer's purpose and intention for the study pieces is reflected in their use of musical elements
- Relevant musical vocabulary and terminology for the study pieces

Area of Study 1: Western Classical tradition 1650 – 1910

Unfamiliar Music

The Coronation Anthems and Oratorios of Handel

- Zadok the Priest
- The King shall rejoice
- Oratorios = e.g. Messiah

The orchestral Music of Haydn Mozart and Beethoven

Haydn Symphony No. 94 in G major *Surprise*
Symphony No. 1 in D major *The Clock*
Symphony No. 103 in E flat major *Drumroll*
Concertos – Trumpet in E flat major

Mozart Symphony No.25 in G minor K183 *Little G minor*
Symphony No. 41 in C major K551 *Jupiter*

Concertos – Clarinet Concerto in A majo
Horn Concerto No.4 in E flat major K495

Beethoven Symphony No. 6 *Pastoral*
Concertos – Piano Concerto No. 5 in E flat major
Violin Concerto in D major

The piano music of Chopin and Schumann
Chopin – 'Raindrop' prelude Op. 28 No. 15
'Military' polonaise Op. 40 No. 1
Schumann – 'Kinderszenen'

The Requiem of the late Romantic Period
Faure – Requiem
Verdi – Requiem
Brahms – Requiem
Dvorak - Requiem

Element type	**Element**
Melody	• Conjunct, disjunct, triadic, broken chords, scalic, arpeggio • Intervals within the octave • Passing notes • Diatonic, chromatic • Slide/portamento, ornamentation including acciaccaturas, appoggiaturas • Ostinato • Phrasing, articulation
Harmony	• diatonic, chromatic • consonant, dissonant • pedal, drone • cadences: perfect, plagal, imperfect, interrupted and tièrce de Picardie • identification of major, minor and dominant seventh chords using chord symbols/roman numerals.
Tonality	• major, minor, and their key signatures to four sharps and flats • modulation to dominant, subdominant in major or minor keys • relative major or minor • tonic major or minor.
Structure	• binary and ternary • rondo • arch-shape • through-composed • theme and variations, sonata, minuet and trio, scherzo and trio • call and response • ground bass, continuo • cadenza.
Sonority (Timbre)	• instruments and voices singly and in combination as found in music, including that for solo instruments, concertos, chamber groups

	• instrumental techniques such as arco, pizzicato, con sordino.
Texture	• harmonic/homophonic/chordal • polyphonic/contrapuntal • imitative, canonic, layered • antiphonal • a cappella • monophonic/single melody line • melody and accompaniment • unison, octaves.
Tempo, metre and rhythm	• simple and compound time • regular • anacrusis • common Italian tempo terms eg allegro, andante • pulse • augmentation, diminution • hemiola • semibreve, minim, crotchet, quaver, semiquaver • dotted rhythms, triplets, scotch snap • rubato, pause • tempo.
Dynamics and articulation	Gradation of dynamics as follows: • *pp, p. mp, mf, f, ff* including the Italian terms • *cresc, crescendo, dim, diminuendo* including hairpins • *sfz, sforzando* • common signs, terms and symbols.

Area of Study 2: Popular Music

Unfamiliar Music

- **Music of Broadway**
  - **Bernstein –** *West Side Story*
  - **Alan Menken –** *Little Shop of Horrors*
  - **Jim Jacobs and Warren Casey –** *Grease*
  - **Elton John and Tim Rice –** *The Lion King*
- **Rock Music of 1960s and 1970s**
  - **The Beatles –** *Sgt Pepper's Lonely Hearts Club Band*
  - **Led Zeppelin –** *IV*
  - **Pink Floyd –** *Dark side of the Moon*
- **Film and computer game music 1990s to present**
  - **John Williams –** *Star Wars*
    - *Harry Potter*
  - **Hans Zimmer –** *Pirates of the Caribbean*
    - *Gladiator*
    - *The Dark Knight*
  - **Harry Gregson-Williams** *– Metal Gear Solid 4 – Guns of Patriots (15)*
- **Pop music 1960s to present**
  - **White Stripes –** *Elephant*
  - **Taylor Swift –** *1989 (2014)*
  - **Adele –** *21*
  - **Alicia Keys –** *Girl on Fire (2012)*
  - **Coldplay –** *Ghost Stories (2014)*

Element type	Element
Melody .	• riff • pitch bend • melisma • hook • slide • glissando • improvisation • ostinato • blue notes
Harmony	• power chords • chord symbols eg C7 • stock chord progressions eg I VI IV V.
Tonality	• pentatonic • modal • blues scale.
Structure	• intro/outro • verse • chorus

	• break • twelve-bar blues • drum fill.
Sonority (Timbre)	• standard contemporary instrument types eg electric guitar, synthesisers • specific instrument types eg sitar, dilruba • instrumental techniques eg palm mute (pm), pitch bend, hammer-on (ho), pull-off (po), slide guitar/bottleneck • drum kit components and techniques eg rim • vocal timbres eg falsetto, belt, rap, beat-boxing, scat singing • specific instrumental techniques eg slap bass • specific instrumental effects eg amplification, distortion • specific technological recording techniques eg automatic doubletracking • (ADT) and direct input transformer (DIT).
Tempo, metre and rhythm	• bpm (beats per minute) • mm (metronome marking) • groove • backbeat • syncopation • off-beat • shuffle, swing/swung.

Area of Study 3: Traditional/World

Unfamiliar Music

- **Blues music 1920 – 1950**
  - **Robert Johnson –** *The Complete Collection*
  - **Bessie Smith –** *The Best of Bessie Smith*
  - **Big Bill Broonzy –** *The Anthology*
  - **Blind Willie Mc Tell –** *The Ultimate Blues Collection*
- **Fusion Music incorporating African and/or Caribbean music**
  - **Bob Marley –** *Legend*
  - **Paul Simon –** *Graceland*
- **Contemporary Latin music**
  - **Santana –** *Supernatural*
  - **Buena Vista Social Club –** *Buena Vista Social Club*
  - **Piazolla –** *Libertango*
- **Contemporary Folk music of the British Isles**
  - **Mumford and Sons –** *Sigh no more*
  - **Kate Rusby –** *Little Lights*

Element type	Element
Melody	• blue notes • pentatonic, whole tone, modal • slide/glissando/portamento, pitch bend, appoggiaturas • ostinato • riff • melody–scat • melisma • improvisation
Tonality	• modal pentatonic
Structure	• strophic, verse and chorus, cyclic • call and response • popular song forms • structure – 12/16 bar blues.
Sonority (Timbre)	• generic families of instruments as found in traditional/world music eg steel drums • the use of technology, synthesised and computer-generated sounds, sampling and the use of techniques such as reverb, distortion and chorus • drone • vocal techniques eg falsetto, vibrato, rap.
Texture	• a cappella • imitative • layered/layering.

Tempo, metre and rhythm	• irregular, free • skank • bubble • clave (Bo Diddley type beat) • augmentation, diminution • anacrusis • hemiola • bi-rhythm, cross-rhythm, polyrhythm • shuffle beat • backbeat • syncopation • off-beat • bossa nova • samba • salsa • tango • habanera • danzón • merengue • cha-cha-cha • rumba.

Area of Study 4: Western classical tradition 1910 – present

Unfamiliar Music

- **The orchestral music of Copland**
  - **Rodeo**
  - **Appalachian Spring**
- **British music of Arnold, Britten, Maxwell-Davies and Tavener**
  - **Malcolm Arnold –** *Concerto for Guitar and Orchestra*
  - **Benjamin Britten –** *Peter Grime: 4 Sea Interludes*
    - Ceremony of Carols
  - **Peter Maxwell-Davies –** *Orkney Wedding with Sunshine*
  - **John Tavener –** *The Lamb & The Tyger*
- **The orchestral music of Zoltan Kodaly and Bela Bartok**
  - **Kodaly –** *Hary Janos*
  - **Bartok –** *Concerto for Orchestra*
- **Minimalist music of John Adams, Steve Reich and Terry Riley**
  - **John Adams –** *Shaker Loops*
    - Short Ride in a fast machine
  - **Steve Reich –** *Clapping Music*
  - **Terry Riley –** *In C*

Element type	**Element**
Melody	• ostinato • motifs • melisma.
Harmony	• chromatic • dissonant • pedal.
Tonality	• pentatonic • whole tone • modal • tonal ambiguity.
Sonority (Timbre)	• specific families of instruments • use of technology, synthesised and computer-generated sounds • instrumental techniques eg vamping.
Texture	• drones • imitative • layered/layering.
Tempo, metre and rhythm	• irregular, free • augmentation, diminution • anacrusis • hemiola • rubato • bi-rhythm, cross-rhythm, polyrhythm • syncopation • off-beat.

Physical Education

Paper 1 – Fitness and Body Systems

1 hour 30 minutes (80 marks worth 36%

Topic 1- Applied anatomy and physiology (**CGP** pages 1-14)

Topic 2- Movement analysis (**CGP** pages 15-18)

Topic 3 -Physical training (**CGP** pages 18-34)

Paper 2 –Health and Performance

1 hour 15 minutes (60 marks worth 24%)

Topic 1-Health, fitness and well-being (**CGP** pages 36-44)

Topic 2- Sports Psychology (**CGP** pages 45-49)

Topic 1: Applied anatomy and physiology

Subject content	What students need to learn
1.1 The structure and functions of the musculo-skeletal system	1.1.1 The functions of the skeleton applied to performance in physical activities and sports: protection of vital organs, muscle attachment, joints for movement, platelets, red and white blood cell production, storage of calcium and phosphorus
	1.1.2 Classification of bones: long (leverage), short (weight bearing), flat (protection, broad surface for muscle attachment), irregular (protection and muscle attachment) applied to performance in physical activities and sports
	1.1.3 Structure: cranium, clavicle, scapula, five regions of the vertebral column (cervical, thoracic, lumbar, sacrum, coccyx), ribs, sternum, humerus, radius, ulna, carpals, metacarpals, phalanges (in the hand), pelvis, femur, patella, tibia, fibula, tarsals, metatarsals, phalanges (in the foot), and their classification and use applied to performance in physical activities and sports
	1.1.4 Classification of joints: pivot (neck – atlas and axis), hinge (elbow, knee and ankle), ball and socket (hip and shoulder), condyloid (wrist), and their impact on the range of possible movements
	1.1.5 Movement possibilities at joints dependent on joint classification: flexion, extension, adduction, abduction, rotation, circumduction, plantar-flexion, dorsi-flexion and examples of physical activity and sporting skills and techniques that utilise these movements in different sporting contexts
	1.1.6 The role of ligaments and tendons, and their relevance to participation in physical activity and sport
	1.1.7 Classification and characteristics of muscle types: voluntary muscles of the skeletal system, involuntary muscles in blood vessels, cardiac muscle forming the heart, and their roles when participating in physical activity and sport
	1.1.8 Location and role of the voluntary muscular system to work with the skeleton to bring about specific movement during physical activity and sport, and the specific function of each muscle (deltoid, biceps, triceps, pectoralis major, latissimus dorsi, external obliques, hip flexors, gluteus maximus, quadriceps, hamstrings, gastrocnemius and tibialis anterior)
	1.1.9 Antagonistic pairs of muscles (agonist and antagonist) to create opposing movement at joints to allow physical activities (e.g. gastrocnemius and tibialis anterior acting at the ankle -plantar flexion to dorsi flexion; and quadriceps and hamstrings acting at the knee, biceps and triceps acting at the elbow, and hip flexors and gluteus maximus acting at the hip – all flexion to extension)
	1.1.10 Characteristics of fast and slow twitch muscle fibre types (type I, type IIa and type IIx) and how this impacts on their use in physical activities
	1.1.11 How the skeletal and muscular systems work together to allow participation in physical activity and sport
1.2 The structure and functions of the cardio-	1.2.1 Functions of the cardiovascular system applied to performance in physical activities: transport of oxygen, carbon dioxide and nutrients, clotting of open wounds, regulation of body temperature

respiratory system	1.2.2	Structure of the cardiovascular system: atria, ventricles, septum, tricuspid, bicuspid and semi-lunar valves, aorta, vena cava, pulmonary artery, pulmonary vein, and their role in maintaining blood circulation during performance in physical activity and sport
	1.2.3	Structure of arteries, capillaries and veins and how this relates to function and importance during physical activity and sport in terms of blood pressure, oxygenated, deoxygenated blood and changes due to physical exercise
	1.2.4	The mechanisms required (vasoconstriction, vasodilation) and the need for redistribution of blood flow (vascular shunting) during physical activities compared to when resting
	1.2.5	Function and importance of red and white blood cells, platelets and plasma for physical activity and sport
	1.2.6	Composition of inhaled and exhaled air and the impact of physical activity and sport on this composition
	1.2.7	Vital capacity and tidal volume, and change in tidal volume due to physical activity and sport, and the reasons that make the change in tidal volume necessary
	1.2.8	Location of main components of respiratory system (lungs, bronchi, bronchioles, alveoli, diaphragm) and their role in movement of oxygen and carbon dioxide into and out of the body
	1.2.9	Structure of alveoli to enable gas exchange and the process of gas exchange to meet the demands of varying intensities of exercise (aerobic and anaerobic)
	1.2.10	How the cardiovascular and respiratory systems work together to allow participation in physical activity and sport
1.3 Anaerobic and aerobic exercise	1.3.1	Energy: the use of glucose and oxygen to release energy aerobically with the production of carbon dioxide and water, the impact of insufficient oxygen on energy release, the by- product of anaerobic respiration (lactic acid)
	1.3.2	Energy sources: fats as a fuel source for aerobic activity, carbohydrates as a fuel source for aerobic and anaerobic activity
1.4 The short- and long-term effects of exercise	1.4.1	Short-term effects of physical activity and sport on lactate accumulation, muscle fatigue, and the relevance of this to the player/performer
	1.4.2	Short-term effects of physical activity and sport on heart rate, stroke volume and cardiac output, and the importance of this to the player/performer
	1.4.3	Short-term effects of physical activity and sport on depth and rate of breathing, and the importance of this to the player/performer
	1.4.4	How the respiratory and cardiovascular systems work together to allow participation in, and recovery from, physical activity and sport: oxygen intake into lungs, transfer to blood and transport to muscles, and removal of carbon dioxide
	1.4.5	Long-term effects of exercise on the body systems – see 3.4.1–3.4.4
	1.4.6	Interpretation of graphical representations of heart rate, stroke volume and cardiac output values at rest and during exercise

Topic 2: Movement analysis

Subject content	What students need to learn
2.1 Lever systems, examples of their use in activity and the mechanical advantage they provide in movement	2.1.1 First, second and third class levers and their use in physical activity and sport
	2.1.2 Mechanical advantage and disadvantage (in relation to loads, efforts and range of movement) of the body's lever systems and the impact on sporting performance
2.2 Planes and axes of movement	2.2.1 Movement patterns using body planes and axes: sagittal, frontal and transverse plane and frontal, sagittal, vertical axes applied to physical activities and sporting actions
	2.2.2 Movement in the sagittal plane about the frontal axis when performing front and back tucked or piked somersaults
	2.2.3 Movement in the frontal plane about the sagittal axis when performing cartwheels
	2.2.4 Movement in the transverse plane about the vertical axis when performing a full twist jump in trampolining

Topic 3: Physical training

Subject content	What students need to learn
3.1 The relationship between health and fitness and the role that exercise plays in both	3.1.1 Definitions of fitness, health, exercise and performance and the relationship between them
3.2 The components of fitness, benefits for sport and how fitness is measured and improved	3.2.1 Components of fitness and the relative importance of these components in physical activity and sport: cardiovascular fitness (aerobic endurance), strength, muscular endurance, flexibility, body composition, agility, balance, coordination, power, reaction time, and speed
	3.2.2 Fitness tests: the value of fitness testing, the purpose of specific fitness tests, the test protocols, the selection of the appropriate fitness test for components of fitness and the rationale for selection
	3.2.3 Collection and interpretation of data from fitness test results and analysis and evaluation of these against normative data tables
	3.2.4 Fitness tests for specific components of fitness: cardiovascular fitness – Cooper 12-minute tests (run, swim), Harvard Step Test; agility – Illinois agility run test; strength – grip dynamometer; muscular endurance – one- minute sit-up, one-minute press-up; speed – 30 m sprint; power – vertical jump; flexibility – sit and reach
	3.2.5 How fitness is improved – see section 3.3.1–3.3.3

3.3 The principles of training and their application to personal exercise/ training programmes	3.3.1	Planning training using the principles of training: individual needs, specificity, progressive overload, FITT (frequency, intensity, time, type), overtraining, reversibility, thresholds of training (aerobic target zone: 60–80% and anaerobic target zone: 80%–90% calculated using simplified Karvonen formula, i.e. (220) – (your age) = MaxHR; (MaxHR) x (60% to 80%) = aerobic training zone; (MaxHR) x (80% to 90%) = anaerobic training zone)
	3.3.2	Factors to consider when deciding the most appropriate training methods and training intensities for different physical activities and sports (fitness/sport requirements, facilities available, current level of fitness)
	3.3.3	The use of different training methods for specific components of fitness, physical activity and sport: continuous, Fartlek, circuit, interval, plyometrics, weight/resistance. Fitness classes for specific components of fitness, physical activity and sport (body pump, aerobics, Pilates, yoga, spinning). The advantages and disadvantages of different training methods
3.4 The long-term effects of exercise	3.4.1	Long-term effects of aerobic and anaerobic training and exercise and the benefits to the muscular-skeletal and cardio-respiratory systems and performance
	3.4.2	Long-term training effects: able to train for longer and more intensely
	3.4.3	Long-term training effects and benefits: for performance of the muscular-skeletal system: increased bone density, increased strength of ligaments and tendons, muscle hypertrophy, the importance of rest for adaptations to take place, and time to recover before the next training session
	3.4.4	Long-term training effects and benefits: for performance of the cardio-respiratory system: decreased resting heart rate, faster recovery, increased resting stroke volume and maximum cardiac output, increased size/strength of heart, increased capilliarisation, increase in number of red blood cells, drop in resting blood pressure due to more elastic muscular wall of veins and arteries, increased lung capacity/volume and vital capacity, increased number of alveoli, increased strength of diaphragm and external intercostal muscles
3.5 How to optimise training and prevent injury	3.5.1	The use of a PARQ to assess personal readiness for training and recommendations for amendment to training based on PARQ
	3.5.2	Injury prevention through: correct application of the principles of training to avoid overuse injuries; correct application and adherence to the rules of an activity during play/participation; use of appropriate protective clothing and equipment; checking of equipment and facilities before use, all as applied to a range of physical activities and sports

	3.5.3	Injuries that can occur in physical activity and sport: concussion, fractures, dislocation, sprain, torn cartilage and soft tissue injury (strain, tennis elbow, golfers elbow, abrasions)
	3.5.4	RICE (rest, ice, compression, elevation)
	3.5.5	Performance-enhancing drugs (PEDs) and their positive and negative effects on sporting performance and performer lifestyle, including anabolic steroids, beta blockers, diuretics, narcotic analgesics, peptide hormones (erythropoietin (EPO), growth hormones (GH)), stimulants, blood doping
3.6 Effective use of warm up and cool down	3.6.1	The purpose and importance of warm-ups and cool downs to effective training sessions and physical activity and sport
	3.6.2	Phases of a warm-up and their significance in preparation for physical activity and sport
	3.6.3	Activities included in warm-ups and cool downs

Topic 4: Use of data

Subject content	What students need to learn	
In this topic students will develop knowledge and understanding of data analysis in relation to key areas of physical activity and sport, through this content and linking it to other topics.		
4.1 Use of data	4.1.1	Develop knowledge and understanding of data analysis in relation to key areas of physical activity and sport
	4.1.2	Demonstrate an understanding of how data is collected in fitness, physical and sport activities – using both qualitative and quantitative methods
	4.1.3	Present data (including tables and graphs)
	4.1.4	Interpret data accurately
	4.1.5	Analyse and evaluate statistical data from their own results and interpret against normative data in physical activity and sport

Paper 2: Health and Performance

Topic 1: Health, fitness and wellbeing

Subject content	What students need to learn
In this topic students will develop knowledge and understanding of the benefits of participating in physical activity and sport to health, fitness and wellbeing through the following content.	
1.1 Physical, emotional and social health, fitness and wellbeing	1.1.1 Physical health: how increasing physical ability, through improving components of fitness can improve health/reduce health risks and how these benefits are achieved
	1.1.2 Emotional health: how participation in physical activity and sport can improve emotional/psychological health and how these benefits are achieved
	1.1.3 Social health: how participation in physical activity and sport can improve social health and how these benefits are achieved
	1.1.4 Impact of fitness on wellbeing: positive and negative health effects
	1.1.5 How to promote personal health through an understanding of the importance of designing, developing, monitoring and evaluating a personal exercise programme to meet the specific needs of the individual
	1.1.6 Lifestyle choices in relation to: diet, activity level, work/ rest/sleep balance, and recreational drugs (alcohol, nicotine)
	1.1.7 Positive and negative impact of lifestyle choices on health, fitness and wellbeing, e.g. the negative effects of smoking (bronchitis, lung cancer)
1.2 The consequences of a sedentary lifestyle	1.2.1 A sedentary lifestyle and its consequences: overweight, overfat, obese, increased risk to long-term health, e.g. depression, coronary heart disease, high blood pressure, diabetes, increased risk of osteoporosis, loss of muscle tone, posture, impact on components of fitness
	1.2.2 Interpretation and analysis of graphical representation of data associated with trends in physical health issues
1.3 Energy use, diet, nutrition and hydration	1.3.1 The nutritional requirements and ratio of nutrients for a balanced diet to maintain a healthy lifestyle and optimise specific performances in physical activity and sport
	1.3.2 The role and importance of macronutrients (carbohydrates, proteins and fats) for performers/players in physical activities and sports, carbohydrate loading for endurance athletes, and timing of protein intake for power athletes
	1.3.3 The role and importance of micronutrients (vitamins and minerals), water and fibre for performers/players in physical activities and sports
	1.3.4 The factors affecting optimum weight: sex, height, bone structure and muscle girth

	1.3.5	The variation in optimum weight according to roles in specific physical activities and sports
	1.3.6	The correct energy balance to maintain a healthy weight
	1.3.7	Hydration for physical activity and sport: why it is important, and how correct levels can be maintained during physical activity and sport

Topic 2: Sport psychology

Subject content	What students need to learn	
2.1 Classification of skills (basic/ complex, open/closed)	2.1.1	Classification of a range of sports skills using the open-closed, basic (simple)-complex, and low organisation-high organisation continua
	2.1.2	Practice structures: massed, distributed, fixed and variable
	2.1.3	Application of knowledge of practice and skill classification to select the most relevant practice to develop a range of skills
2.2 The use of goal setting and SMART targets to improve and/or optimise performance 	2.2.1	The use of goal setting to improve and/or optimise performance
	2.2.2	Principles of SMART targets (specific, measureable, achievable, realistic, time-bound) and the value of each principle in improving and/or optimising performance
	2.2.3	Setting and reviewing targets to improve and/or optimise performance
2.3 Guidance and feedback on performance	2.3.1	Types of guidance to optimise performance: visual, verbal, manual and mechanical
	2.3.2	Advantages and disadvantages of each type of guidance and its appropriateness in a variety of sporting contexts when used with performers of different skill levels
	2.3.3	Types of feedback to optimise performance: intrinsic, extrinsic, concurrent, terminal
	2.3.4	Interpretation and analysis of graphical representation of data associated with feedback on performance
2.4 Mental preparation for performance	2.4.1	Mental preparation for performance: warm up, mental rehearsal

Appendix 5: Glossary of key terms

The following list contains all relevant technical vocabulary, terminology and definitions associated with the content for Components 1 and 2. Students will be expected to know and understand these, and other words and definitions, particularly for use in the examination papers. This glossary is not an exhaustive list of key terms and should be used in conjunction with the content for components 1 and 2 to support teaching and learning.

Key term	**Definition**
Aerobic work	Working at a moderate intensity so that the body has time to utilise oxygen for energy production, allowing the body to work for a continuous period, e.g. long-distance events, for the duration of a match
Anaerobic work	Working at a high intensity without oxygen for energy production, therefore limited energy so work period will be short, e.g. sprinting up the wing in a football match
Antagonistic muscle pairs	Pairs of muscles that work together to bring about movement. As one muscle contracts (agonist) the other relaxes (antagonist). For example, the biceps and triceps. The triceps relax to allow the biceps to contract to flex the arm at the elbow. Roles are reversed to extend the arm at the elbow
Axis	A line around which the body/a body part can turn
Basic skill	A simple skill requiring little concentration to execute
Closed skill	A skill performed in a predictable environment, e.g. a player taking a penalty
Complex skill	A skill requiring a lot of attention/concentration
Distributed practice	Intervals between skill practice in a training session for rest or mental rehearsal
Exercise	A form of physical activity done to maintain or improve health and/or fitness; it is not competitive sport
Energy balance	This is the basis of weight control. For body weight to remain constant energy input (via food) must equal energy expenditure
Feedback	Information received during or after a performance about the performance
Fitness	The ability to meet the demands of the environment
Fixed practice	Repeatedly practising a whole skill within a training session
Frontal axis	Imaginary line passing horizontally through the body from left to right, allows flexion and extension
Frontal plane	Imaginary line dividing the body vertically from front to back. Movement occurs in the frontal plane about the sagittal axis, e.g. when performing a star jump
Guidance	Information to aid the learning of a skill. This information can be given visually, e.g. through demonstrations; verbally, e.g. by the coach explaining how to perform the technique; manually, e.g. by physically moving a performer into the correct position; and mechanically, e.g. by using a harness in trampolining
Health	A state of complete emotional, physical and social wellbeing, and not merely the absence of disease and infirmity
High organisation skill	A skill that cannot be broken down easily and practised separately because the phases of the skill are closely linked, e.g. cartwheel, golf swing

Hydration	Being hydrated means the body has the correct amount of water in cells, tissues and organs to function correctly. The average recommended daily intake is 2.5 litres of water for men and 2 litres for women
Lactic acid	A by-product of energy production. Formed when the body is exercising anaerobically at high intensity
Lactate accumulation	When lactate levels in the blood/muscle rise due to increased work intensity, e.g. moving from aerobic to anaerobic exercise
Lifestyle choice	The choices we make about how we live and behave that impact on our health
Low organisation skill	A basic skill that can be broken down easily into different phases so each part can be practised separately, e.g. tennis serve, front crawl swimming stroke
Macronutrient	A type of food required in relatively large amounts in the diet, e.g. carbohydrates and fats
Massed practice	Practice that occurs without rest between trials
Micronutrient	A type of food required in relatively small quantities in the diet, e.g. vitamins and minerals
Mechanical advantage	2nd class levers allow a large load to be moved with a relatively small amount of muscular effort
Mechanical disadvantage	3rd class levers cannot lift as heavy loads, with the same amount of effort, as 2nd class levers due to the position of the effort and load from the fulcrum
Muscle fibre types	Muscle fibres make up the skeletal muscle. The different fibre types are type I, type IIa and type IIx
Open skill	Skills performed in an unpredictable environment, where the performer has to react and adjust due to the changing nature of the situation, for example a player trying to pass the ball to a team mate who is trying to get free from the opposition
Optimum weight	Refers to the weight someone should be, on average, based on their sex, height, bone structure and muscle girth
Sagittal axis	Imaginary line passing horizontally through the body from front to back, allows abduction and adduction
Sagittal plane	Imaginary line dividing the body vertically into left and right sides
Sedentary lifestyle	Where there is little, irregular or no physical activity
Sportsmanship	Qualities of fairness, following the rules, being gracious in defeat or victory
Transverse plane	Imaginary line dividing the body horizontally from front to back
Type I	Also known as slow-twitch muscle fibres, they are suited to low intensity aerobic work, for example marathon running, as they can be used for a long period of time without fatiguing
Type IIa	These are fast-twitch muscle fibres, they are used in anaerobic work, but can be improved through endurance training to increase their resistance to fatigue
Type IIx (previously type IIb)	These are fast-twitch muscle fibres that are used in anaerobic work and can generate much greater force than the other fibre types, but fatigue quickly. They are beneficial to 100 m sprinters

Variable practice	A training session that includes frequent changes of task so that the skill can be repeated in different situations
Vascular shunting	Process that increases blood flow to active areas during exercise by diverting blood away from inactive areas. This is achieved by vasoconstriction and vasodilation
Vasoconstriction	Narrowing of the internal diameter (lumen) of the blood vessel to decrease blood flow
Vasodilation	Widening of the internal diameter (lumen) of the blood vessel to increase blood flow
Vertical axis	Imaginary line passing vertically through the body, allows rotation of the body in an upright position

Philosophy & Ethics

Area of Study	Detail for the Topic
Revelation	○ What is revelation? ○ How is revelation shown through scripture? ○ In what way is Jesus the final revelation of God for Christians?
Religious experiences	○ What is a religious experience? ○ How do religious experiences affect belief in God? ○ What are the arguments for and against religious experiences?
Cosmology	○ What is the cosmological argument? ○ What are the strengths of this argument? ○ What are the weaknesses of this argument?
Miracles	○ What are miracles? ○ How do Miracles affect belief in God?

Relationships in 21st Century

Area of Study	Detail for the Topic
Divorce	○ What is divorce? ○ What does the Catholic Church teach about divorce? Why? ○ What does the Bible teach about divorce?
Contraception	○ What is contraception? ○ What does the Church teach about contraception? ○ What are the arguments for and against the use of artificial contraception?
Prejudice and discrimination	○ What is the role of women in the Catholic Church? ○ What is the role of women in the Church of England? ○ What are the arguments for and against women priests? ○ What are the relevant sources of authority?
The Family	○ What are the types of family? ○ Why is family important for Catholics? ○ What does it mean to call the family 'the domestic Church'?

Judaism - Beliefs

Area of Study	Detail for the Topic
The Almighty	○ What is the Almighty? ○ Why do Jews have many names for God? ○ What are the characteristics of the Almighty?
Sanctity of Life	○ What is Pikuach Nefesh? ○ Why is it important? ○ How does it affect Jewish life?
The Covenants	○ Who is Abraham? ○ What covenant did he make? ○ Why is it important for Jews today?
The Covenants	○ Who is Moses? ○ What covenant did he make? ○ Why is it important for Jews today? ○ Why is the decalogue important today?

Judaism – Practices

Area of Study	Detail for the Topic
Prayer	○ What prayers do Jews say? ○ What is the purpose of prayer for Jews?
The Kashrut	○ What are the Jewish food laws? ○ Why do Jews follow them? ○ What problems do they present for modern life?
Festivals	○ What are the pilgrim festivals? ○ What do Jews do during these festivals? ○ Why are they important?
Rituals	○ What is a ritual? ○ What rituals do Jews observe when babies are born? ○ Why are these rituals important – are they linked to the covenants?

Spanish Revision Topics

Theme 1: Identity and culture

Theme 1: Identity and culture covers the following four topics with related sub-topics shown as bullet points:

Topic 1: Me, my family and friends

- Relationships with family and friends
- Marriage/partnership

Topic 2: Technology in everyday life

- Social media
- Mobile technology

Topic 3: Free-time activities

- Music
- Cinema and TV
- Food and eating out
- Sport

Topic 4: Customs and festivals in Spanish-speaking countries/communities

Theme 2: Local, national, international and global areas of interest

Theme 2: Local, national, international and global areas of interest covers the following four topics with related sub-topics shown as bullet points:

Topic 1: Home, town, neighbourhood and region

Topic 2: Social issues

- Charity/voluntary work
- Healthy/unhealthy living

Topic 3: Global issues

- The environment
- Poverty/homelessness

Topic 4: Travel and tourism (Holidays)

Theme 3: Current and future study and employment

Theme 3: Current and future study and employment covers the following four topics:

Topic 1: My studies

Topic 2: Life at school/college

Topic 3: Education post-16

Topic 4: Jobs, career choices and ambitions

English Literature

(Year 11 Revision List: this is the minimum you need to do)!

Shakespeare: Macbeth

- You must revise your notes from last year on the whole play.
- Try to focus on the characters of both **Lady Macbeth** and **Macbeth**, their **relationship** and how they are presented by Shakespeare.

Re-read the extracts of these scenes that you studied in class:

Act 1

- ✓ Act 1, Scene 5
- ✓ Act 1, Scene 7

Act 2

- ✓ Act 2, Scene 2
- ✓ Act 2, Scene 3

Act 3

- ✓ Act 3, Scene 1
- ✓ Act 3, Scene 2
- ✓ Act 3, Scene 4

Act 5

- ✓ Act 5, Scene 1
- ✓ Act 5, Scene 5

Learn and explode the following quotations:

- Macbeth – “My dearest partner of greatness”
- Lady Macbeth – “too full o’the milk of human kindness”
- Lady Macbeth - “Come you spirits that tend on mortal thoughts, unsex me here…”
- Lady Macbeth – “I may pour my spirits in thine ear”
- Lady Macbeth – “Great Glamis! Worthy Cawdor!”
- Lady Macbeth – “Look like the innocent flower but be the serpent under’t”
- Lady Macbeth - “Have pluck'd my nipple from his boneless gums, And dash'd the brains out, had I so sworn as you Have done to this.”
- Lady Macbeth – ‘When you durst do it, then you were a man”
- Macbeth – “Sleep no more, Macbeth does murder sleep”
- Macbeth – “Will all great Neptune’s ocean wash this blood clean from my hand?”
- Lady Macbeth - "My hands are of your colour, but I shame, To wear a heart so white"
- Lady Macbeth - “A little water clears us of this deed.”
- Macbeth - "Be innocent of the knowledge, dearest chuck”
- Lady Macbeth – “Are you a man?”
- Lady Macbeth - "My worthy lord, / Your noble friends do lack you"
- Lady Macbeth - “Out, damned spot! out, I say!”
- Macbeth – “She should have died hereafter”

Modern Text: An Inspector Calls

- Revise **Gerald** and think about his social responsibility and relationships with others.
- Revise the theme of **unfairness in society** and the characters that could be used to illustrate this.
- Learn key quotations:

Gerald:

- 'I don't come into this suicide business.'
- 'It's what happened to her after she left Mr Birling' work that's important.'
- 'You couldn't have done anything else'
- 'Yes, I think you were. I know we'd have done the same thing. Don't look like that Sheila.'
- 'Mrs Birling, the inspector knows all that. And I don't think it's a very good idea to remind him'
- 'Well, there's nothing to settle as far as I'm concerned. I've never known an Eva Smith'
- 'I'm sorry, Sheila. But it was all over and done with, last summer. I hadn't set eyes on the girl for at least six months. I don't come into this suicide business'
- 'Sorry- I- well, I've suddenly realized- taken it in properly- that she's dead'
- 'the girl saw me looking at her and then gave me a glance that was nothing less than a cry for help'
- 'She was young and pretty and warm hearted – and intensely grateful. I became at once the most important person in her life – you understand?'
- 'we can keep it from him'
- 'I didn't feel about her as she felt about me'
- 'I'm rather more – upset – by this business than I probably appear to be'
- 'had some affection for her and made her happy for a time.'
- 'Everything's all right now Sheila. (Holds up the ring.) What about this ring?'

Unfairness:

- "a man has to make his own way"
- "Well it's my duty to keep labour costs down."
- "These girls aren't cheap labour"
- "pink and intimate" to "brighter and harder"
- "…I've got to cover this up as soon as I can."
- "…threatened to make a row…"
- "…pretty good sport…"
- "…I have gathered he does drink pretty hard..."
- "She was - very gallant – about it."
- "It's a free country, I told them."
- "You were the wonderful fairy prince. You must have adored it Gerald."
- "I was in a state where a chap easily turns nasty"
- "We are members of one body. We are responsible for each other"
- "Everything's all right now, Sheila. Now what about this ring?"

19th Century: A Christmas Carol

- Re-read the book.
- Watch the film.
- Focus your revision on **joy and happiness** in the novella. Make notes on these key areas and create flash cards that cover these areas.

Learn the following:

- “As solitary as an oyster.”
- “As hard and sharp as flint”
- “External heat and cold had little influence on Scrooge.”
- “If they would rather die… they had better do it, and decrease the surplus population.”
- Marley’s Ghost: “I am here to-night to warn you, that you have yet a chance and hope of escaping my fate.”
- “There was a boy singing a Christmas Carol at my door last night. I should like to have given him something: that’s all.”
- Fezziwig - “…shaking hands with every person individually as he or she went out, wished him or her a Merry Christmas.”
- “A positive light appeared to issue from Fezziwig’s calves. They shone in every part of the dance like moons.”
- “The happiness he gives, is quite as great as if it costs a fortune.”
- “Another idol has displaced me.”
- “There was nothing very cheerful in the climate or the town, and yet was there an air of cheerfulness abroad.”
- “There never was such a goose. Bob said he didn’t believe there ever was such a goose cooked.”
- “it was a sufficient dinner for the whole family”
- ‘”Mr Scrooge!” said Bob; “I’ll give you Mr Scrooge, the Founder of the Feast!”’
- “The boy is ignorance and the girl is want.”
- “This was the end of it, you see! He frightened everyone away from him when he was alive, to profit us when he was dead!”
- “I will honour Christmas in my heart, and try to keep it all the year. I will live in the Past, Present, and the Future. The Spirits of all Three shall strive within me”
- “light as a feather”, “happy as an angel”, “merry as a school boy”
- “No fog, not mist; clear, bright, jovial”
- “Golden sunlight; Heavenly sky; sweet fresh air; merry bells.”
- “His own heart laughed”
-

Poetry: Power and Conflict

Revise: **Ozymandias, London, My Last Duchess, The Emigree** and **Exposure**. You need to know quotations for these poems (avoid learning quotations from ‘London’ but you must know the poem well).

Unseen Poetry

- Revise your success criteria for answering the Unseen Question
- Revise all poetic methods
- Complete past papers
- Practise analytical writing:
    - Method
    - Quotation
    - Explain
    - Zoom in x 2
    - Poet’s purpose.

English Language

Paper 1 and 2:

Section A

- Complete practice questions from past papers – links are on the website
- Revise all success criteria for all Section A questions.
- Revise structural techniques and language techniques.
- Revise MR PASSO - identifying and analysing
- Revise RAPTORS - identifying and analysing

Section B

- Complete practice questions from past papers – links are on the website
- Revise your success criteria for writing.
- Learn sophisticated vocabulary for writing
- Practice writing your story/description that you can adapt in the Paper 1 exam

Engineering Mock Revision List

Learning Outcome 1: Know about properties and uses of engineering materials

Types of engineering materials:

- Metals
- Ferrous metals and alloys
- Polymers
- Thermoplastics
- Thermosetting plastics
- Composite
- Smart materials

Uses of specific materials:

- Ferrous and non-ferrous metals and alloys – (e.g. cast iron for machine bases; bronze for boat propellers)
- Thermoplastics – (e.g. ABS for appliance casings)
- Thermosetting plastics – (e.g. phenol-formaldehyde for heat resistant saucepan handles)
- Ceramics – (e.g. tungsten carbide for cutting tool tips)
- Composites – (e.g. carbon fibre for bicycle frames)
- Smart materials – (e.g. shape memory alloy in alarm systems)

Learning Outcome 2: Understand engineering processes and their application

Plastic Moulding Processes:

- Injection moulding
- Blow moulding

Safe use of tools and equipment:

- Features and controls of machines
- Appropriate use of Personal Protective Equipment (PPE)
- Safety
- Precautions

Machine processes (material removal)

- Drilling
- Turning
- Milling
- Grinding

Basic engineering processes:

- Material removal
- Sawing
- Filing
- Threading

Learning Outcome 3: Know about developments in engineering processes

Applications of computer-controlled production processes

- Computer Numerical Control (CNC) machining processes
- CNC lathes and milling/router machines
- Multi-axis machining centres
- Water jet cutting
- Punching machines

Learning Outcome 4: Understand the impact of modern technologies on engineering production

The impact of modern technologies in engineering production:

- Automation
- Output
- Quality
- Workforce
- Costs

Digital communications:

- Uses in research and development
- Computer Aided Design (CAD)
- Electronic communication of drawings
- Video conferencing

Global manufacturing:

- Global supply chain (e.g. proximity of skills base and/or raw materials)
- Business benefits (e.g. changing global economies)
- Standardisation of processes and procedures

Maths – Foundation and Higher

Year 11 Foundation Topic Checklist

Year 11 Foundation	Topic	Topic Outcomes			
15. Quadratic equations and Graphs	**15.1 Expanding double brackets**	• Multiply double brackets. • Recognise quadratic expressions. • Square single brackets.			
	15.2 Plotting quadratic graphs	• Plot graphs of quadratic functions. • Recognise a quadratic function. • Use quadratic graphs to solve problems.			
	15.3 Using quadratic graphs	• Solve quadratic equations ax2 + bx + c = 0 using a graph. • Solve quadratic equations ax2 + bx + c = k • Using a graph.			
	15.4 Factorising quadratic expressions	• Factorise quadratic expressions.			
	15.5 Solving quadratic equations algebraically	• Solve quadratic functions algebraically.			
Year 11 Foundation	**Topic**	**Topic Outcomes**			
17. Perimeter, Area and Volume 2	**17.1 Circumference of a circle 1**	• Calculate the circumference of a circle. • Solve problems involving the circumference of a circle.			
	17.2 Circumference of a circle 2	• Calculate the circumference and radius of a circle. • Work out percentage error intervals.			
	17.3 Area of a circle	• Work out the area of a circle. • Work out the radius or diameter of a circle. • Solve problems involving the area of a circle. • Give answers in terms of π.			
	17.4 Semicircles and sectors	• Understand and use maths language for circles and perimeters. • Work out areas of semicircles and quarter circle and perimeters. • Solve problems involving sectors of circles.			
	17.5 Composite 2D shapes and cylinders	• Solve problems involving areas and perimeters of 2D shapes. • Work out the volume and surface area of cylinders.			
	17.6 Pyramids and cones	• Work out the volume of a pyramid. • Work out the surface area of a pyramid. • Work out the volume of a cone. • Work out the surface area of a cone.			
	17.7 Spheres and composite solids	• Work out the volume of a sphere. • Work out the surface area of a sphere. • Work out the volume and surface area of composite solids.			
Year 11 Foundation	**Topic**	**Topic Outcomes**			
18. Fractions, Indices and Standard form	**18.1 Multiplying and dividing fractions**	• Multiply and divide mixed numbers and fractions.			
	18.2 The laws of indices	• To know and use the laws of indices.			
	18.3 Writing large numbers in standard form	• Write large numbers in standard form. • Convert large numbers from standard form into ordinary numbers.			
	18.4 Writing small numbers in standard form	• Write small numbers in standard form. • Convert numbers from standard form with negative powers of ordinary numbers			
	18.5 Calculating with standard form	• To multiply and divide numbers in standard form. • To add and subtract numbers in standard form.			
Year 11 Foundation	**Topic**	**Topic Outcomes**			
19. Congruence, Similarity and Vectors	**19.1 Similarity and enlargement**	• Understand similarity. • Use similarity to solve angle problems.			
	19.2 More similarity	• Find the scale factor of an enlargement. • Use similarity to solve problems.			
	19.3 Using similarity	• Understand the similarity of regular polygons. • Calculate perimeters of similar shapes.			
	19.4 Congruence 1	• Recognise congruent shapes. • Use congruence to work out unknown angles.			
	19.5 Congruence 2	• Use congruence to work out unknown sides.			
	19.6 Vectors 1	• Add and subtract vectors. • Find the resultant of two vectors.			
	19.7 Vectors 2	• Subtract vectors. • Find multiples of a vector.			
Year 11 Foundation	**Topic**	**Topic Outcomes**			
20. More Algebra	**20.1 Graphs of cubic and reciprocal functions**	• Draw and interpret graphs of cubic functions. • Draw and interpret graphs of y = 1/x.			
	20.2 Non-linear graphs	• Draw and interpret non-linear graphs to solve problems.			
	20.3 Solving simultaneous equations graphically	• Solve simultaneous equations by drawing a graph. • Write and solve simultaneous equations.			
	20.4 Solving simultaneous equations algebraically	• Solve simultaneous equations algebraically.			
	20.5 Rearranging formulae	• Change the subject of a formula.			
	20.6 Proof	• Identify expressions, equations, formulae and identities. • Prove results using algebra.			

Year 10/11 Higher	Topic	Topic Outcomes			
14 Multiplicative reasoning	**14.1 Growth and decay**	• Find an amount after repeated percentage changes. • Solve growth and decay problems.			
	14.2 Compound measures	• Calculate rates. • Convert between metric speed measures.			
	14.3 More compound measures	• Solve problems involving compound measures.			
	14.4 Ratio and proportion	• Use relationships involving ratio. • Use direct and indirect proportion.			
Year 11 Higher	**Topic**	**Topic Outcomes**			
15. Equations and Graphs	**15.1 Solving simultaneous equations graphically**	• Solve simultaneous equations graphically.			
	15.2 Representing inequalities graphically	• Represent inequalities on graphs. • Interpret graphs of inequalities.			
	15.3 Graphs of quadratic functions	• Recognise and draw quadratic functions.			
	15.4 Solving quadratic equations graphically	• Find approximate solutions to quadratic equations graphically. • Solve quadratic equations using an iterative process.			
	15.5 Graphs of cubic functions	• Find the roots of cubic equations. • Sketch graphs of cubic functions. • Solve cubic equations using an iterative process.			
Year 11 Higher	**Topic**	**Topic Outcomes**			
16. Circle Theorems	**16.1 Radii and chords**	• Solve problems involving angles, triangles and circles. • Understand and use facts about chords and their distance from the centre of a			
	16.2 Tangents	• Understand and use facts about tangents at a point and from a point. • Give reasons for angle and length calculations involving tangents.			
	16.3 Angles in circles 1	• Understand, prove and use facts about angles subtended at the centre and the circumference of circles.			
	16.4 Angles in circles 2	• Understand, prove and use facts about angles subtended at the circumference of a circle.			
	16.5 Applying circle theorems	• Solve angle problems using circle theorems. • Give reasons for angle sizes using mathematical language. • Find the equation of the tangent to a circle at a given point.			
Year 11 Higher	**Topic**	**Topic Outcomes**			
17. More Algebra	**17.1 Rearranging formulae**	• Change the subject of a formula where the power of the subject appears. • Change the subject of a formula where the subject appears twice.			
	17.2 Algebraic fractions	• Add and subtract algebraic fractions. • Multiply and divide algebraic fractions. • Change the subject of a formula involving fractions where all the variables are in			
	17.3 Simplifying algebraic fractions	• Simplify algebraic fractions.			
	17.4 More algebraic fractions	• Add and subtract more complex algebraic fractions. • Multiply and divide more complex algebraic fractions.			
	17.5 Surds	• Simplify expressions involving surds. • Expand expressions involving surds. • Rationalise the denominator of a fraction.			
	17.6 Solving algebraic fraction equations	• Solve equations that involve algebraic fractions.			
	17.7 Functions	• Use function notation. • Find composite functions. • Find inverse functions.			
	17.8 Proof	• Prove a result using algebra.			
Year 11 Higher	**Topic**	**Topic Outcomes**			
18. Vectors and Geometric proof	**18.1 Vectors and vector notation**	• Understand and use vector notation. • Work out the magnitude of a vector.			
	18.2 Vector arithmetic	• Calculate using vectors and represent the solutions graphically. • Calculate the resultant of two vectors.			
	18.3 More vector arithmetic	• Solve problems using vectors. • Use the resultant of two vectors to solve vector problems.			
	18.4 Parallel vectors and collinear points	• Express points as position vectors. • Prove lines are parallel. • Prove points are collinear.			
	18.5 Solving geometric problems	• Solve geometric problems in two dimensions using vector methods. • Apply vector methods for simple geometric proofs.			
Year 11 Higher	**Topic**	**Topic Outcomes**			
19. Proportion and Graphs	**19.1 Direct proportion**	• Write and use equations to solve problems involving direct proportion.			
	19.2 More direct proportion	• Write and use equations to solve problems involving direct proportion. • Solve problems involving square and cubic proportionality.			
	19.3 Inverse proportion	• Write and use equations to solve problems involving inverse proportion. • Use and recognise graphs showing inverse proportion.			
	19.4 Exponential functions	• Recognise graphs of exponential functions. • Sketch graphs of exponential functions.			
	19.5 Non-linear graphs	• Calculate the gradient of a tangent at a point. • Estimate the area under a non-linear graph.			
	19.6 Translating graphs of functions	• Understand the relationship between translating a graph and the change in its function notation.			
	19.7 Reflecting and stretching graphs of functions	• Understand the effect stretching a curve parallel to one of the axes has on its function form. • Understand the effect reflecting a curve in one of the axes has on its function form.			

Science – Biology, Physics and Chemistry

Combined Biology		
Topic	**Bitesize Link**	**Video link**
Paper 1		
B1 Cell biology	Cell biology - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Cell Biology | freesciencelessons
B3 Infection and response	Infection and response - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Infection and Response | freesciencelessons
B4 Bioenergetics	Bioenergetics - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Bioenergetics | freesciencelessons
Paper 2		
B5 Homeostasis and response	Homeostasis and response - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Homeostasis | freesciencelessons
B6 Inheritance, variation and evolution	Ecology - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Inheritance | freesciencelessons
B7 Ecology	Ecology - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Variation and Evolution | freesciencelessons

Combined Physics		
Topic	**Bitesize Link**	**Video link**
Paper 1		
P1 Energy	Energy - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Energy | freesciencelessons
P4 Atomic structure	Atomic structure - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Atomic Structure and Radioactivity | freesciencelessons
Paper 2		
P5 Forces	Forces - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Forces | freesciencelessons
P6 Waves	Waves - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Waves | freesciencelessons

Combined Chemistry		
Topic	**Bitesize Link**	**Video link**
Paper 1		
C1 Atomic structure and the periodic table	Atomic structure and the periodic table - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Atomic Structure and the Periodic Table | freesciencelessons
C2 Bonding, structure, and the properties of matter	Bonding, structure and the properties of matter - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Structure and Bonding | freesciencelessons
C3 Quantitative chemistry	Quantitative chemistry - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Quantitative Chemistry | freesciencelessons
C4 Chemical changes	Chemical changes - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Chemical Changes | freesciencelessons
C5 Energy changes	Energy changes - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Energy Changes | freesciencelessons
Paper 2		
C6 The rate and extent of chemical change	The rate and extent of chemical change - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Rates of Reaction | freesciencelessons
C7 Organic chemistry	Organic chemistry - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Organic Chemistry | freesciencelessons
C8 Chemical analysis	Chemical analysis - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Chemical Analysis | freesciencelessons
C10 Using resources	Using resources - GCSE Combined Science Revision - AQA Trilogy - BBC Bitesize	Resources | freesciencelessons