Topic checklist – GCSE Exams 2026

Friday 1st May (PM)	BTEC DIT

A1 Modern Technologies ☐ Communication technologies ☐ Setting up ad hoc networks (open Wi-Fi, tethering/personal hotspot) ☐ Security issues with open networks ☐ Performance issues with ad hoc networks ☐ Network availability (rural vs city, developed vs developing, infrastructure, mobile coverage, blackspots) ☐ Cloud storage ☐ Access rights ☐ Synchronisation across devices ☐ 24/7 availability ☐ Scalability ☐ Cloud computing ☐ Online applications ☐ Consistent versions ☐ Shared files ☐ Collaboration tools ☐ Platform/service selection ☐ Features and complexity ☐ Paid vs free ☐ Interface design (layout, accessibility, mobile vs desktop) ☐ Available devices ☐ Cloud + traditional systems ☐ Device synchronisation ☐ Online/offline working ☐ Notifications ☐ Organisational implications ☐ Disaster recovery ☐ Data security (location, provider security) ☐ Compatibility ☐ Maintenance ☐ Setup speed ☐ Performance (responsiveness vs complexity, devices, communication technologies)

A2 Impact of Modern Technologies ☐ Modern teams ☐ Global teams ☐ Multicultural ☐ Inclusive ☐ 24/7 working ☐ Flexible working (remote vs office, permanent vs casual) ☐ Managing teams ☐ Collaboration tools ☐ Communication tools ☐ Scheduling and planning tools ☐ Communication with stakeholders ☐ Platforms (websites, social media, email, voice) ☐ Appropriate communication channels (private vs public) ☐ Inclusivity and accessibility ☐ Interface design (layout, font, colour) ☐ Accessibility features (screen readers, alt text, text-to-speech) ☐ Flexible working ☐ Legal obligations for accessibility ☐ Impact on organisations ☐ Infrastructure requirements ☐ Demand on systems ☐ Availability ☐ Data security ☐ Collaboration ☐ Accessibility ☐ Remote working ☐ Infrastructure strain from 24/7 use ☐ Impact on individuals ☐ Flexible working ☐ Choice of working style ☐ Mental wellbeing (loneliness, confidence, control, reduced commuting)

B1 Threats to Data ☐ Reasons for attacks ☐ Fun/challenge ☐ Financial gain ☐ Personal attack ☐ Disruption ☐ Data theft ☐ External threats ☐ Hacking ☐ Malware (virus, worms, botnet, rootkit, Trojan, ransomware, spyware) ☐ Denial of service ☐ Phishing ☐ Pharming ☐ Social engineering ☐ Shoulder surfing ☐ Man-in-the-middle ☐ Internal threats ☐ Accidental data leaks ☐ Intentional data theft ☐ Overriding security ☐ Portable storage ☐ Unsafe downloads/websites ☐ Understanding differences ☐ Internal vs external threats ☐ Phishing vs pharming ☐ Impact of breaches ☐ Data loss ☐ Reputation damage ☐ Financial loss ☐ Reduced productivity ☐ Downtime ☐ Legal consequences

---

B2 Prevention and Management of Threats ☐ User access restriction ☐ Physical security ☐ Passwords ☐ Access levels ☐ Biometrics ☐ Two-factor authentication ☐ Data protection ☐ Firewalls (hardware vs software) ☐ Secure design (hidden input, autocomplete, login settings) ☐ Anti-virus ☐ Device hardening ☐ Backups ☐ Encryption (stored data vs transmitted data) ☐ Identifying weaknesses ☐ Ethical hacking (white/grey hat) ☐ Penetration testing ☐ Analysing system data

---

B3 Policy ☐ Responsibilities ☐ Staff vs organisational responsibilities ☐ Reporting concerns ☐ Communication to staff ☐ Security policies ☐ Password rules ☐ Acceptable use ☐ Device hardening rules ☐ Disaster recovery ☐ Roles ☐ Backup processes ☐ Recovery timeline ☐ Alternative systems ☐ After an attack ☐ Investigate ☐ Respond ☐ Manage ☐ Recover ☐ Analyse and improve policies

---

C1 Responsible Use ☐ Shared data ☐ Benefits and drawbacks ☐ Responsible use ☐ Privacy and legal considerations ☐ Environmental impact ☐ Energy use ☐ E-waste ☐ Rare materials ☐ Sustainable practices (power-saving, reducing printing)

C2 Legal and Ethical ☐ Equal access ☐ Benefits to individuals, organisations and society ☐ Legal requirements ☐ Net neutrality ☐ Impact on organisations ☐ Acceptable use policies ☐ Scope ☐ Assets ☐ Acceptable/unacceptable behaviour ☐ Monitoring ☐ Sanctions ☐ Agreement ☐ Social vs professional use ☐ Social media for business ☐ Impact of personal use on professional life ☐ Data protection principles ☐ Lawful processing ☐ Purpose limitation ☐ Data minimisation ☐ Accuracy ☐ Storage limitation ☐ Data subject rights ☐ Security ☐ Restrictions on international transfer ☐ Legal vs ethical issues ☐ Understanding the difference ☐ Internet data use ☐ Right to be forgotten ☐ Cookies and transactional data ☐ Intellectual property ☐

Importance ☐ Types (copyright, patents, trademarks) ☐ Protection ☐ Legal and ethical use ☐ Criminal use of computers ☐ Unauthorised access ☐ Modification ☐ Malware creation ☐ Malware distribution

D1 Forms of Notation ☐ Types of notation ☐ Data flow diagrams ☐ Flowcharts ☐ System diagrams ☐ Tables ☐ Written information ☐ Interpreting different notations ☐ Creating notations ☐ Data flow diagrams ☐ Information flow diagrams ☐ Flowcharts ☐ Differences between diagram types.

Tuesday 5th May (AM)	**BTEC Health and Social Care**

1 Factors Affecting Health and Wellbeing ☐ Physical factors ☐ Genetic inheritance ☐ Ill health ☐ Disability ☐ Injury ☐ Lifestyle factors ☐ Diet ☐ Exercise ☐ Smoking ☐ Alcohol ☐ Substance misuse ☐ Sleep ☐ Emotional/social factors ☐ Relationships ☐ Family ☐ Friends ☐ Social interaction ☐ Life events ☐ Economic factors ☐ Income ☐ Employment ☐ Housing ☐ Education ☐ Environmental factors ☐ Pollution ☐ Housing conditions ☐ Access to services ☐ Geography ☐ Cultural factors ☐ Religion ☐ Gender roles ☐ Cultural expectations

2 Interpreting Health Indicators ☐ Life expectancy ☐ Infant mortality ☐ Morbidity ☐ Mortality ☐ Physical health indicators ☐ BMI ☐ Nutrition ☐ Fitness levels ☐ Lifestyle data ☐ Smoking rates ☐ Alcohol consumption ☐ Obesity levels ☐ Understanding data ☐ Patterns ☐ Trends ☐ Comparisons between groups

3 Person-Centred Health and Wellbeing Improvement Plans ☐ Person-centred approach ☐ Individual needs ☐ Preferences ☐ Circumstances ☐ Setting targets ☐ Short-term and long-term goals ☐ SMART targets ☐ Identifying needs ☐ Physical ☐ Emotional ☐ Social ☐ Barriers to improvement ☐ Cost ☐ Access ☐ Motivation ☐ Time ☐ Cultural factors ☐ Support methods ☐ Formal support (services, professionals) ☐ Informal support

4 Planning Health and Wellbeing Improvements ☐ Creating a health improvement plan ☐ Identifying priorities ☐ Setting realistic targets ☐ Actions to improve health ☐ Lifestyle changes ☐ Support services ☐ Monitoring progress ☐ Reviewing plans ☐ Measuring success ☐ Adjusting goals

5 Health and Social Care Services ☐ Types of services ☐ Primary care ☐ Secondary care ☐ Tertiary care ☐ Services available ☐ GP ☐ Hospitals ☐ Clinics ☐ Social care services ☐ Role of professionals ☐ Doctors ☐ Nurses ☐ Social workers ☐ Therapists

6 Barriers and Access to Services ☐ Barriers ☐ Physical ☐ Financial ☐ Cultural ☐ Geographical ☐ Language ☐ Overcoming barriers ☐ Transport ☐ Translation services ☐ Awareness ☐ Technology

7 Skills and Attributes of Care Practitioners ☐ Skills ☐ Communication ☐ Listening ☐ Problem-solving ☐ Organisation ☐ Attributes ☐ Empathy ☐ Respect ☐ Patience ☐ Non-judgemental attitude ☐ Values ☐ Promoting dignity ☐ Confidentiality ☐ Equality ☐ Rights

Wednesday 6th May (AM)	**BTEC Enterprise**

1 Promotional Methods ☐ Types of promotion ☐ Advertising ☐ Sponsorship ☐ Product placement ☐ Branding ☐ Public relations ☐ Special offers ☐ Digital promotion ☐ Social media ☐ Websites ☐ Online advertising ☐ Email marketing ☐ Aims of promotion ☐ Inform ☐ Persuade ☐ Remind ☐ Targeting ☐ Identifying target market ☐ Tailoring promotion

2 Factors Influencing Choice of Promotion ☐ Target market ☐ Age ☐ Income ☐ Interests ☐ Location ☐ Budget ☐ Cost of promotion ☐ Affordability ☐ Type of product ☐ New vs existing product ☐ Nature of product ☐ Stage of product life cycle ☐ Introduction ☐ Growth ☐ Maturity ☐ Decline ☐ Competitors ☐ Level of competition ☐ Market conditions

3 Financial Documents ☐ Revenue ☐ Income from sales ☐ Costs ☐ Fixed costs ☐ Variable costs ☐ Total costs ☐ Break-even ☐ Break-even point ☐ Break-even charts ☐ Profit ☐ Profit = revenue – costs

4 Cash Flow ☐ Cash inflows ☐ Money coming into the business ☐ Cash outflows ☐ Money leaving the business ☐ Cash flow forecast ☐ Predicting in and outflows ☐ Cash flow problems ☐ Shortages ☐ Surpluses

5 Financial Calculations ☐ Calculating costs ☐ Fixed, variable, total ☐ Calculating revenue ☐ Price × quantity ☐ Calculating profit ☐ Revenue – total costs ☐ Break-even calculations ☐ Fixed costs ÷ (selling price – variable cost) ☐ Margin of safety ☐ Difference between actual output and break-even

6 Financial Analysis and Interpretation ☐ Interpreting financial data ☐ Profitability ☐ Viability ☐ Identifying financial strengths and weaknesses ☐ Making financial decisions ☐ Pricing ☐ Cost control

7 Factors Affecting Success ☐ Internal factors ☐ Finance ☐ Staff ☐ Business decisions ☐ External factors ☐ Competition ☐ Economic conditions ☐ Trends ☐ Legislation ☐ Impact on enterprise success ☐ Growth

8 Making Business Decisions ☐ Choosing promotion methods based on data ☐ Using financial information to make decisions ☐ Evaluating options ☐ Advantages and disadvantages ☐ Justifying decisions

Thursday 7th May (AM)	**BTEC Sport**

1 Components of Fitness ☐ Physical fitness components ☐ Strength ☐ Muscular endurance ☐ Power ☐ Speed ☐ Aerobic endurance ☐ Flexibility ☐ Body composition ☐ Skill-related fitness ☐ Agility ☐ Balance ☐ Coordination ☐ Reaction time ☐ Linking components of fitness to different sports and activities

2 Fitness Tests ☐ Purpose of fitness testing ☐ Measuring performance ☐ Monitoring progress ☐ Fitness tests ☐ Sit and reach ☐ Illinois agility test ☐ Stork stand ☐ Standing long jump ☐ 1-minute sit-up ☐ Cooper run ☐ 30m sprint ☐ Ruler drop test ☐ Conducting tests ☐ Equipment ☐ Procedure ☐ Recording results ☐ Interpreting results ☐ Comparing to norms ☐ Identifying strengths and weaknesses

3 Principles of Training ☐ Principles ☐ Specificity ☐ Overload ☐ Progression ☐ Reversibility ☐ Individual needs ☐ Variation ☐ Rest and recovery ☐ Applying principles to training programmes

4 Training Methods ☐ Continuous training ☐ Interval training ☐ Fartlek training ☐ Circuit training ☐ Weight training ☐ Plyometric training ☐ Linking training methods to fitness components and sport

5 Planning a Training Programme ☐ Setting goals ☐ Short-term and long-term goals ☐ SMART targets ☐ Personal factors ☐ Age ☐ Fitness level ☐ Lifestyle ☐ Medical conditions ☐ Structuring a programme ☐ Warm-up ☐ Main session ☐ Cool down ☐ Selecting appropriate training methods and intensities

6 Monitoring and Reviewing Performance ☐ Monitoring progress ☐ Recording results ☐ Fitness testing ☐ Reviewing performance ☐ Identifying improvements ☐ Adjusting training ☐ Effectiveness of training programm

7 Health and Safety ☐ Safe practice ☐ Correct technique ☐ Use of equipment ☐ Risk assessment ☐ Identifying hazards ☐ Minimising risk ☐ Injury prevention ☐ Warm-up ☐ Cool down ☐ Appropriate training

8 Lifestyle Factors ☐ Diet ☐ Nutrition ☐ Hydration ☐ Sleep and recovery ☐ Substance use ☐ Alcohol ☐ Smoking ☐ Impact of lifestyle on fitness and performance

Thursday 7th May (AM)	**Turkish listening and reading**
Thursday 7th May (PM)	**Citizenship Studies Paper 1**

Theme 3 - Politics and Participation

☐ Democracy and forms of democracy (including representative democracy) ☐ Values of democracy: rights, responsibilities, freedoms, equality, British values e.g. rule of law

☐ British constitution - Uncodified constitution and how it is changing ☐ Power of government ☐ Prime Minister and cabinet ☐ Parliamentary sovereignty ☐ Roles of legislature, opposition, political parties, Monarch, citizens, judiciary, police, Civil Service ☐

☐ Local government structure, roles and services ☐ Councillors and accountability

☐ Devolved government (Scotland, Wales, Northern Ireland) ☐ Distribution of powers between Westminster and devolved administrations ☐ Changing UK relationships ☐ 'English votes for English laws'

☐ Elections ☐ Who can vote and stand ☐ Candidate selection ☐ Voter turnout and apathy ☐ Methods to increase participation

☐ Public finance ☐ Taxation and government spending ☐ Budgeting and managing risk ☐ Debates on spending - welfare, health, education
☐ Voting systems ☐ First Past the Post ☐ Proportional systems ☐ Advantages and disadvantages of voting systems
☐ Parliament ☐ House of Commons and House of Lords ☐ Role of Monarch ☐ Legislative process ☐ Scrutiny (questions, debates, committees) ☐ Roles of MPs, Speaker, whips, frontbench and backbench MPs ☐ Ceremonial roles (e.g. Black Rod)
☐ Government ☐ Formation (majority or coalition) ☐ Role of Prime Minister, cabinet and ministers ☐ Government departments and Civil Service
☐ Political parties ☐ Major UK parties ☐ Key ideological differences
☐ Comparing political systems ☐ One democratic and one non-democratic system ☐ Citizen participation differences
☐ Citizen participation ☐ Voting, campaigning, lobbying, petitions, protests, demonstrations, political parties, volunteering ☐ Role of pressure groups, charities, trade unions
☐ Digital democracy ☐ Role of social media and technology in participation

---

Theme 4 - Active Citizenship
☐ Citizenship action ☐ Taking informed action to create change
☐ Methods of action ☐ Campaigning, volunteering, petitions, letter writing, advocacy, e-media campaigns, community action
☐ Investigation process ☐ Issue identification ☐ Research (primary and secondary) ☐ Considering viewpoints
☐ Planning ☐ Taking action ☐ Evaluation
☐ Skills ☐ Research, analysis, interpretation, planning, teamwork, problem-solving, campaigning, evaluation
☐ Aims and outcomes ☐ Evaluating success, challenges and improvements
☐ Recording investigation ☐ Evidence of research, actions and outcomes
☐ Local, national and global links

Friday 8th May (AM)	**Film Studies Paper 1 – US Film**

Invasion of the Body Snatchers – Film Form, Context, Themes and Genre | ☐ Film Form ☐ Context ☐ Themes ☐ Genre
E.T. the Extra-Terrestrial – Film Form, Context, Themes and Genre | ☐ Film Form ☐ Context ☐ Themes ☐ Genre
Invasion and ET comparison – Film Form, Context, Themes and Genre (comparison) | ☐ Film Form ☐ Context ☐ Themes ☐ Genre ☐ comparison
Film History | ☐ 1895-present day film history timeline
Whiplash – Specialist writing option C | ☐ Specialist writing option C

Friday 8th May (PM)	**Drama – Theatre Makers**

Section A – Bringing Texts to Life
☐ Knowledge of the set text ☐ Plot ☐ Structure ☐ Key events ☐ Characters ☐ Relationships ☐ Key moments
☐ Roles in theatre making ☐ Performer ☐ Director ☐ Designer
☐ Acting skills ☐ Voice (tone, pitch, pace, volume) ☐ Physicality (movement, gesture, posture, facial expression) ☐ Use of space ☐ Interaction
☐ Design skills ☐ Lighting (colour, intensity, position) ☐ Sound (music, effects, atmosphere) ☐ Set (props, staging, levels) ☐ Costume (colour, status, symbolism)
☐ Interpretation ☐ Staging key moments ☐ Communicating meaning ☐ Justifying creative choices

---

Section B – Live Theatre Evaluation
☐ Evaluating performance ☐ Acting ☐ Design (lighting, sound, set, costume) ☐ Overall effectiveness
☐ Analysis ☐ What worked well ☐ What could be improved
☐ Audience response ☐ Impact on audience ☐ Atmosphere ☐ Emotional response

Monday 11th May (AM)	**English Literature Paper 1**

Macbeth – Plot Overview | ☐ Key events in each act (focus on Acts 1–5) ☐ How Macbeth changes throughout the play
Macbeth – Main Characters | ☐ Macbeth ☐ Lady Macbeth ☐ Banquo ☐ The Witches ☐ King Duncan & Macduff

Macbeth – Themes | ☐ Ambition and Power ☐ Guilt and Conscience ☐ Fate vs. Free Will ☐ The Supernatural ☐ Masculinity and Gender Roles ☐ Kingship and Tyranny
Macbeth – Key Quotations | ☐ Memorise short, flexible quotes for each character/theme
Macbeth – Context | ☐ The Divine Right of Kings ☐ Jacobean beliefs about witchcraft and gender ☐ Shakespeare's message about ambition and order
Macbeth – Analysis Skills | ☐ Close language analysis (imagery, symbolism, structure, motifs) ☐ Linking extract and whole-text ideas ☐ Writing analytical paragraphs

---

A Christmas Carol – Plot Overview | ☐ Stave-by-stave summary ☐ Scrooge's transformation
A Christmas Carol – Main Characters | ☐ Scrooge ☐ The Ghosts (Past, Present, Future) ☐ Bob Cratchit & Tiny Tim ☐ Fred (Scrooge's nephew)
A Christmas Carol – Themes | ☐ Redemption ☐ Social Responsibility ☐ Poverty and Inequality ☐ Family and Community ☐ Christmas Spirit
A Christmas Carol – Key Quotations | ☐ Short, adaptable quotes for each theme/character
A Christmas Carol – Context | ☐ Victorian attitudes to poverty (Workhouses, Poor Law) ☐ Dickens' social criticism and moral message
A Christmas Carol – Analysis Skills | ☐ Language, structure, and form (novella structure, symbolism) ☐ Connecting ideas across the text ☐ Developing critical interpretations

Monday 11th May (PM)	**Business Studies Paper 1**

1.1.1 The dynamic nature of business | ☐ changes in technology ☐ changes in what consumers want ☐ products and services becoming obsolete ☐ original ideas ☐ adapting existing products/services/ideas
1.1.2 Risk and reward | ☐ risk: business failure ☐ financial loss ☐ lack of security ☐ reward: business success ☐ profit ☐ independence
1.1.3 The role of business enterprise | ☐ to produce goods or services ☐ to meet customer needs ☐ an entrepreneur: organises resources ☐ makes business decisions ☐ takes risks ☐ to add value: convenience ☐ branding ☐ quality ☐ design ☐ unique selling points
1.2.1 Customer needs | ☐ price ☐ quality ☐ choice ☐ convenience ☐ generating sales ☐ business survival
1.2.2 Market research | ☐ to identify and understand customer needs ☐ to identify gaps in the market ☐ to reduce risk ☐ to inform business decisions ☐ primary research: survey ☐ questionnaire ☐ focus group ☐ observation ☐ secondary research: internet ☐ market reports ☐ government reports ☐ qualitative and quantitative data ☐ social media ☐ reliability
1.2.3 Market segmentation | ☐ location ☐ demographics ☐ lifestyle ☐ income ☐ age ☐ market mapping ☐ gap in the market ☐ competition
1.2.4 The competitive environment | ☐ price ☐ quality ☐ location ☐ product range ☐ customer service ☐ impact of competition on business decision making
1.3.1 Business aims and objectives | ☐ financial aims: survival ☐ profit ☐ sales ☐ market share ☐ financial security ☐ non-financial aims: social objectives ☐ personal satisfaction ☐ challenge ☐ independence ☐ control ☐ why aims differ
1.3.2 Business revenues, costs and profits | ☐ revenue ☐ fixed costs ☐ variable costs ☐ total costs ☐ profit and loss ☐ interest ☐ break even level of output ☐ margin of safety ☐ break even diagrams ☐ impact of changes in revenue and costs
1.3.3 Cash and cash-flow | ☐ to pay suppliers ☐ overheads ☐ employees ☐ prevent insolvency ☐ difference between cash and profit ☐ cash inflows ☐ cash outflows ☐ net cash flow ☐ opening and closing balances
1.3.4 Sources of business finance | ☐ overdraft ☐ trade credit ☐ personal savings ☐ venture capital ☐ share capital ☐ loans ☐ retained profit ☐ crowd funding
1.4.1 The options for start-up and small businesses | ☐ limited liability ☐ unlimited liability ☐ sole trader ☐ partnership ☐ private limited company ☐ advantages ☐ disadvantages ☐ franchising ☐ advantages ☐ disadvantages
1.4.2 Business location | ☐ proximity to market ☐ labour ☐ materials ☐ competitors ☐ nature of business ☐ e-commerce ☐ fixed premises
1.4.3 The marketing mix | ☐ price ☐ product ☐ promotion ☐ place ☐ e-commerce ☐ digital communication
1.4.4 Business plans | ☐ business idea ☐ aims and objectives ☐ target market ☐ forecast revenue ☐ cost ☐ profit ☐ cash-flow forecast ☐ sources of finance ☐ location ☐ marketing mix ☐ minimise risk ☐ obtain finance
1.5.1 Business stakeholders | ☐ shareholders ☐ employees ☐ customers ☐ managers ☐ suppliers ☐ local community ☐ pressure groups ☐ government ☐ stakeholder impact ☐ conflicts

1.5.2 Technology and business | ☐ e-commerce ☐ social media ☐ digital communication ☐ payment systems ☐ impact on sales ☐ costs ☐ marketing mix
1.5.3 Legislation and business | ☐ consumer law ☐ quality ☐ consumer rights ☐ employment law ☐ recruitment ☐ pay ☐ discrimination ☐ health and safety ☐ costs ☐ consequences
1.5.4 The economy and business | ☐ unemployment ☐ consumer income ☐ inflation ☐ interest rates ☐ taxation ☐ exchange rates
1.5.5 External influences | ☐ technology ☐ legislation ☐ economic climate ☐ business responses

Tuesday 12th May (AM)	**Religious Studies Paper 1 Christ/Islam**

Christianity
☐ The nature of God: omnipotent, loving and just, the oneness of God and the Trinity (Father, Son and Holy Spirit) ☐ the problem of evil and suffering ☐ Different Christian beliefs about creation including the role of Word and Spirit (John 1:1–3 and Genesis 1:1–3) ☐ Different Christian beliefs about the afterlife: resurrection, life after death, judgement, heaven and hell
☐ Jesus Christ and salvation: incarnation, Jesus as the Son of God, crucifixion, resurrection and ascension ☐ sin, including original sin ☐ the means of salvation: law, grace and Spirit, the role of Christ in salvation including the idea of atonement
Christianity beliefs
☐ Worship and prayer: different forms of worship (liturgical, non-liturgical and informal), use of the Bible, private worship ☐ Prayer including the Lord's Prayer, set prayers and informal prayer
☐ Sacraments: meaning of sacrament ☐ baptism (infant and believers' baptism, different beliefs) ☐ eucharist (Holy Communion), its significance, different ways it is celebrated and different interpretations
☐ Pilgrimage and celebrations: Lourdes and Iona ☐ Christmas and Easter and their importance for Christians in Great Britain today
☐ The role of the Church: local and worldwide community ☐ mission, evangelism and Church growth ☐ local work (food banks, street pastors) ☐ worldwide Church: reconciliation, responses to persecution, work of CAFOD, Christian Aid, Tearfund

---

Islam
☐ The six articles of faith in Sunni Islam and five roots of Usul ad-Din in Shi'a Islam (similarities and differences)
☐ The nature of God: omnipotence, beneficence, mercy, fairness and justice (Adalat), immanence and transcendence, Tawhid (Qur'an Surah 112)
☐ Angels (Jibril and Mika'il) ☐ Predestination and human freedom and relationship to the Day of Judgement ☐ Life after death (Akhirah): responsibility, accountability, resurrection, heaven and hell
☐ Prophethood (Risalah): Adam, Ibrahim and Muhammad ☐ Holy books: Torah, Psalms, Gospel, Scrolls of Abraham ☐ Qur'an: revelation and authority ☐ Imamate in Shi'a Islam
Islam practices
☐ Five Pillars of Sunni Islam and Ten Obligatory Acts of Shi'a Islam (including jihad in both)
☐ Shahadah: declaration of faith
☐ Salah: how and why Muslims pray (times, direction, wudu, rak'ahs, recitations), prayer at home/mosque, Jummah, Sunni/Shi'a differences and views on importance
☐ Sawm: fasting during Ramadan (origins, duties, benefits, exceptions, Night of Power Qur'an 96:1–5)
☐ Zakah: giving alms (origins, how and why, benefits, Khums in Shi'a Islam)
☐ Hajj: pilgrimage to Makkah (origins, process, Ka'aba, Mina, Arafat, Muzdalifah and significance)
☐ Jihad: greater and lesser jihad, origins, influence, conditions ☐ Festivals: Id-ul-Adha, Id-ul-Fitr, Ashura

Tuesday 12th May (PM)	**Biology Paper 1 Separate Science**

Topic 1 – Key Concepts in Biology
1.1 | ☐ Explain how the sub-cellular structures of eukaryotic and prokaryotic cells are related to their functions ☐ Animal cells – nucleus, cell membrane, mitochondria, ribosomes ☐ Plant cells – nucleus, cell membrane, cell wall, chloroplasts, mitochondria, vacuole, ribosomes ☐ Bacteria – chromosomal DNA, plasmid DNA, cell membrane, ribosomes, flagella
1.2 | ☐ Specialised cells ☐ Sperm – acrosome, haploid nucleus, mitochondria, tail ☐ Egg – cytoplasm nutrients, haploid nucleus, membrane changes ☐ Ciliated epithelial cells
1.3–1.6 | ☐ Microscopy and electron microscopy ☐ Number, size, scale, estimations ☐ Units: milli, micro, nano, pico, standard form ☐ Core Practical: microscopes, magnification, drawings

1.7–1.12 | ☐ Enzyme action: active site, specificity, denaturation ☐ Factors: temperature, pH, substrate concentration ☐ Core Practical: pH ☐ Rate calculations ☐ Enzymes in synthesis and breakdown of carbohydrates, proteins, lipids
1.13–1.17 | ☐ Core Practical: food tests (starch, sugars, proteins, fats) ☐ Calorimetry ☐ Transport: diffusion, osmosis, active transport ☐ Core Practical: osmosis in potatoes ☐ Percentage gain/loss

---

Topic 2 – Cells and Control
2.1–2.4 | ☐ Mitosis: interphase, prophase, metaphase, anaphase, telophase, cytokinesis ☐ Growth, repair, asexual reproduction ☐ Daughter cells identical, diploid ☐ Cancer
2.5–2.9 | ☐ Growth in animals and plants ☐ Differentiation ☐ Percentile charts ☐ Stem cells (embryonic, animal, meristems) ☐ Benefits and risks
2.10B–2.17B | ☐ Brain: cerebellum, cerebral hemispheres, medulla ☐ HT: CT and PET scans ☐ Limitations of treating brain damage ☐ Nervous system: neurones, synapses, neurotransmitters ☐ Reflex arc ☐ Eye structure: cornea, lens, iris, rods, cones ☐ Eye defects and corrections

---

Topic 3 – Genetics
3.1B–3.2B | ☐ Asexual reproduction (rapid, no variation) ☐ Sexual reproduction (variation, requires mate)
3.3–3.6 | ☐ Meiosis: four haploid gametes ☐ DNA: double helix, base pairs, nucleotides ☐ Genome and genes ☐ DNA extraction
3.7B–3.10B (HT) | ☐ Protein synthesis: transcription and translation ☐ RNA polymerase, mRNA, codons, tRNA ☐ Genetic variants affecting phenotype
3.11B–3.18B | ☐ Mendel ☐ Alleles ☐ Key terms: chromosome, gene, genotype, phenotype etc ☐ Monohybrid inheritance ☐ Punnett squares ☐ Sex determination ☐ ABO blood groups ☐ Sex-linked disorders (HT)
3.19–3.23 | ☐ Polygenic inheritance ☐ Variation: genetic and environmental ☐ Human Genome Project ☐ Mutations and effects

---

Topic 4 – Natural Selection and Genetic Modification
4.1B–4.3 | ☐ Darwin and Wallace ☐ Natural selection ☐ Antibiotic resistance
4.4–4.7 | ☐ Human evolution: fossils (Ardi, Lucy, Leakey) ☐ Stone tools ☐ Classification: three domains
4.8–4.14 | ☐ Selective breeding ☐ Tissue culture ☐ Genetic engineering ☐ HT: restriction enzymes, ligase, vectors ☐ GM crops ☐ Fertilisers and biological control ☐ Ethical implications

---

Topic 5 – Health, Disease and the Development of Medicines
5.1–5.4 | ☐ Health definition ☐ Communicable vs non-communicable ☐ Pathogens: viruses, bacteria, fungi, protists
5.5–5.8 | ☐ Diseases: cholera, TB, chalara, malaria, HIV, ulcers, Ebola ☐ Transmission: water, airborne, vectors, oral, fluids ☐ STIs: chlamydia, HIV
5.7B–5.11B | ☐ Virus lifecycle (lytic, lysogenic) ☐ Plant defences ☐ HT: disease detection
5.12–5.16 | ☐ Defences: mucus, cilia, skin, lysozymes, acid ☐ Immune response: antigens, antibodies, memory cells ☐ Immunisation ☐ Antibiotics
5.17B–5.22B (HT) | ☐ Aseptic technique ☐ Core Practical: antimicrobials ☐ Culture calculations ☐ Monoclonal antibodies (production and uses)
5.23–5.25 | ☐ Non-communicable diseases ☐ Lifestyle factors: diet, exercise, alcohol, smoking ☐ Treatments: medication, surgery, lifestyle changes

Tuesday 12th May (PM)	**Biology Paper 1 Combined Science**

Topic 1 – Key Concepts in Biology | ☐ Sub-cellular structures and functions: Animal cells (nucleus, cell membrane, mitochondria, ribosomes) ☐ Plant cells (nucleus, cell membrane, cell wall, chloroplasts, mitochondria, vacuole, ribosomes) ☐ Bacteria (chromosomal DNA, plasmid DNA, cell membrane, ribosomes, flagella) ☐ Specialised cells: Sperm (acrosome, haploid nucleus, mitochondria, tail) ☐ Egg (cytoplasm nutrients, haploid nucleus, membrane changes) ☐ Ciliated epithelial cells ☐ Microscopy and electron microscopy ☐ Number, size, scale, estimations ☐ Units: milli, micro, nano, pico, standard form ☐ Core Practical: microscopes, magnification, drawings ☐ Enzymes: active site, specificity, denaturation, temperature, pH, substrate concentration ☐ Core Practical: pH ☐ Rate calculations ☐ Enzymes in synthesis and breakdown of carbohydrates, proteins, lipids ☐ Transport: diffusion, osmosis, active transport ☐ Core Practical: osmosis in potatoes ☐ Percentage gain/loss

Topic 2 – Cells and Control | ☐ Mitosis stages: interphase, prophase, metaphase, anaphase, telophase, cytokinesis ☐ Importance: growth, repair, asexual reproduction ☐ Daughter cells identical, diploid ☐ Cancer: uncontrolled cell division ☐ Growth: animals (division, differentiation) ☐ plants (division, elongation, differentiation) ☐ Cell differentiation ☐ Percentile charts ☐ Stem cells: embryonic, animal, meristems ☐ Benefits and risks

Topic 3 – Genetics | ☐ Meiosis: four haploid, genetically different gametes ☐ DNA: double helix, base pairs, hydrogen bonds, nucleotides ☐ Genome and genes (code for proteins) ☐ DNA extraction ☐ Alleles and inherited characteristics ☐ Key terms: chromosome, gene, allele, dominant, recessive, homozygous, heterozygous, genotype, phenotype, gamete, zygote ☐ Monohybrid inheritance: genetic diagrams, Punnett squares, pedigrees ☐ Sex determination ☐ Calculations: probability, ratio, percentage ☐ Polygenic inheritance ☐ Variation: genetic (mutation, sexual reproduction) ☐ environmental ☐ Human Genome Project ☐ Mutations and effects

Topic 4 – Natural Selection and Genetic Modification | ☐ Darwin's theory of evolution by natural selection ☐ Resistant organisms (antibiotic resistance) ☐ Human evolution: fossils (Ardi, Lucy, Leakey) ☐ Stone tools and dating ☐ Classification: three domains ☐ Selective breeding ☐ Genetic engineering: modifying genome, desirable characteristics ☐ HT: restriction enzymes, ligase, sticky ends, vectors ☐ Benefits, risks, ethical implications

Topic 5 – Health, Disease and the Development of Medicines | ☐ Health (physical, mental, social well-being) ☐ Communicable vs non-communicable diseases ☐ Pathogens: viruses, bacteria, fungi, protists ☐ Diseases: cholera, tuberculosis, chalara ash dieback, malaria, HIV, stomach ulcers, Ebola ☐ Transmission: water, airborne, vectors, oral, body fluids ☐ STIs: chlamydia, HIV ☐ Defences: physical (mucus, cilia, skin) ☐ chemical (lysozymes, hydrochloric acid) ☐ Immune system: antigens, antibodies, memory lymphocytes, secondary response ☐ Immunisation ☐ Antibiotics (bacterial only) ☐ Drug development: discovery, development, preclinical, clinical testing ☐ Non-communicable diseases (cardiovascular, cancer, lung, liver, nutrition) ☐ Lifestyle factors: diet, exercise, obesity, BMI, alcohol, smoking ☐ Treatments: medication, surgery, lifestyle changes

Wednesday 13th May (AM)	**Geography B Paper 1 Our Natural World**

1.1 How can weather be hazardous? – Why do we have weather extremes? | ☐ global circulation system ☐ high- and low-pressure belts ☐ climatic zones ☐ extremes in weather conditions ☐ wind ☐ temperature ☐ precipitation ☐ location of tropical storms ☐ droughts ☐ changes over time ☐ causes of tropical storms ☐ El Nino ☐ La Nina ☐ drought

When does extreme weather become a hazard? | ☐ flash flood in Cumbria, 2015 (causes, consequences, responses) ☐ drought in Australia (causes, consequences, responses)

1.2 How do plate tectonics shape our world? – What processes occur at plate boundaries? | ☐ structure of the Earth ☐ characteristics of each layer ☐ convection currents ☐ plate movement ☐ distribution of plates ☐ destructive plate boundaries ☐ constructive plate boundaries ☐ collision plate boundaries ☐ hotspots ☐ earthquakes (shallow and deep focus) ☐ volcanoes (shield and composite)

How can tectonic movement be hazardous? | ☐ Nepal location ☐ plate boundaries ☐ earthquake strength ☐ when it happened ☐ how it happened ☐ primary impacts ☐ secondary impacts ☐ social impacts ☐ economic impacts ☐ environmental impacts ☐ short-term responses ☐ long-term responses ☐ effectiveness of responses

How does technology have the potential to save lives in hazard zones | ☐ building design ☐ building material ☐ early warning systems ☐ earthquake drills ☐ prediction

Topic 2 Changing Climate – What evidence is there for climate change? | ☐ climate change from Quaternary period to present ☐ ice cores ☐ sea ice positions ☐ global temperature data ☐ paintings and diaries ☐ reliability

Is climate change a natural process? | ☐ sun spots ☐ Milankovitich Cycle ☐ volcanic eruptions ☐ natural greenhouse effect ☐ enhanced greenhouse effect

Why is climate change a global issue? | ☐ extreme weather events ☐ sea level rise ☐ social impacts ☐ economic impacts ☐ environmental impacts ☐ UK impacts ☐ weather patterns ☐ seasonality ☐ industry

Topic 3 Distinctive Landscapes – What makes a landscape distinctive? | ☐ built landscapes ☐ natural landscapes ☐ natural elements ☐ human elements ☐ biological elements ☐ variable elements
Where are the physical landscapes of the UK? | ☐ upland landscapes ☐ lowland landscapes ☐ glaciated landscapes ☐ geology ☐ climate ☐ human activity
What physical processes shape landscapes? | ☐ weathering (biological, chemical, mechanical) ☐ mass movement (sliding, slumping) ☐ erosion (hydraulic action, abrasion, attrition, solution) ☐ transportation (traction, saltation, suspension, solution) ☐ deposition ☐ headlands and bays ☐ caves, arches, stacks, stumps ☐ wavecut platform ☐ beach ☐ spit ☐ waterfall ☐ gorge ☐ V shaped valley ☐ floodplain
What are the characteristics of one river and one coastal landscape? | ☐ Dorset coastline ☐ Old Harry Rock ☐ Swanage Bay ☐ spit ☐ longshore drift ☐ erosion ☐ weathering ☐ transportation ☐ deposition ☐ management strategies (groynes, seawalls) ☐ River Tees ☐ Bradshaw's model ☐ High Force waterfall ☐ meander at Yarm ☐ geology ☐ climate ☐ flooding ☐ Tees barrage ☐ flood gates ☐ flood walls

---

Topic 4 Sustaining Ecosystems – Why are natural ecosystems important? | ☐ ecosystems interdependence ☐ climate ☐ soil ☐ water ☐ plants ☐ animals ☐ polar regions ☐ coral reefs ☐ grasslands ☐ temperate forests ☐ tropical rainforests ☐ hot deserts ☐ flora ☐ fauna
Why should tropical rainforests matter to us? | ☐ climate ☐ nutrient cycle ☐ soil profile ☐ water cycle ☐ goods and services ☐ logging ☐ mineral extraction ☐ agriculture ☐ tourism ☐ Costa Rica ☐ ecotourism ☐ community programmes ☐ biosphere reserves ☐ sustainable forestry
Is there more to polar environments than ice? | ☐ Antarctica ☐ Arctic ☐ climate ☐ land and sea features ☐ plants ☐ animals ☐ interdependence ☐ scientific research ☐ indigenous people ☐ tourism ☐ fishing ☐ whaling ☐ mineral extraction
How are humans seeking a sustainable solution for polar environments? | ☐ tourism in Svalbard ☐ Antarctic Treaty

Wednesday 13th May (PM)	**Computer Science Paper 1**

Systems Architecture
☐ the purpose of the CPU ☐ the fetch-execute cycle ☐ common CPU components and their function: ALU (Arithmetic Logic Unit) ☐ CU (Control Unit) ☐ Cache ☐ Registers ☐ Von Neumann architecture: MAR (Memory Address Register) ☐ MDR (Memory Data Register) ☐ Program Counter ☐ Accumulator
Secondary (memory & Storage)
☐ The need for secondary storage ☐ Common types of storage: Optical ☐ Magnetic ☐ Solid state ☐ Suitable storage devices and storage media for a given application ☐ The advantages and disadvantages of different storage devices and storage media relating to these characteristics: Capacity ☐ Speed ☐ Portability ☐ Durability ☐ Reliability ☐ Cost
Units ☐ How data needs to be converted into a binary format to be processed by a computer ☐ Data capacity and calculation of data capacity requirements
Data storage (Number Systems)
☐ How to convert positive denary whole numbers to binary numbers (up to and including 8 bits) and vice versa ☐ How to add two binary integers together (up to and including 8 bits) and explain overflow errors which may occur ☐ How to convert positive denary whole numbers into 2-digit hexadecimal numbers and vice versa ☐ How to convert binary integers to their hexadecimal equivalents and vice versa ☐ Binary shifts
Ethical, legal, cultural, and environmental impacts of digital literacy
☐ Ethical Issues ☐ Legal Issues ☐ Cultural Issues ☐ Environmental Issues ☐ Privacy Issues
Data storage (Representation)
Characters ☐ The use of binary codes to represent characters ☐ the term 'character set' ☐ The relationship between the number of bits per character in a character set, and the number of characters which can be represented ☐ ASCII ☐ Unicode
Images ☐ How an image is represented as a series of pixels, represented in binary ☐ Metadata ☐ The effect of colour depth and resolution on: The quality of the image ☐ The size of an image file
Sound ☐ How sound can be sampled and stored in digital form ☐ The effect of sample rate, duration and bit depth on: The playback quality ☐ The size of a sound file
Network Topologies
☐ Types of networks: LAN (Local Area Network) ☐ WAN (Wide Area Network) ☐ Factors that affect the performance of networks ☐ The different roles of computers in a client-server and a peer-to-peer network ☐ The hardware needed to connect stand-alone computers into a Local Area Network: Wireless access points ☐

Routers ☐ Switches ☐ NIC (Network Interface Controller/Card) ☐ Transmission media ☐ The Internet as a worldwide collection of computer networks: DNS (Domain Name Server) ☐ Hosting ☐ The Cloud ☐ Web servers and clients ☐ Star and Mesh network topologies

Thursday 14th May (AM)	**Maths Paper 1 – Non calculator**

Foundation | **Geometry and Measures** | ☐ Arc lengths and sectors ☐ Derive triangle results ☐ Enlargements and negative SF ☐ Loci ☐ Pythagoras ☐ Similarity and Congruence ☐ Standard constructions ☐ Surface Area ☐ Trigonometric ratios ☐ Volume ☐ Alternate and corresponding angles ☐ Area of a circle ☐ Areas of composite shapes ☐ Areas of triangles, trapezia and parallelograms ☐ Bearings ☐ Circle terminology ☐ Circumference of a circle ☐ Congruent triangles ☐ Enlargements and fractional SF ☐ Perimeter of 2D shapes ☐ Plans and elevations ☐ Polygons ☐ Solve geometrical problems ☐ Vector arithmetic ☐ Volume of prisms ☐ 3D Shapes ☐ Congruent and similar shapes ☐ Geometrical terminology and diagrams ☐ Measuring lines and angles ☐ Properties of quadrilaterals ☐ Properties of triangles ☐ Translations and vectors ☐ Using standard units

---

Algebra | ☐ Algebraic terminology ☐ Cubic and reciprocal graphs ☐ Deduce quadratic roots algebraically ☐ Derive an equation ☐ Equation of a line ☐ Expand the product of two binomials ☐ Factorising quadratic expressions ☐ Fibonacci, quadratic and geometric sequences ☐ Graphical solution to equations ☐ Inequalities on number lines ☐ Linear equations ☐ Quadratic graphs ☐ Reciprocal real-life graphs ☐ Simplify indices ☐ Simplify surds ☐ Solve linear inequalities ☐ Writing formulae and expressions ☐ Changing the subject ☐ Collecting like terms ☐ Expressions ☐ Factorise single bracket ☐ Finding the equation of a line ☐ Graphs of linear functions ☐ Graphs of quadratic functions ☐ Linear equations one unknown ☐ Multiplying single brackets ☐ Non-standard real-life graphs ☐ nth term of a linear sequence ☐ Number machines ☐ Substitution ☐ Using y = mx + c ☐ Coordinates in four quadrants ☐ Plotting straight line graphs ☐ Position to term rules ☐ Sequences (square, triangular, cube) ☐ Using formulae ☐ Sequences and rules

---

Statistics | ☐ Histograms ☐ Scatter graphs ☐ Comparing data using graphs ☐ Comparing distributions ☐ Correlation ☐ Population ☐ Sampling ☐ Scatter diagrams ☐ Time series ☐ Charts and diagrams ☐ Pie charts ☐ Types of data ☐ Vertical line charts

---

Ratio, Proportion and Rates of Change | ☐ Compound units ☐ Gradient and rate of change ☐ Growth and decay ☐ Interpret proportion ☐ Percentage change ☐ Problems with compound units ☐ Scale factors and similarity ☐ Simple interest and financial maths ☐ Solve proportion problems ☐ Compare fractions, decimals and percentages ☐ Compare length, area, volume ☐ Comparing quantities as a ratio ☐ Division of a quantity as a ratio ☐ Express one quantity as a percentage ☐ Percentage change ☐ Problems involving ratio ☐ Proportion and ratio ☐ Ratio and fractions ☐ Ratio sharing ☐ Convert standard units ☐ Express one quantity as a fraction ☐ Use ratio notation ☐ Use scale factors, diagrams and maps

---

Number | ☐ Calculating with fractions ☐ Error intervals ☐ Index laws ☐ Limits of accuracy ☐ Adding and subtracting fractions ☐ Checking calculations ☐ Compound measures ☐ Converting metric units ☐ Estimation ☐ Fractions and percentages ☐ Fractions and ratio problems ☐ Interpret calculator displays ☐ LCM and HCF ☐ Multiples and factors ☐ Multiplying fractions ☐ Operations ☐ Order of operations ☐ Powers ☐ Rounding ☐ Standard form ☐ Terminating decimals and fractions ☐ Decimals ☐ Listing outcomes ☐ Prime numbers ☐ Using standard units ☐ Add and subtract integers ☐ Dividing integers ☐ Multiplying integers ☐ Ordering numbers ☐ Place value

---

Probability | ☐ Probability of dependent events ☐ Probability of independent events ☐ Mutually exclusive events ☐ Relative frequency ☐ Tables and grids ☐ Theoretical probability ☐ Unbiased samples ☐ Venn diagrams ☐ Frequency trees ☐ Probability of equally likely outcomes

Higher | **Algebra** | ☐ Approximate solutions using iteration ☐ Equation of a circle ☐ Equation of a tangent ☐ Algebra and proof ☐ Gradients and area under a graph ☐ Graphs of trigonometric functions ☐ Quadratic equations (completing the square) ☐ Composite functions ☐ Expand binomials ☐ Factorising difficult quadratics ☐ Geometric sequences ☐ Graphs of exponential functions ☐ Quadratic equations (rearranging) ☐ Quadratic formula ☐ Real-life exponential graphs ☐ Quadratic inequalities ☐ Simultaneous equations (non-

linear) ☐ Solve quadratic inequalities ☐ Transformations of graphs ☐ Turning points ☐ Algebraic fractions ☐ Parallel lines ☐ Inverse functions ☐ Linear inequalities (two variables) ☐ Quadratic sequences ☐ Quadratic equations (factorisation) ☐ Quadratic equations (graphs) ☐ Linear inequalities ☐ Simultaneous equations (linear) ☐ Algebraic argument ☐ Algebraic terminology ☐ Cubic and reciprocal graphs ☐ Deduce quadratic roots ☐ Derive equations ☐ Equation of a line ☐ Expand binomials ☐ Factorising quadratics ☐ Sequences ☐ Graphical solutions ☐ Inequalities on number lines ☐ Linear equations ☐ Quadratic graphs ☐ Reciprocal graphs ☐ Simplify indices ☐ Simplify surds ☐ Solve linear inequalities ☐ Writing formulae ☐ Changing the subject ☐ Collecting like terms ☐ Expressions ☐ Factorise single brackets ☐ Finding equation of a line ☐ Linear graphs ☐ Quadratic graphs ☐ Linear equations ☐ Multiplying brackets ☐ Non-standard graphs ☐ nth term ☐ Number machines ☐ Substitution ☐ y = mx + c

Geometry and Measures | ☐ Circle theorems ☐ Vector arguments and proof ☐ Area of a triangle ☐ Cosine rule ☐ Pythagoras and trigonometry (2D/3D) ☐ Sine rule ☐ Combined transformations ☐ Congruence and similarity ☐ Trigonometric ratios ☐ Arc lengths and sectors ☐ Triangle results ☐ Enlargements ☐ Loci ☐ Pythagoras ☐ Similarity ☐ Constructions ☐ Surface area ☐ Trigonometry ☐ Volume ☐ Angles (alternate/corresponding) ☐ Area of a circle ☐ Composite areas ☐ Triangle/trapezia/parallelogram areas ☐ Bearings ☐ Circle terminology ☐ Circumference ☐ Congruent triangles ☐ Enlargements ☐ Perimeter ☐ Plans and elevations ☐ Polygons ☐ Geometrical problems ☐ Vector arithmetic ☐ Volume of prisms

Statistics | ☐ Boxplots ☐ Cumulative frequency ☐ Histograms (unequal class widths) ☐ Quartiles and IQR ☐ Histograms (equal class widths) ☐ Scatter graphs ☐ Comparing data ☐ Comparing distributions ☐ Correlation ☐ Population ☐ Sampling ☐ Scatter diagrams ☐ Time series

Probability | ☐ Conditional probability ☐ Dependent events ☐ Independent events ☐ Mutually exclusive events ☐ Relative frequency ☐ Tables and grids ☐ Theoretical probability ☐ Unbiased samples ☐ Venn diagrams

Number | ☐ Surds ☐ Index laws (negative/fractional) ☐ Product rule ☐ Recurring decimals ☐ Upper and lower bounds ☐ Finance ☐ Powers and roots ☐ Prime factors ☐ Using pi ☐ Calculating with fractions ☐ Error intervals ☐ Index laws ☐ Limits of accuracy ☐ Adding/subtracting fractions ☐ Checking calculations ☐ Compound measures ☐ Metric conversions ☐ Estimation ☐ Fractions and percentages ☐ Ratio problems ☐ Calculator displays ☐ LCM and HCF ☐ Multiples and factors ☐ Multiplying fractions ☐ Operations ☐ Order of operations ☐ Powers ☐ Rounding ☐ Standard form ☐ Terminating decimals

Ratio, Proportion and Rates of Change | ☐ Gradient and rate of change ☐ Iterative processes ☐ Direct and inverse proportion ☐ Compound units ☐ Gradient ☐ Growth and decay ☐ Interpret proportion ☐ Percentage change ☐ Compound unit problems ☐ Scale factors ☐ Financial maths ☐ Solve proportion problems ☐ Fractions/decimals/percentages ☐ Compare measures ☐ Ratio comparison ☐ Divide by ratio ☐ Express as percentage ☐ Percentage change ☐ Ratio problems ☐ Proportion ☐ Ratio and fractions ☐ Ratio sharing volume ☐ Solving quadratic inequalities ☐ Tangent to a graph ☐ Transformation of trigonometric graphs ☐ Tree diagrams

Thursday 14th May (PM)	**Citizenship Studies Paper 2**

Theme 1 - Life in Modern Britain

☐ UK values ☐ Democracy, rule of law, individual liberty, mutual respect and tolerance
☐ Identity ☐ Factors shaping identity (nationality, ethnicity, religion, culture) ☐ Multiple identities
☐ Diversity ☐ Benefits and challenges ☐ Cultural diversity in the UK
☐ Migration ☐ Reasons for migration ☐ Impact on UK society ☐ Debates about immigration
☐ UK and the wider world ☐ Role in international organisations (e.g. United Nations, Commonwealth) ☐ Global connections ☐ Respect and tolerance ☐ Promoting equality ☐ Tackling discrimination

Theme 2 - Rights and Responsibilities

☐ Human rights ☐ What they are and why they matter ☐ Universal human rights (e.g. United Nations Universal Declaration of Human Rights) ☐ Development of rights in the UK ☐ Human Rights Act 1998
☐ Rights and responsibilities ☐ Balancing individual rights with responsibilities
☐ Law and justice ☐ Difference between civil and criminal law ☐ Role of the legal system

☐ Role of the police ☐ Maintaining law and order ☐ Protecting citizens ☐ Courts ☐ Magistrates' courts and Crown Court ☐ Types of offences ☐ Freedom of expression ☐ Limits (hate speech, discrimination laws) ☐ Equality ☐ Laws to protect rights ☐ Tackling discrimination and prejudice ☐ Role of organisations protecting rights (e.g. Amnesty International) ☐ Citizens holding those in power to account ☐ Role in democracy

Skills (Paper 2 focus)
☐ Interpreting sources ☐ Data, charts, case studies ☐ Explaining key concepts clearly using terminology ☐ Developing arguments ☐ Balanced viewpoints and judgement ☐ Using evidence to support answers ☐ Evaluating different perspectives

Friday 15th May (AM)	**History Paper 1 Crime and Punishment**

Medieval England (c1000–1500)
☐ Nature of crime ☐ Authority of the king ☐ Role of the Church ☐ Moral vs social crimes ☐ Law enforcement ☐ Tithings ☐ Hue and cry ☐ Parish constables ☐ Role of the Church courts ☐ Punishment ☐ Fines ☐ Corporal punishment ☐ Capital punishment ☐ Wergild ☐ Sanctuary ☐ Benefit of clergy ☐ Justice system ☐ Trial by ordeal ☐ Trial by combat ☐ Trial by jury (later period)

Early Modern England (1500–1700)
☐ Changing nature of crime ☐ Heresy ☐ Treason ☐ Vagabondage ☐ Law enforcement ☐ Justices of the Peace ☐ Constables ☐ Watchmen ☐ Punishment ☐ Corporal punishment ☐ Capital punishment ☐ Transportation ☐ Early Bloody Code ☐ Witchcraft ☐ Causes ☐ Matthew Hopkins ☐ Witch trials ☐ Decline of witch hunts ☐ Case study ☐ Gunpowder Plot 1605 ☐ Impact on treason laws

18th and 19th Century (1700–1900)
☐ Nature of crime ☐ Smuggling ☐ Highway robbery ☐ Poaching ☐ Law enforcement ☐ Bow Street Runners ☐ Robert Peel ☐ Metropolitan Police 1829 ☐ Detectives ☐ CID ☐ Punishment ☐ Bloody Code ☐ Transportation ☐ Decline of capital punishment ☐ Prison reform ☐ John Howard ☐ Elizabeth Fry ☐ Separate system ☐ Silent system ☐ Pentonville Prison

Modern Britain (1900–present)
☐ Nature of crime ☐ Drug crime ☐ Cyber crime ☐ Fraud ☐ Terrorism ☐ Law enforcement ☐ Police developments ☐ Forensics ☐ Fingerprinting ☐ DNA ☐ Specialist units ☐ Community policing ☐ Punishment ☐ Prisons ☐ Rehabilitation ☐ Community service ☐ Electronic tagging ☐ ASBOs

Key Themes Across Time
☐ Continuity and change ☐ Crime ☐ Law enforcement ☐ Punishment ☐ Causes of change ☐ Government ☐ Technology ☐ Attitudes ☐ Individuals

Case Study – Whitechapel (c1870–1900)
☐ Context of the police in Whitechapel ☐ Living conditions ☐ Poverty ☐ Overcrowding ☐ Poor sanitation ☐ Immigration ☐ Crime ☐ Prostitution ☐ Alcohol ☐ Gangs ☐ Policing ☐ H Division ☐ Lack of organisation ☐ Limited technology ☐ Problems of policing ☐ Jack the Ripper ☐ Police investigation methods ☐ Role of the media ☐ Reasons he was not caught

Monday 18th May (AM)	**Chemistry Paper 1 Separate**

Topic 0 – Formulae, equations and hazards
0.1–0.4 | ☐ Formulae of elements, simple compounds and ions ☐ Word equations ☐ Balanced symbol equations with state symbols (s), (l), (g), (aq) ☐ HT ONLY – balanced ionic equations
0.5–0.6 | ☐ Hazard symbols: dangers and safe-working precautions ☐ Evaluate risks and suggest suitable precautions for practicals including Core Practicals

Topic 1 – Key concepts in chemistry 1A: Atomic Structure
1.1–1.6 | ☐ Dalton model changes ☐ Atom structure: nucleus with protons and neutrons, electrons in shells ☐ Relative charge and mass of proton, neutron, electron ☐ Equal numbers of protons and electrons ☐ Nucleus very small ☐ Most mass in nucleus

1.7–1.12 | ☐ Mass number ☐ Elements have unique proton number ☐ Isotopes: same protons, different neutrons ☐ Calculate protons, neutrons, electrons ☐ Relative atomic mass and isotopes ☐ HT ONLY – relative atomic mass from isotope abundances

1B: The Periodic Table

1.13–1.20 | ☐ Mendeleev's arrangement and predictions ☐ Atomic number = position and number of protons ☐ Periods and groups ☐ Metals and non-metals ☐ Electronic configurations of first 20 elements ☐ Link between electronic configuration and position

1C: Ionic Bonding

1.21–1.27 | ☐ Ionic bonds by transfer of electrons ☐ Cations and anions ☐ Dot and cross diagrams ☐ Ions and ion calculations ☐ Groups 1, 2, 6 and 7 ☐ -ide and -ate ☐ Formulae of ionic compounds ☐ Ionic lattice and strong electrostatic forces

1D: Covalent Bonding

1.28–1.31 | ☐ Covalent bond = shared pair of electrons ☐ Molecules ☐ Size of atoms and small molecules ☐ Dot and cross diagrams for hydrogen, hydrogen chloride, water, methane, oxygen, carbon dioxide

1E: Types of Substance

1.32–1.34 | ☐ Ionic, simple molecular, giant covalent, metallic ☐ Structure and bonding linked to melting point, boiling point, solubility and conductivity ☐ Ionic properties ☐ Covalent properties

1.35–1.42 | ☐ Graphite and diamond ☐ Structures and uses ☐ Fullerenes including C60 and graphene ☐ Poly(ethene) ☐ Metals: malleability and conductivity ☐ Limitations of models ☐ Properties of metals and non-metals

1F: Calculations Involving Masses

1.43–1.49 | ☐ Relative formula mass ☐ Empirical formula from masses or percentage composition ☐ Molecular formula from empirical formula and Mr ☐ Magnesium oxide experiment ☐ Conservation of mass ☐ Mass calculations from balanced equations ☐ Concentration in g dm^{-3}

1.50–1.53 | ☐ HT ONLY – mole definition and Avogadro constant ☐ Mole calculations ☐ Limiting reactant ☐ Stoichiometry from masses of reactants and products

Topic 2 – States of matter and mixtures

2A: States of Matter

2.1–2.4 | ☐ Arrangement, movement and energy of particles in solids, liquids and gases ☐ State changes ☐ Physical changes vs chemical changes ☐ Predict physical state from data

2B: Methods of Separating and Purifying Substances

2.5–2.8 | ☐ Pure substances vs mixtures ☐ Melting point data ☐ Separation by simple distillation, fractional distillation, filtration, crystallisation, paper chromatography ☐ Choosing suitable technique

2.9–2.12 | ☐ Chromatography: mobile phase and stationary phase ☐ Interpret chromatograms ☐ Rf values ☐ Core Practical: inks using distillation and chromatography ☐ Potable water and distillation of sea water

Topic 3 – Chemical Changes

3A: Acids

3.1–3.5 | ☐ Acids = hydrogen ions ☐ Alkalis = hydroxide ions ☐ pH scale ☐ Indicators ☐ HT ONLY – pH and ion concentration

3.6–3.10 | ☐ Core Practical: pH change with calcium hydroxide/calcium oxide and hydrochloric acid ☐ HT ONLY – dilute vs concentrated ☐ HT ONLY – weak vs strong acids ☐ Bases and alkalis

3.11–3.18 | ☐ Acid reactions with metals, metal oxides, metal hydroxides, metal carbonates ☐ Tests for hydrogen and carbon dioxide ☐ Neutralisation ☐ Salt preparation from insoluble and soluble reactants ☐ Core Practical: copper sulfate crystals ☐ Titration method

3.19–3.21 | ☐ Solubility rules ☐ Predict precipitates ☐ Preparation of insoluble salts

3B: Electrolytic Processes

3.22–3.26 | ☐ Electrolytes ☐ Electrolysis ☐ Movement of cations and anions ☐ Products at electrodes using inert electrodes ☐ Predict products of molten binary ionic compounds
3.27–3.31 | ☐ HT ONLY – half equations ☐ HT ONLY – oxidation and reduction as loss/gain of electrons ☐ Oxidation at anode, reduction at cathode ☐ Copper sulfate with copper electrodes and copper purification ☐ Core Practical

Topic 4 – Extracting metals and equilibria
4A: Obtaining and Using Metals
4.1–4.4 | ☐ Relative reactivity from reactions with water, acids and salt solutions ☐ HT ONLY – displacement as redox ☐ Reactivity series ☐ Metals in ores and unreactive metals uncombined
4.5–4.8 | ☐ Oxidation = gain of oxygen ☐ Reduction = loss of oxygen ☐ Extraction methods related to reactivity and cost ☐ Heating with carbon ☐ Electrolysis ☐ HT ONLY – bacterial and phytoextraction
4.9–4.12 | ☐ Resistance to oxidation ☐ Recycling metals ☐ Life-cycle assessment ☐ Evaluate life-cycle data

4B: Reversible Reactions and Equilibria
4.13–4.17 | ☐ Reversible reactions and symbol ⇌ ☐ Dynamic equilibrium ☐ Formation of ammonia ☐ Haber process conditions: 450°C, 200 atmospheres, iron catalyst ☐ HT ONLY – effect of temperature, pressure and concentration

Topic 5 – Separate Chemistry
5A: Transition Metals, Alloys and Corrosion
5.1C–5.7C | ☐ Transition metals: high melting point, high density, coloured compounds, catalytic activity ☐ Corrosion and rusting ☐ Preventing rusting: exclude oxygen, exclude water, sacrificial protection ☐ Electroplating ☐ Alloys stronger than pure metals ☐ Alloy steels ☐ Uses of aluminium, copper, gold, magnalium and brass linked to properties

5B: Quantitative Analysis
5.8C–5.10C | ☐ HT ONLY – concentration in mol dm^{-3} and convert g dm^{-3} ↔ mol dm^{-3} ☐ Core Practical: accurate acid-alkali titration ☐ HT ONLY – titration calculations
5.11C–5.18C | ☐ Percentage yield ☐ Actual yield vs theoretical yield ☐ Atom economy ☐ Calculate atom economy ☐ HT ONLY – choosing reaction pathways using atom economy, yield, rate, equilibrium and by-products ☐ HT ONLY – molar volume ☐ Gas volume calculations using balanced equations ☐ Avogadro's Law and gas volumes

5C: Dynamic Equilibria
5.19C–5.24C | ☐ Haber process as reversible reaction ☐ HT ONLY – rate of attainment of equilibrium and effects of temperature, pressure, concentration, catalyst ☐ HT ONLY – industrial conditions and acceptable yield/time ☐ Fertilisers containing nitrogen, phosphorus and potassium ☐ Ammonia reacting with nitric acid ☐ Laboratory and industrial production of ammonium sulfate

5D: Chemical Cells and Fuel Cells
5.25C–5.27C | ☐ Chemical cells produce voltage until reactant used up ☐ Hydrogen-oxygen fuel cell produces voltage and water only ☐ Strengths and weaknesses of fuel cells

Monday 18th May (AM)	**Chemistry Paper 1 Combined**

Topic 0 – Formulae, equations and hazards
0.1–0.4 | ☐ Formulae of elements, simple compounds and ions ☐ Word equations ☐ Balanced symbol equations with state symbols (s), (l), (g), (aq) ☐ HT: ionic equations
0.5–0.6 | ☐ Hazard symbols (dangers and safe precautions) ☐ Risk evaluation and practical precautions

Topic 1 – Key Concepts in Chemistry
1A: Atomic Structure
1.1–1.6 | ☐ Dalton model changes ☐ Atom structure: nucleus (protons, neutrons), electrons in shells ☐ Charges and masses of subatomic particles ☐ Equal protons/electrons ☐ Small nucleus, most mass in nucleus

1.7–1.12 | ☐ Mass number ☐ Elements = same proton number ☐ Isotopes (same protons, different neutrons) ☐ Calculations (protons, neutrons, electrons) ☐ Relative atomic mass ☐ HT: isotope calculations

1B: The Periodic Table

1.13–1.20 | ☐ Mendeleev's table and predictions ☐ Atomic number = protons ☐ Periods and groups ☐ Metals vs non-metals ☐ Electronic configurations (first 20) ☐ Link to position

1C: Ionic Bonding

1.21–1.27 | ☐ Ionic bonding: electron transfer, ions (cations/anions) ☐ Dot and cross diagrams ☐ Ion calculations ☐ Groups 1,2,6,7 ☐ -ide / -ate naming ☐ Ionic formulae ☐ Giant ionic lattice (strong electrostatic forces)

1D: Covalent Bonding

1.28–1.31 | ☐ Covalent bonding: shared electrons ☐ Molecules ☐ Size of atoms and molecules
1.32–1.34 | ☐ Simple molecules: hydrogen, HCl, water, methane, oxygen, CO_2

1E: Types of Substance

1.32–1.34 | ☐ Ionic, simple molecular, giant covalent, metallic ☐ Properties: melting point, solubility, conductivity
1.35–1.38 | ☐ Graphite, diamond ☐ Structure and uses ☐ Fullerenes, graphene
1.39–1.42 | ☐ Polymers ☐ Metals: malleable, conduct electricity ☐ Models (dot and cross, ball and stick) ☐ Metals vs non-metals properties

1F: Calculations Involving Masses

1.43–1.48 | ☐ Relative formula mass ☐ Empirical formula ☐ Molecular formula ☐ Magnesium oxide experiment ☐ Conservation of mass ☐ Mass calculations
1.49–1.53 (HT) | ☐ Concentration (g dm^{-3}) ☐ Moles (Avogadro's number) ☐ Mole calculations ☐ Limiting reactant ☐ Stoichiometry

Topic 2 – States of Matter and Mixtures

2A: States of Matter

2.1–2.4 | ☐ Particle model: solids, liquids, gases ☐ State changes (physical) ☐ Energy and movement ☐ Predict state

2B: Separating Mixtures

2.5–2.8 | ☐ Pure vs mixture ☐ Melting point data ☐ Separation methods: distillation, filtration, crystallisation, chromatography
2.9–2.12 | ☐ Chromatography (mobile/stationary phase) ☐ Rf values ☐ Core practical ☐ Water purification ☐ Distillation

Topic 3 – Chemical Changes

3A: Acidss

3.1–3.4 | ☐ Acids (H^+), alkalis (OH^-) ☐ pH scale ☐ Indicators ☐ HT: pH and ion concentration
3.5–3.10 | ☐ Strong vs weak ☐ Dilute vs concentrated ☐ Bases and alkalis
3.11–3.14 | ☐ Reactions: metals, oxides, hydroxides, carbonates ☐ Tests: hydrogen, CO_2 ☐ Neutralisation
3.15–3.18 | ☐ Salt preparation (insoluble vs soluble) ☐ Core practical: copper sulfate ☐ Titration
3.19–3.21 | ☐ Solubility rules ☐ Precipitation ☐ Insoluble salt method

3B: Electrolysis

3.22–3.26 | ☐ Electrolytes ☐ Electrolysis process ☐ Ion movement ☐ Products ($CuCl_2$, NaCl, water, $PbBr_2$)
3.27–3.29 (HT) | ☐ Half equations ☐ Oxidation/reduction (electrons)
3.30–3.31 | ☐ Copper purification ☐ Core practical

Topic 4 – Extracting Metals and Equilibria

4A: Obtaining Metals

4.1–4.4 | ☐ Reactivity series ☐ Displacement ☐ Metals from ores
4.5–4.8 | ☐ Oxidation/reduction (oxygen) ☐ Extraction methods: carbon, electrolysis ☐ HT: bioleaching
4.9–4.12 | ☐ Corrosion resistance ☐ Recycling ☐ Life-cycle assessment

4B: Reversible Reactions
4.13–4.15 | ☐ Reversible reactions ⇌ ☐ Dynamic equilibrium
4.16–4.17 | ☐ Haber process (450°C, 200 atm, iron) ☐ HT: effect of temperature, pressure, concentration

Monday 18th May (PM)	**Chinese Writing**

Tuesday 19th May (AM)	**English Literature Paper 2**

Section A: An Inspector Calls – Understanding the plot/ characters | ☐ Understanding the plot/ characters
An Inspector Calls – Quotes | ☐ Memorising and knowing quotes
An Inspector Calls – Motifs | ☐ photograph ☐ drink ☐ money
An Inspector Calls – Features of a play | ☐ Features of a play ☐ Significance of stage directions
An Inspector Calls – Themes | ☐ gender ☐ class ☐ social responsibility ☐ power ☐ old v young
An Inspector Calls – Ideas & Context | ☐ Capitalism vs Socialism ☐ Inspector as a mouthpiece ☐ Dramatic irony ☐ 20th century ☐ working conditions ☐ Titanic ☐ UK political structure/ class structures

Section B: Power and Conflict poetry – Knowledge | ☐ Context ☐ themes ☐ language ☐ structure
Power and Conflict poetry – Essay Skills | ☐ Crafting thesis statements ☐ Writing topic sentences linked to thesis statements ☐ Planning essays using Big Ideas ☐ Crafting an argument – a 'thread'

Section C: Unseen Poetry – Writing Skills | ☐ Crafting thesis statements ☐ Writing topic sentences linked to thesis statements ☐ Planning essays using Big Ideas ☐ Meaning, message, mood ☐ Methods
Unseen Poetry – Analysis Skills | ☐ Approaching unseen poems- begin with title ☐ Comparing unseen poems ☐ Methods and techniques in poetry ☐ Structural techniques

Tuesday 19th May (PM)	**Computer Science Paper 2**

Computational thinking
☐ Principles of computational thinking: Abstraction ☐ Decomposition ☐ Algorithmic thinking

Programming fundamentals
☐ The use of variables, constants, operators, inputs, outputs and ☐ The use of the three basic programming constructs used to control the flow of a program: Sequence ☐ Selection ☐ The common Boolean operators AND, OR and NOT ☐ Iteration (count- and condition-controlled loops) ☐ String Manipulation ☐ Random number ☐ Data types: Integer ☐ Real ☐ Boolean ☐ Character ☐ String
☐ Arithmetic operators: + ☐ − ☐ × ☐ ÷ ☐ MOD ☐ DIV
☐ Comparison operators: = ☐ ≠ ☐ < ☐ > ☐ ≤ ☐ ≥ ☐ Casting (type conversion)

Designing, creating and refining algorithms
☐ Identify the inputs, processes, and outputs for a problem ☐ Structure diagrams ☐ Create, interpret, correct, complete, and refine algorithms using: Pseudocode ☐ Flowcharts ☐ Reference language/high-level programming language ☐ Identify common errors ☐ Trace tables

Programming Techniques
☐ The use of records to store data ☐ The use of SQL to search for data ☐ The use of arrays (or equivalent) when solving problems, including both one-dimensional (1D) and two-dimensional arrays (2D)
☐ Subprograms: Procedures ☐ Functions ☐ Parameters ☐ Return values
☐ File handling: Reading from a file ☐ Writing to a file

Producing Robust Programs
☐ Defensive Design ☐ Testing ☐ Anticipating Misuse ☐ Authentication ☐ Indentation ☐ Commenting ☐ Selecting & using suitable test data ☐ Validation: Range ☐ Type ☐ Length ☐ Presence checks ☐ Verification: Double entry ☐ Proofreading

Additional Concepts ☐ Use of an Integrated Development Environment (IDE)

Wednesday 20th May (AM)	**French Listening**

Theme 1: My Personal World

☐ Me, my family and friends ☐ Relationships ☐ Marriage/ ☐ Free-time activities ☐ Music ☐ Cinema and TV ☐ Sport☐ Customs and festivals in French-speaking countries/communities

Theme 2: Lifestyle and Wellbeing

☐ Food and eating out, ☐ mental health, ☐wellbeing, ☐healthy eating, ☐ illnesses and injury

Theme 3:My Neigbourhood

☐ Home, town, neighbourhood and region ☐ Social issues ☐ Charity/voluntary work ☐ Global issues ☐ Environment

Theme 4:Media and Technology

☐ Technology in everyday life ☐ Social media ☐ Mobile technology ☐ role models

Theme 5: Study and Future Plans

☐ School day ☐ Subjects ☐ Rules ☐ Pressures ☐ Success ☐ School activities ☐ Trips ☐ Events ☐ Exchanges☐ Using languages beyond the classroom ☐ Career plans ☐ Jobs ☐ Work experience ☐ Part-time jobs☐ Further study ☐ Ambitions ☐ Advantages/disadvantages of jobs

Theme 6 :Travel and Tourism

☐ Travel and tourism ☐ Holidays ☐ Accommodation ☐ Shopping ☐ Directions

Wednesday 20th May (PM)	**Religious Studies Paper 2**

Theme A: Relationships and families

☐ Human sexuality: heterosexual and homosexual relationships (Christianity & Islam) ☐ Sexual relationships before and outside marriage ☐ Contraception and family planning

☐ Marriage: nature and purpose ☐ Same-sex marriage and cohabitation ☐ Divorce and remarriage, ethical arguments (sanctity of marriage, compassion)

☐ Families: nature (roles of parents/children, extended and nuclear) ☐ purpose (procreation, stability, protection, educating in faith)

☐ Contemporary issues: same-sex parents, polygamy ☐ gender roles, equality, prejudice and discrimination

---

Theme B: Religion and life

☐ Origins of the universe: religious teachings, interpretations, relationship with science (Big Bang)

☐ Value of the world: stewardship, dominion, responsibility, awe and wonder

☐ Environment: use and abuse of resources, pollution ☐ Animals: experimentation and food use (Christianity & Islam)

☐ Origins of life: religious teachings and interpretations, relationship with evolution

☐ Sanctity and quality of life ☐ Abortion (including risk to mother, ethical arguments) ☐ Euthanasia

☐ Beliefs about death and afterlife and impact on views of human life

---

Theme D: Religion, peace and conflict

☐ Peace, justice, forgiveness, reconciliation ☐ Violence and terrorism ☐ War: reasons (greed, self-defence, retaliation), just war theory, holy war, pacifism ☐ Religion as a cause of war and violence

☐ Weapons of mass destruction, nuclear weapons, deterrence, use (Christianity & Islam)

☐ Religion and peace-making, including individuals ☐ Religious responses to victims of war (organisations)

Theme E: Religion, crime and punishment

☐ Good and evil intentions and actions ☐ Causes of crime: poverty, upbringing, mental illness, addiction, greed, hate, unjust laws ☐ Views on lawbreakers ☐ Types of crime (hate crime, theft, murder)

☐ Aims of punishment: retribution, deterrence, reformation ☐ Treatment of criminals: prison, corporal punishment, community service ☐ Forgiveness ☐ Death penalty: ethical arguments (utility, sanctity of life)

Thursday 21st May (AM)	**English Language Paper 1**

Section A: Reading (Fiction Extract) ☐ Check and Line ☐ Topic and Tone ☐ Big Ideas

Q1: Identify information |☐ Explicit information ☐ Retrieval from given lines

Q2: Language analysis | ☐ Word choice ☐ Imagery (simile, metaphor, personification) ☐ Language techniques ☐ Effects on reader

Q3: Structure analysis | ☐ Opening focus ☐ Shifts in focus ☐ Zoom in ☐ Zoom out ☐ Contrast ☐ Narrative perspective ☐ Ending impact
Q4: Evaluation | ☐ Agree/disagree with statement ☐ Judgement ☐ Evidence ☐ Analysis of writer's methods

Section B: Creative Writing (Opening Writing)
Story writing features | ☐ Tone ☐ Structure ☐ Extended metaphor ☐ Motifs ☐ Symbolism
Vary Sentence Lengths | ☐ One word ☐ Short ☐ Long
Structure of a strong response | ☐ Clear beginning ☐ Developed middle ☐ Controlled ending ☐ Paragraphing
Audience awareness | ☐ Appropriate tone ☐ Engaging opening ☐ Consistent viewpoint
Language | ☐ Ambitious vocabulary ☐ Varied sentence starters ☐ Imagery ☐ Sensory detail
Narrative structure | ☐ Freytag's Pyramid (exposition ☐ rising action ☐ climax ☐ falling action ☐ resolution)
Descriptive techniques | ☐ Zoom in ☐ Zoom out ☐ Show not tell ☐ Pathetic fallacy ☐ Contrast

Thursday 21st May (PM)	**Business Paper 2**

2.1.1 Business growth | ☐ internal (organic) growth: new products (innovation, research and development) ☐ new markets (through changing the marketing mix or taking advantage of technology and/or expanding overseas) ☐ external (inorganic) growth: merger ☐ takeover ☐ public limited company (plc) ☐ internal sources: retained profit ☐ selling assets ☐ external sources: loan capital ☐ share capital ☐ stock market flotation
2.1.2 Changes in business aims and objectives | ☐ market conditions ☐ technology ☐ performance ☐ legislation ☐ internal reasons ☐ focus on survival ☐ growth ☐ entering markets ☐ exiting markets ☐ growing workforce ☐ reducing workforce ☐ increasing product range ☐ decreasing product range
2.1.3 Business and globalisation | ☐ imports ☐ competition from overseas ☐ buying from overseas ☐ exports ☐ selling to overseas markets ☐ changing business locations ☐ multinationals ☐ tariffs ☐ trade blocs ☐ internet ☐ e-commerce ☐ changing the marketing mix
2.1.4 Ethics, the environment and business | ☐ ethical considerations ☐ trade-offs between ethics and profit ☐ pressure group activity ☐ impact on the marketing mix ☐ environmental considerations ☐ sustainability ☐ trade-offs between the environment and profit
2.2.1 Product | ☐ function ☐ aesthetics ☐ cost ☐ phases of the product life cycle ☐ extension strategies ☐ differentiating a product/service
2.2.2 Price | ☐ pricing strategies ☐ technology ☐ competition ☐ market segments ☐ product life cycle
2.2.3 Promotion | ☐ advertising ☐ sponsorship ☐ product trials ☐ special offers ☐ branding ☐ targeted advertising online ☐ viral advertising via social media ☐ e-newsletters
2.2.4 Place | ☐ retailers ☐ e-tailers (e-commerce)
2.2.5 Using the marketing mix to make business decisions | ☐ influence of each element ☐ integrated marketing mix ☐ competitive advantage
2.3.1 Business operations | ☐ to produce goods ☐ to provide services ☐ job ☐ batch ☐ flow ☐ productivity ☐ costs ☐ competitive prices ☐ technology ☐ cost ☐ quality ☐ flexibility
2.3.2 Working with suppliers | ☐ bar gate stock graphs ☐ just in time (JIT) stock control ☐ logistics ☐ supply decisions ☐ costs ☐ reputation ☐ customer satisfaction
2.3.3 Managing quality | ☐ quality ☐ delivery (cost, speed, reliability) ☐ availability ☐ cost ☐ trust ☐ quality control ☐ quality assurance ☐ costs ☐ competitive advantage
2.3.4 The sales process | ☐ product knowledge ☐ speed ☐ efficiency of service ☐ customer engagement ☐ responses to customer feedback ☐ post-sales service ☐ customer service

2.4.1 Business calculations | ☐ gross profit ☐ net profit ☐ gross profit margin ☐ net profit margin ☐ average rate of return
2.4.2 Understanding business performance | ☐ graphs ☐ charts ☐ financial data ☐ marketing data ☐ market data ☐ limitations of financial information ☐ business performance ☐ business decisions

2.5.1 Organisational structures | ☐ hierarchical ☐ flat ☐ centralised ☐ decentralised ☐ communication ☐ technology ☐ efficiency ☐ remote working
2.5.2 Effective recruitment | ☐ insufficient communication ☐ excessive communication ☐ efficiency ☐ motivation ☐ barriers to communication ☐ part-time ☐ full-time ☐ flexible hours ☐ permanent ☐ temporary ☐ freelance ☐ directors ☐ senior managers ☐ supervisors/team leaders ☐ operational staff ☐ support staff ☐ internal recruitment ☐ external recruitment

2.5.3 Effective training and development | ☐ person specification ☐ job description ☐ application form ☐ CV ☐ formal training ☐ informal training ☐ self-learning ☐ ongoing training ☐ target setting ☐ performance reviews ☐ motivation ☐ retention ☐ retraining

2.5.4 Motivation | ☐ attracting employees ☐ retaining employees ☐ productivity ☐ job rotation ☐ job enrichment ☐ autonomy ☐ remuneration ☐ bonus ☐ commission ☐ promotion ☐ fringe benefits

Thursday 21st May (PM)	**Film Studies Paper 2**

Slumdog Millionaire – Narrative (Todorov, Propp, Binary oppositions and Enigma codes, linear and non linear) Film Form and Context | ☐ Narrative (Todorov, Propp, Binary oppositions and Enigma codes, linear and non linear) ☐ Film Form ☐ Context

Tsotsi – Representation, Film Form, Context | ☐ Representation ☐ Film Form ☐ Context

Attack the Block – Aesthetics, Film Form, Context | ☐ Aesthetics ☐ Film Form ☐ Context

Friday 22nd May (AM)	**Arabic Listening and Reading. Italian Listening and Reading**
Friday 22nd May (PM)	**Turkish Writing**
Monday 1st June (AM)	**Italian Writing**
Tuesday 2nd June (AM)	**Physics Paper 1 separate**

Topic 1 – Key Concepts of Physics

1.1–1.4 | ☐ SI units: metres (m), kilograms (kg), seconds (s), amperes (A), kelvin (K), moles (mol) ☐ Multiples and sub-multiples: giga, mega, kilo, centi, milli, micro, nano ☐ Convert between units, including hours to seconds ☐ Significant figures and standard form

---

Topic 2 – Motion and Forces

2.1–2.5 | ☐ Scalar quantities ☐ Vector quantities ☐ Difference between scalar and vector ☐ Displacement/distance ☐ Velocity/speed ☐ Acceleration ☐ Force ☐ Weight/mass ☐ Momentum ☐ Energy ☐ Velocity = speed in a stated direction

2.6–2.10 | ☐ Speed equations ☐ Distance/time graphs ☐ Acceleration equation ☐ Final velocity^2 – initial velocity^2 = 2 × acceleration × distance ☐ Velocity/time graphs: gradients and area under graph

2.11–2.13 | ☐ Methods of measuring speed, including light gates ☐ Typical everyday speeds ☐ Free fall acceleration g = 10 m/s^2 ☐ Estimate everyday accelerations

2.14–2.19 | ☐ Newton's first law ☐ Resultant force = 0 or not 0 ☐ Newton's second law F = m × a ☐ Weight = mass × gravitational field strength ☐ Measuring weight ☐ Relationship between weight and gravitational field strength ☐ Core Practical: force, mass and acceleration with trolleys

2.20–2.26 (HT) | ☐ Circular motion and changing velocity ☐ Centripetal force ☐ Inertial mass ☐ Newton's third law ☐ Momentum = mass × velocity ☐ Momentum in collisions ☐ Force = change in momentum ÷ time

2.27–2.31 | ☐ Measuring reaction times ☐ Stopping distance = thinking distance + braking distance ☐ Factors affecting stopping distance ☐ Factors affecting reaction time, including drugs and distractions ☐ Dangers of large decelerations ☐ HT: estimate road forces

---

Topic 3 – Conservation of Energy

3.1–3.2 | ☐ Change in gravitational potential energy = mass × gravitational field strength × change in height ☐ Kinetic energy = 1/2 × mass × velocity^2

3.3–3.8 | ☐ Energy transfer diagrams ☐ Conservation of energy ☐ Energy stores in systems changing ☐ Closed systems and no net change in total energy ☐ Dissipation ☐ Mechanical processes becoming wasteful ☐ Energy stored in less useful ways

3.9–3.12 | ☐ Reduce unwanted energy transfer: lubrication and thermal insulation ☐ Thickness and thermal conductivity and cooling ☐ Efficiency equation ☐ Increasing efficiency

3.13–3.14 | ☐ Energy sources: fossil fuels, nuclear fuel, bio-fuel, wind, hydroelectricity, tides, Sun ☐ Renewable and non-renewable sources ☐ Patterns and trends in energy use

---

Topic 4 – Waves

4.1–4.6 | ☐ Waves transfer energy and information without transferring matter ☐ Evidence from water and sound waves ☐ Frequency ☐ Wavelength ☐ Amplitude ☐ Period ☐ Wave velocity ☐ Wavefront ☐ Longitudinal and transverse waves ☐ Wave equation $v = f \times \lambda$ ☐ Velocity = distance ÷ time
4.7–4.11 | ☐ Measuring speed of sound in air and ripples on water ☐ Refraction at a boundary: change of direction and speed ☐ HT: absorption, transmission, refraction and reflection vary with wavelength
4.12–4.16 (Separate extras if on your spec) | ☐ Properties and uses of ultrasound ☐ Seismic waves ☐ P waves and S waves ☐ Reflection and refraction applications ☐ Wave behaviour in different media
4.17 | ☐ Core Practical: measure speed, frequency and wavelength of a wave in a solid and a fluid

Topic 5 – Light and the Electromagnetic Spectrum
5.1–5.6 (Separate light content) | ☐ Reflection ☐ Refraction ☐ Refractive index ☐ Total internal reflection ☐ Critical angle ☐ Convex lenses and image formation ☐ Ray diagrams ☐ Visible light and colour ☐ Black body radiation basics if included
5.7–5.14 | ☐ All electromagnetic waves are transverse ☐ Travel in a vacuum at the same speed ☐ Transfer energy ☐ Core Practical: refraction in rectangular glass blocks ☐ Spectrum order: radio, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays ☐ Continuous spectrum ☐ Visible light is limited range ☐ HT: substances absorb, transmit, refract or reflect EM waves differently ☐ HT: effects of different wave velocities in substances
5.20–5.24 | ☐ Danger increases with increasing frequency ☐ Harmful effects of microwaves, infrared, ultraviolet, X-rays and gamma rays ☐ Uses of radio waves, microwaves, infrared, visible light, ultraviolet, X-rays and gamma rays ☐ HT: radio waves and oscillations in electrical circuits ☐ Changes in atoms and nuclei generating or absorbing radiation

Topic 6 – Radioactivity
6.1–6.9 | ☐ Atom structure: positively charged nucleus with protons and neutrons, electrons around nucleus ☐ Nuclear radius much smaller than atom ☐ Most mass in nucleus ☐ Typical size of atoms and molecules ☐ Isotopes: atomic (proton) number and mass (nucleon) number ☐ Nucleus charge and isotopes ☐ Relative masses and charges of protons, neutrons, electrons, positrons ☐ Neutral atoms ☐ Electrons in set orbits ☐ Electrons change orbit by absorbing or emitting EM radiation ☐ Positive ions form by losing outer electrons
6.10–6.17 | ☐ Alpha, beta minus, beta plus, gamma and neutron radiation from unstable nuclei ☐ Ionising radiations ☐ Background radiation and its origins ☐ Detecting radioactivity: photographic film and Geiger-Muller tube ☐ Alpha particle = helium nucleus ☐ Beta particle = electron from nucleus ☐ Gamma ray = electromagnetic radiation ☐ Penetration and ionisation of alpha, beta and gamma ☐ Atomic model changes: plum pudding, Rutherford scattering, Bohr model
6.18–6.22 | ☐ Beta minus decay ☐ Beta plus decay ☐ Changes to proton number and nucleon number in alpha, beta, gamma and neutron emission ☐ Gamma emission after nuclear rearrangement ☐ Balance nuclear equations
6.23–6.27 | ☐ Activity decreases over time ☐ Unit: Becquerels (Bq) ☐ Half-life definition ☐ Random decay and prediction using half-life ☐ Half-life calculations and graphs
6.28–6.32 (Separate extras if on your spec) | ☐ Nuclear fission ☐ Chain reactions ☐ Nuclear fusion ☐ Uses of radioactivity in medicine and industry ☐ Dangers of ionising radiation ☐ Precautions and safety ☐ Dose limits ☐ Contamination vs irradiation ☐ Compare hazards

Topic 7 – Astronomy
7.1–7.x | ☐ Solar system: Sun, planets, dwarf planets, moons, asteroids, comets ☐ Orbits ☐ Satellites ☐ Red-shift ☐ Big Bang theory ☐ Life cycle of stars ☐ Main sequence stars ☐ Red giants ☐ Supernovae ☐ White dwarfs ☐ Neutron stars ☐ Black holes ☐ Origin of elements ☐ Evidence for expansion of the universe

Tuesday 2nd June (AM)	**Physics Paper 1 combined**

Topic 1 – Key Concepts of Physics
1.1–1.4 | ☐ SI units: metres (m), kilograms (kg), seconds (s), amperes (A), kelvin (K), moles (mol) ☐ Multiples and sub-multiples: giga, mega, kilo, centi, milli, micro, nano ☐ Convert between units, including hours to seconds ☐ Significant figures and standard form

Topic 2 – Motion and Forces

2.1–2.5 | ☐ Scalar quantities ☐ Vector quantities ☐ Difference between scalar and vector ☐ Displacement/distance ☐ Velocity/speed ☐ Acceleration ☐ Force ☐ Weight/mass ☐ Momentum ☐ Energy ☐ Velocity = speed in a stated direction
2.6–2.10 | ☐ Speed equations ☐ Distance/time graphs ☐ Acceleration equation ☐ Final velocity^2 – initial velocity^2 = 2 × acceleration × distance ☐ Velocity/time graphs: gradients and area under graph
2.11–2.13 | ☐ Methods of measuring speed, including light gates ☐ Typical everyday speeds ☐ Free fall acceleration g = 10 m/s^2 ☐ Estimate everyday accelerations
2.14–2.19 | ☐ Newton's first law ☐ Resultant force = 0 or not 0 ☐ Newton's second law F = m × a ☐ Weight = mass × gravitational field strength ☐ Measuring weight ☐ Relationship between weight and gravitational field strength ☐ Core Practical: force, mass and acceleration with trolleys
2.20–2.26 (HT) | ☐ Circular motion and changing velocity ☐ Centripetal force ☐ Inertial mass ☐ Newton's third law ☐ Momentum = mass × velocity ☐ Momentum in collisions ☐ Force = change in momentum ÷ time
2.27–2.31 | ☐ Measuring reaction times ☐ Stopping distance = thinking distance + braking distance ☐ Factors affecting stopping distance ☐ Factors affecting reaction time, including drugs and distractions ☐ Dangers of large decelerations ☐ HT: estimate road forces

---

Topic 3 – Conservation of Energy
3.1–3.2 | ☐ Change in gravitational potential energy = mass × gravitational field strength × change in height ☐ Kinetic energy = 1/2 × mass × velocity^2
3.3–3.8 | ☐ Energy transfer diagrams ☐ Conservation of energy ☐ Energy stores in systems changing ☐ Closed systems and no net change in total energy ☐ Dissipation ☐ Mechanical processes becoming wasteful ☐ Energy stored in less useful ways
3.9–3.12 | ☐ Reduce unwanted energy transfer: lubrication and thermal insulation ☐ Thickness and thermal conductivity and cooling ☐ Efficiency equation ☐ Increasing efficiency
3.13–3.14 | ☐ Energy sources: fossil fuels, nuclear fuel, bio-fuel, wind, hydroelectricity, tides, Sun ☐ Renewable and non-renewable sources ☐ Patterns and trends in energy use

---

Topic 4 – Waves
4.1–4.6 | ☐ Waves transfer energy and information without transferring matter ☐ Evidence from water and sound waves ☐ Frequency ☐ Wavelength ☐ Amplitude ☐ Period ☐ Wave velocity ☐ Wavefront ☐ Longitudinal and transverse waves ☐ Wave equation $v = f \times \lambda$ ☐ Velocity = distance ÷ time
4.7–4.11 | ☐ Measuring speed of sound in air and ripples on water ☐ Refraction at a boundary: change of direction and speed ☐ HT: absorption, transmission, refraction and reflection vary with wavelength
4.17 | ☐ Core Practical: measure speed, frequency and wavelength of a wave in a solid and a fluid

---

Topic 5 – Electromagnetic Spectrum
5.7–5.14 | ☐ All electromagnetic waves are transverse ☐ Travel in a vacuum at the same speed ☐ Transfer energy ☐ Core Practical: refraction in rectangular glass blocks ☐ Spectrum order: radio, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays ☐ Continuous spectrum ☐ Visible light is limited range ☐ HT: substances absorb, transmit, refract or reflect EM waves differently ☐ HT: effects of different wave velocities in substances
5.20–5.24 | ☐ Danger increases with increasing frequency ☐ Harmful effects of microwaves, infrared, ultraviolet, X-rays and gamma rays ☐ Uses of radio waves, microwaves, infrared, visible light, ultraviolet, X-rays and gamma rays ☐ HT: radio waves and oscillations in electrical circuits ☐ Changes in atoms and nuclei generating or absorbing radiation

---

Topic 6 – Radioactivity
6.1–6.9 | ☐ Atom structure: positively charged nucleus with protons and neutrons, electrons around nucleus ☐ Nuclear radius much smaller than atom ☐ Most mass in nucleus ☐ Typical size of atoms and molecules ☐ Isotopes: atomic (proton) number and mass (nucleon) number ☐ Nucleus charge and isotopes ☐ Relative masses and charges of protons, neutrons, electrons, positrons ☐ Neutral atoms ☐ Electrons in set orbits ☐ Electrons change orbit by absorbing or emitting EM radiation ☐ Positive ions form by losing outer electrons
6.10–6.17 | ☐ Alpha, beta minus, beta plus, gamma and neutron radiation from unstable nuclei ☐ Ionising radiations ☐ Background radiation and its origins ☐ Detecting radioactivity: photographic film and Geiger-Muller tube ☐ Alpha particle = helium nucleus ☐ Beta particle = electron from nucleus ☐ Gamma ray =

electromagnetic radiation ☐ Penetration and ionisation of alpha, beta and gamma ☐ Atomic model changes: plum pudding, Rutherford scattering, Bohr model
6.18–6.22 | ☐ Beta minus decay ☐ Beta plus decay ☐ Changes to proton number and nucleon number in alpha, beta, gamma and neutron emission ☐ Gamma emission after nuclear rearrangement ☐ Balance nuclear equations
6.23–6.27 | ☐ Activity decreases over time ☐ Unit: Becquerels (Bq) ☐ Half-life definition ☐ Random decay and prediction using half-life ☐ Half-life calculations and graphs
6.29–6.32 | ☐ Dangers of ionising radiation: tissue damage and mutations ☐ Precautions and safety ☐ Dose limits ☐ Contamination vs irradiation ☐ Compare hazards

Tuesday 2nd June (PM)	**Polish and Portuguese Listening and Reading. Arabic Writing**
Wednesday 3rd June (AM)	**Maths Paper 2 – Calculator**
See Maths Thursday 14th May (AM)	
Wednesday 3rd June (PM)	**Geography People and Society**

Topic 5 Urban Futures - Why do more than half the world's population live in urban areas?
a. How is the global pattern of urbanisation changing? | ☐ urban growth rates ☐ countries at different stages of development ☐ world cities ☐ mega cities ☐ distribution of mega cities since 1950
b. What does rapid urbanisation mean for cities? | ☐ push factors ☐ pull factors ☐ consequences of rapid urbanisation in LIDCs ☐ suburbanisation ☐ counter-urbanisation ☐ re-urbanisation

What are the challenges and opportunities for cities today? – CASE STUDY LONDON – a. What is life like for people in London? | ☐ London location ☐ regional ☐ national ☐ global ☐ migration ☐ culture ☐ ethnicity ☐ housing ☐ leisure ☐ consumption ☐ transport ☐ housing availability ☐ access to services ☐ inequality
b. How can London become more sustainable? | ☐ BEDZED ☐ Cross Rail ☐ ULEZ ☐ cleaner buses

CASE STUDY LAGOS – a. What is life like for people in Lagos? | ☐ Lagos location ☐ regional ☐ national ☐ global ☐ migration ☐ culture ☐ ethnicity ☐ housing ☐ leisure ☐ consumption ☐ slums ☐ informal work ☐ waste disposal ☐ health
b. How can Lagos become more sustainable? | ☐ Lagos State Integrated Waste Management Project ☐ Makoko Floating School ☐ Water Supply Regulation ☐ Bus Rapid Transit System

---

Topic 6 Dynamic Development – 6.1 Why are some countries richer than others? – What is development and how can it be measured? | ☐ development definition ☐ ACs ☐ EDCs ☐ LIDCs ☐ global distribution ☐ birth rate ☐ death rate ☐ life expectancy ☐ infant mortality rate ☐ literacy rate ☐ absolute poverty ☐ relative poverty ☐ quality of life ☐ standard of living ☐ Human Development Index ☐ GNI ☐ GDP ☐ human factors ☐ physical factors
Why is it hard for countries to break out of poverty? | ☐ debt ☐ trade ☐ political unrest
Are LIDCs likely to stay poor? – CASE STUDY ETHIOPIA – How has Ethiopia developed so far? | ☐ Rostow's model ☐ Millennium Development Goals ☐ political context ☐ social context ☐ environmental context
What global connections influence Ethiopia's development? | ☐ international trade ☐ exports ☐ imports ☐ TNCs ☐ advantages ☐ disadvantages ☐ aid ☐ debt relief ☐ advantages ☐ disadvantages
What development strategy is most appropriate? | ☐ top down strategies ☐ bottom up strategies ☐ advantages ☐ disadvantages

---

Topic 7 UK in the 21st century – 7.1 How is the UK changing in the 21st Century? – What does the UK look like in the 21st century? | ☐ population density ☐ land use ☐ rainfall ☐ relief ☐ water stress ☐ housing shortages
How is the UK's population changing? | ☐ population trends since 2001 ☐ population pyramid ☐ migration data ☐ demographic transition model ☐ ageing population ☐ causes ☐ effects ☐ distribution ☐ responses ☐ London population structure ☐ ethnic diversity
How is the economy of the UK changing? | ☐ employment sectors ☐ core economic hubs ☐ Oxford economic hub ☐ importance
Is the UK losing its global significance? – What is the political role of the UK in the world? | ☐ war in Somalia

How is the UK's cultural influence changing? | ☐ media exports ☐ Peppa Pig ☐ Britain's Got Talent ☐ James Bond ☐ cultural contributions ☐ China Town ☐ Brick Lane ☐ Green Lane
What development strategy is most appropriate? | ☐ top down strategies ☐ bottom up strategies ☐ advantages ☐ disadvantages

---

Topic 8 Resource Reliance – 8.1 Will we run out of natural resources? – How has increasing demand for resources affected our planet? | ☐ demand for food ☐ energy ☐ water ☐ mechanisation of farming ☐ commercial fishing ☐ deforestation ☐ mining ☐ reservoirs ☐ water transfer
8.2 Can we feed 9 billion people by 2050? – What does it mean to be food secure? | ☐ climate ☐ extreme weather ☐ water stress ☐ pests and diseases ☐ poverty ☐ technology ☐ conflict ☐ over-farming ☐ food prices ☐ global food index ☐ hunger ☐ calorie intake ☐ Malthus ☐ Boserup
How can countries ensure their food security? – CASE STUDY UK | ☐ food consumption ☐ availability ☐ food banks ☐ allotments ☐ urban gardens ☐ national strategies ☐ effectiveness
How sustainable are these strategies? | ☐ ethical consumerism ☐ fair trade ☐ food waste ☐ organic farming ☐ intensive farming ☐ GM crops ☐ hydroponics ☐ urban gardens ☐ permaculture

Thursday 4th June (AM)	**History Paper Superpowers/Elizabethan**

Superpower relations and the Cold War (1941–91)
Origins of the Cold War (1941–58)
☐ Tehran ☐ Yalta ☐ Potsdam ☐ Ideological differences ☐ Truman Doctrine ☐ Marshall Plan ☐ Soviet expansion ☐ Satellite states ☐ Cominform ☐ Comecon
☐ Berlin Crisis 1948–49 ☐ Berlin Blockade ☐ Airlift ☐ Formation of alliances (NATO, Warsaw Pact) ☐ Hungarian Uprising

---

Cold War crises (1958–70)
☐ Berlin Crisis 1958–61 ☐ Berlin Wall ☐ Cuban Revolution ☐ Bay of Pigs invasion ☐ Cuban Missile Crisis ☐ Brinkmanship ☐ Prague Spring 1968 ☐ Brezhnev Doctrine

---

The end of the Cold War (1970–91)
☐ Détente ☐ SALT talks ☐ Helsinki Accords ☐Olympic boycotts ☐ End of détente ☐ Soviet invasion of Afghanistan ☐ Arms race ☐ SDI ☐ Glasnost ☐ Perestroika ☐ Collapse of Soviet control ☐ Fall of Berlin Wall ☐ End of USSR ☐ 1991 collapse

---

Elizabethan England (1558–88)
Queen, government and religion
☐ Elizabeth's background ☐ Problems in 1558 ☐ Legitimacy ☐ Gender ☐ Government ☐ Privy Council ☐ Parliament ☐ Role of councillors ☐ Religious settlement 1559 ☐ Act of Supremacy ☐ Act of Uniformity ☐ Royal Injunctions ☐ Religious divisions ☐ Catholics ☐ Puritans ☐ Challenges to settlement

---

Challenges to Elizabeth at home and abroad
☐ Catholic threat ☐ Recusancy ☐ Missionaries ☐ Jesuits ☐ Mary Queen of Scots ☐ Claim to throne ☐ Plots ☐ Execution ☐ Key plots ☐ Ridolfi ☐ Throckmorton ☐ Babington ☐ Spanish threat ☐ Philip II ☐ Tension with Spain ☐ Spanish Armada 1588 ☐ Causes ☐ Events ☐ Reasons for English victory

---

Elizabethan society in the Age of Exploration
☐ Social structure ☐ Nobility ☐ Gentry ☐ Poor ☐ Poverty ☐ Causes ☐ Vagabond laws ☐ Poor laws ☐ Exploration ☐ Drake ☐ Raleigh ☐ New World ☐ Roanoke colony ☐ Attempts ☐ Failure

Thursday 4th June (PM)	**French Reading**

Theme 1: My Personal World
☐ Me, my family and friends ☐ Relationships ☐ Marriage/ ☐ Free-time activities ☐ Music ☐ Cinema and TV ☐ Sport☐ Customs and festivals in French-speaking countries/communities
Theme 2: Lifestyle and Wellbeing
☐ Food and eating out, ☐ mental health, ☐wellbeing, ☐healthy eating, ☐ illnesses and injury
Theme 3:My Neigbourhood

☐ Home, town, neighbourhood and region ☐ Social issues ☐ Charity/voluntary work ☐ Global issues ☐ Environment

Theme 4:Media and Technology

☐ Technology in everyday life ☐ Social media ☐ Mobile technology ☐ role models

Theme 5: Study and Future Plans

☐ School day ☐ Subjects ☐ Rules ☐ Pressures ☐ Success ☐ School activities ☐ Trips ☐ Events ☐ Exchanges☐ Using languages beyond the classroom ☐ Career plans ☐ Jobs ☐ Work experience ☐ Part-time jobs☐ Further study ☐ Ambitions ☐ Advantages/disadvantages of jobs

Theme 6 :Travel and Tourism

☐ Travel and tourism ☐ Holidays ☐ Accommodation ☐ Shopping ☐ Directions

Friday 5th June (AM)	**English Language Paper 2**

Section A – Reading Skills – Reading strategies | ☐ Check and line ☐ Topic and tone ☐ Considering the big ideas in your extract: relationships ☐ power ☐ human nature ☐ race ☐ gender ☐ class ☐ nature

Question 1: Information retrieval (true/false) | ☐ Question 1: Information retrieval (true/false)

Question 2: Summary and comparison of ideas | ☐ SQI – Statement ☐ quote ☐ inference

Question 3: Language analysis | ☐ methods ☐ effects

Question 4: Comparison of viewpoints and attitudes | ☐ what ☐ how ☐ why

Practice Areas | ☐ Comparing 19th-century and modern non-fiction ☐ Identifying writer's tone and perspective ☐ Using precise textual evidence

---

Section B – Writing Skills – Techniques | ☐ Techniques to create provoking writing - extended metaphor ☐ motifs

Planning method | ☐ MESI (moral, economy, society and individual)

Sentence types and structure | ☐ compound ☐ complex ☐ simple ☐ Structure of a strong response

Audience awareness | ☐ Understanding of different readers/target audience within the questions

---

Writing Types | ☐ Article writing - features, tone, structure ☐ Letter writing - features, tone, structure ☐ Speeches- feature, tone, structure

Writing Focus | ☐ Expressing a clear viewpoint (argue/persuade) ☐ Rhetorical devices (triplets, direct address, emotive language) ☐ Figurative language ☐ Structuring ideas logically ☐ Varying sentence types and punctuation

Technical Accuracy | ☐ SPaG (spelling, punctuation, grammar) ☐ Paragraphing and cohesion

Common Practice Topics | ☐ Social media and society ☐ School rules or education reform ☐ Environment and responsibility ☐ Ambition, success, or failure

Monday 8th June (AM)	**Biology Paper 2 Separate**

Topic 6 (Plant structures and their functions)

Photosynthesis

☐ Photosynthetic organisms ☐ Main producers of food ☐ Biomass ☐ Photosynthesis in plants and algae ☐ Endothermic reaction ☐ Light energy ☐ Carbon dioxide ☐ Water ☐ Glucose ☐ Oxygen ☐ Limiting factors ☐ Temperature ☐ Light intensity ☐ Carbon dioxide concentration ☐ Interaction of temperature, light intensity and carbon dioxide concentration ☐ Core Practical ☐ Effect of light intensity on rate of photosynthesis ☐ Rate of photosynthesis ☐ Directly proportional to light intensity ☐ Inversely proportional to distance from light source ☐ Inverse square law

Plant transport and adaptations

☐ Root hair cells ☐ Adapted to absorb water and mineral ions ☐ Xylem ☐ Lignified dead cells ☐ Transport water and minerals ☐ Phloem ☐ Living cells ☐ Use energy ☐ Transport sucrose ☐ Transpiration ☐ Transport of water and mineral ions ☐ Stomata structure and function ☐ Translocation ☐ Sucrose transported around the plant ☐ Leaf structure ☐ Adapted for photosynthesis and gas exchange ☐ Environmental factors affecting water uptake ☐ Light intensity ☐ Air movement ☐ Temperature ☐ Rate calculations ☐ Transpiration ☐ Plants in extreme environments ☐ Leaf size and shape ☐ Cuticle ☐ Stomata ☐ Plant hormones ☐ Control and coordinate growth and development ☐ Auxins ☐ Phototropism ☐ Gravitropism ☐ Commercial uses of plant hormones ☐ Auxins in weedkillers and rooting powders ☐ Gibberellins in germination, fruit and flower formation and seedless fruit ☐ Ethene in fruit ripening

Biology – Topic 7 (Animal coordination, control and homeostasis)

Hormones and glands

☐ Hormones produced in endocrine glands ☐ Transported to target organs
☐ Pituitary gland ☐ Thyroid gland ☐ Pancreas ☐ Adrenal glands ☐ Ovaries ☐ Testes
☐ Adrenalin ☐ Fight or flight ☐ Increased heart rate ☐ Increased blood pressure ☐ Increased blood flow to muscles ☐ Increased blood sugar by liver converting glycogen to glucose
☐ Thyroxine ☐ Metabolic rate ☐ Negative feedback ☐ TRH ☐ TSH

Menstrual cycle and reproduction

☐ Menstrual cycle stages ☐ Oestrogen ☐ Progesterone ☐ Hormone interactions ☐ Oestrogen ☐ Progesterone ☐ FSH ☐ LH ☐ Repair and maintenance of uterus wall ☐ Ovulation ☐ Menstruation ☐ Hormonal contraception ☐ Influences menstrual cycle ☐ Prevents pregnancy ☐ Hormonal and barrier methods of contraception ☐ Evaluate ☐ Assisted Reproductive Technology (ART) ☐ IVF ☐ Clomifene therapy

Homeostasis, thermoregulation and osmoregulation

☐ Constant internal environment ☐ Importance of homeostasis
☐ Homeostasis ☐ Thermoregulation ☐ Effect on enzyme activity ☐ Osmoregulation ☐ Effect on animal cells
☐ Thermoregulation ☐ Skin ☐ Dermis ☐ Epidermis ☐ Hypothalamus
☐ Thermoregulation responses ☐ Shivering ☐ Vasoconstriction ☐ Vasodilation

Blood glucose and diabetes

☐ Insulin controls blood glucose concentration ☐ Glucagon regulates blood glucose concentration
☐ Type 1 diabetes ☐ Cause ☐ Control ☐ Type 2 diabetes ☐ Cause ☐ Control
☐ Correlation between body mass and type 2 diabetes ☐ Waist:hip calculations ☐ BMI

Urinary system

☐ Structure of urinary system
☐ Nephron structure related to function ☐ Filtration in glomerulus and Bowman's capsule ☐ Selective reabsorption of glucose ☐ Reabsorption of water ☐ ADH ☐ Permeability of collecting duct ☐ Regulates water content of blood ☐ Treatments for kidney failure ☐ Kidney dialysis ☐ Organ donation
☐ Urea ☐ Produced from breakdown of excess amino acids in liver

Biology – Topic 8 (Exchange and transport in animals)

Exchange surfaces

☐ Need to transport substances into and out of organisms ☐ Oxygen ☐ Carbon dioxide ☐ Water ☐ Dissolved food molecules ☐ Mineral ions ☐ Urea ☐ Exchange surfaces and transport systems in multicellular organisms ☐ Surface area: volume ratio ☐ Alveoli adapted for gas exchange by diffusion between air in lungs and blood in capillaries ☐ Factors affecting rate of diffusion ☐ Surface area ☐ Concentration gradient ☐ Diffusion distance ☐ Rate of diffusion ☐ Fick's law

Blood and circulation

☐ Blood structure related to function ☐ Red blood cells (erythrocytes) ☐ White blood cells (phagocytes and lymphocytes) ☐ Plasma ☐ Platelets ☐ Blood vessels ☐ Structure related to function
☐ Heart and circulatory system ☐ Major blood vessels ☐ Valves ☐ Relative thickness of chamber walls

Respiration and calculations

☐ Cellular respiration ☐ Exothermic reaction ☐ Releases energy for metabolic processes ☐ Aerobic respiration ☐ Anaerobic respiration ☐ Compare aerobic and anaerobic respiration ☐ Core Practical ☐ Rate of respiration in living organisms ☐ Heart rate ☐ Stroke volume ☐ Cardiac output ☐ cardiac output = stroke volume × heart rate

Biology – Topic 9 (Ecosystems and material cycles)

Ecosystems and communities

☐ Levels of organisation ☐ Individual organisms ☐ Populations ☐ Communities ☐ Whole ecosystem
☐ Communities affected by abiotic and biotic factors ☐ Temperature ☐ Light ☐ Water ☐ Pollutants ☐ Competition ☐ Predation ☐ Interdependence in a community ☐ Survival dependent on other species ☐ Parasitism ☐ Mutualism ☐ Core Practical ☐ Field-work techniques ☐ Quadrats ☐ Belt transects
☐ Determine number of organisms in an area using raw data from quadrats and belt transects

Food chains and biodiversity

☐ Energy transferred to less useful forms at each trophic level ☐ Affects number of organisms ☐ Limits food chain length ☐ Determines shape of pyramid of biomass
☐ Efficiency of energy transfers between trophic levels ☐ Percentage calculations of biomass
☐ Human interactions within ecosystems ☐ Fish farming ☐ Introduction of non-indigenous species ☐ Eutrophication

☐ Benefits of maintaining local and global biodiversity ☐ Conservation of animal species ☐ Reforestation ☐ Biological factors affecting food security ☐ Increasing human population ☐ Increasing animal farming and meat/fish consumption ☐ New pests and pathogens ☐ Environmental change caused by human activity ☐ Sustainability issues ☐ Biofuel production ☐ Cost of agricultural inputs

Material cycles and decomposition

☐ Materials cycle through abiotic and biotic components of an ecosystem
☐ Carbon cycle ☐ Processes involved ☐ Microorganisms as decomposers
☐ Water cycle ☐ Processes involved ☐ Potable water ☐ Desalination in drought areas
☐ Nitrates made available for plant uptake ☐ Fertilisers ☐ Crop rotation ☐ Bacteria in nitrogen cycle
☐ Indicator species as evidence of pollution ☐ Polluted water ☐ Bloodworm ☐ Sludgeworm ☐ Clean water ☐ Freshwater shrimps ☐ Stonefly ☐ Air quality ☐ Different species of lichen ☐ Blackspot fungus on roses
☐ Effects of temperature, water content and oxygen availability on rate of decomposition in food preservation
☐ Effects of temperature, water content and oxygen availability on rate of decomposition in composting
☐ Calculate rate changes in decay of biological material

Monday 8th June (AM)	**Biology Paper 2 Combined**

Topic 6 (Plants: Photosynthesis & Transport)

Photosynthesis

☐ Photosynthetic organisms ☐ Producers ☐ Biomass ☐ Photosynthesis ☐ Endothermic reaction ☐ Light energy ☐ Carbon dioxide + water → glucose + oxygen ☐ Limiting factors ☐ Temperature ☐ Light intensity ☐ Carbon dioxide concentration ☐ Interaction of limiting factors ☐ Core Practical ☐ Effect of light intensity on the rate of photosynthesis ☐ Rate of photosynthesis ☐ Directly proportional to light intensity ☐ Inversely proportional to distance ☐ Inverse square law

Plant transport

☐ Root hair cells ☐ Adaptations ☐ Absorbing water and mineral ions ☐ Xylem ☐ Lignified dead cells ☐ Transport water and minerals ☐ Phloem ☐ Living cells ☐ Uses energy ☐ Transport sucrose
☐ Transpiration ☐ Movement of water ☐ Role of stomata ☐ Translocation ☐ Movement of sucrose
☐ Environmental factors ☐ Light intensity ☐ Air movement ☐ Temperature ☐ Effect on water uptake
☐ Calculations ☐ Rate of transpiration

Biology Paper 2 – Topic 7 (Animal Coordination, Control and Homeostasis)

Hormones and glands

☐ Hormones ☐ Endocrine glands ☐ Pituitary ☐ Thyroid ☐ Pancreas ☐ Adrenal glands ☐ Ovaries ☐ Testes
☐ Hormone transport ☐ Bloodstream ☐ Target organs

Adrenaline and thyroxine

☐ Adrenaline ☐ Fight or flight ☐ Increased heart rate ☐ Increased blood pressure ☐ Increased blood flow ☐ Increased blood glucose ☐ Thyroxine ☐ Metabolic rate ☐ Negative feedback ☐ TRH ☐ TSH

Menstrual cycle

☐ Oestrogen ☐ Progesterone ☐ FSH ☐ LH ☐ Ovulation ☐ Uterus lining ☐ Menstruation ☐ Hormone interactions

Contraception and fertility

☐ Hormonal contraception ☐ Barrier methods ☐ Prevent pregnancy ☐ Evaluation ☐ IVF ☐ Clomifene ☐ Role of hormones

Homeostasis and blood glucose

☐ Maintaining constant internal environment ☐ Insulin ☐ Glucagon ☐ Blood glucose control ☐ Type 1 diabetes ☐ Causes ☐ Control ☐ Type 2 diabetes ☐ Causes ☐ Control ☐ BMI ☐ Waist:hip ratio ☐ Obesity link

---

Biology Paper 2 – Topic 8 (Exchange and Transport in Animals)

Exchange and transport

☐ Need for transport ☐ Oxygen ☐ Carbon dioxide ☐ Water ☐ Dissolved food molecules ☐ Mineral ions ☐ Urea ☐ Multicellular organisms ☐ Surface area to volume ratio

Gas exchange ☐ Alveoli ☐ Large surface area ☐ Thin walls ☐ Good blood supply ☐ Diffusion

Blood ☐ Red blood cells ☐ Haemoglobin ☐ White blood cells ☐ Phagocytes ☐ Lymphocytes ☐ Plasma ☐ Transport substances ☐ Platelets ☐ Clotting

Blood vessels and heart ☐ Arteries ☐ Veins ☐ Capillaries ☐ Structure ☐ Heart- Chambers,Valves ☐ Blood flow ☐ Major vessels

Respiration ☐ Cellular respiration ☐ Exothermic ☐ Aerobic respiration ☐ Anaerobic respiration ☐ Comparison ☐ Core Practical ☐ Rate of respiration
Calculations ☐ Heart rate ☐ Stroke volume ☐ Cardiac output
Biology Paper 2 – Topic 9 (Ecosystems and Material Cycles) Ecosystems
☐ Levels of organisation ☐ Organism ☐ Population ☐ Community ☐ Ecosystem
Factors affecting communities
☐ Abiotic ☐ Temperature ☐ Light ☐ Water ☐ Pollutants ☐ Biotic ☐ Competition ☐ Predation
Relationships ☐ Interdependence ☐ Parasitism ☐ Mutualism
Fieldwork ☐ Core Practical ☐ Quadrats ☐ Belt transects ☐ Estimating population size
Human impacts
☐ Fish farming ☐ Non-indigenous species ☐ Eutrophication ☐ Biodiversity ☐ Conservation ☐ Reforestation
Cycles ☐ Carbon cycle ☐ Role of decomposers ☐ Microorganisms ☐ Water cycle ☐ Processes ☐ Potable water ☐ Desalination ☐ Nitrogen cycle ☐ Fertilisers ☐ Crop rotation ☐ Bacteria

Monday 8th June (AM)	**Further Maths Paper 1**

Monday 8th June (PM)	**French Writing**

Theme 1: My Personal World
☐ Me, my family and friends ☐ Relationships ☐ Marriage/ ☐ Free-time activities ☐ Music ☐ Cinema and TV ☐ Sport☐ Customs and festivals in French-speaking countries/communities
Theme 2: Lifestyle and Wellbeing
☐ Food and eating out, ☐ mental health, ☐wellbeing, ☐healthy eating, ☐ illnesses and injury
Theme 3:My Neighbourhood
☐ Home, town, neighbourhood and region ☐ Social issues ☐ Charity/voluntary work ☐ Global issues ☐ Environment
Theme 4:Media and Technology
☐ Technology in everyday life ☐ Social media ☐ Mobile technology ☐ role models
Theme 5: Study and Future Plans
☐ School day ☐ Subjects ☐ Rules ☐ Pressures ☐ Success ☐ School activities ☐ Trips ☐ Events ☐ Exchanges☐ Using languages beyond the classroom ☐ Career plans ☐ Jobs ☐ Work experience ☐ Part-time jobs☐ Further study ☐ Ambitions ☐ Advantages/disadvantages of jobs
Theme 6 :Travel and Tourism
☐ Travel and tourism ☐ Holidays ☐ Accommodation ☐ Shopping ☐ Directions

Tuesday 9th June (AM)	**Spanish Listening**

Theme 1: My Personal World
☐ Me, my family and friends ☐ Relationships ☐ Marriage/ ☐ Free-time activities ☐ Music ☐ Cinema and TV ☐ Sport☐ Customs and festivals in French-speaking countries/communities
Theme 2: Lifestyle and Wellbeing
☐ Food and eating out, ☐ mental health, ☐wellbeing, ☐healthy eating, ☐ illnesses and injury
Theme 3:My Neighbourhood
☐ Home, town, neighbourhood and region ☐ Social issues ☐ Charity/voluntary work ☐ Global issues ☐ Environment
Theme 4:Media and Technology
☐ Technology in everyday life ☐ Social media ☐ Mobile technology ☐ role models
Theme 5: Study and Future Plans
☐ School day ☐ Subjects ☐ Rules ☐ Pressures ☐ Success ☐ School activities ☐ Trips ☐ Events ☐ Exchanges☐ Using languages beyond the classroom ☐ Career plans ☐ Jobs ☐ Work experience ☐ Part-time jobs☐ Further study ☐ Ambitions ☐ Advantages/disadvantages of jobs
Theme 6 :Travel and Tourism
☐ Travel and tourism ☐ Holidays ☐ Accommodation ☐ Shopping ☐ Directions ☐ Campaigns
☐ Environmental issues ☐ Being “green” ☐ Global issues

Tuesday 9th June (PM)	**History Paper 3 Weimar and Nazi Germany**

The Weimar Republic 1918–29

☐ End of WW1 ☐ Armistice☐ Weimar Constitution ☐ President ☐ Chancellor ☐ Reichstag ☐ Proportional representation ☐ Strengths ☐ Weaknesses ☐ Treaty of Versailles ☐ Terms ☐ War guilt ☐ Reparations ☐ Territorial losses ☐ Impact on Germany ☐ Early challenges ☐ Spartacist uprising ☐ Kapp Putsch ☐ Political instability☐ Economic problems ☐ Hyperinflation 1923 ☐ Causes ☐ Effects ☐ Ruhr occupation☐ Recovery ☐ Stresemann ☐ New currency ☐ Dawes Plan ☐ Young Plan ☐ League of Nations☐ Social and cultural changes ☐ Golden Age ☐ Women ☐ Culture ☐ Opposition

Hitler's rise to power 1919–33
☐ Early Nazi Party ☐ DAP ☐ 25 Point Programme ☐ Munich Putsch ☐ Failure ☐ Consequences
☐ Reorganisation ☐ Mein Kampf ☐ Propaganda ☐ SA ☐ Party structure
☐ Wall Street Crash 1929 ☐ Economic depression ☐ Unemployment ☐ Impact on support for Nazis
☐ Growth in support ☐ Propaganda ☐ Appeal ☐ Weaknesses of Weimar
☐ Political deals ☐ Role of elites ☐ Von Papen ☐ Von Hindenburg
☐ Hitler becomes Chancellor 1933 ☐ Reasons

Nazi control and dictatorship 1933–39
☐ Reichstag Fire ☐ Emergency powers ☐ Enabling Act ☐ Dictatorship established
☐ Removal of opposition ☐ Trade unions ☐ Political parties banned ☐ Night of the Long Knives ☐ Röhm ☐ Consolidation of power ☐ Police state ☐ SS ☐ Gestapo ☐ SD ☐ Concentration camps ☐ Propaganda ☐ Goebbels ☐ Control of media ☐ Censorship ☐ Control of culture ☐ Art ☐ Music ☐ Books ☐ Education

Life in Nazi Germany 1933–39
☐ Women ☐ Roles ☐ Marriage ☐ Employment ☐ Policies ☐ Youth ☐ Hitler Youth ☐ Education ☐ Indoctrination ☐ Workers ☐ Employment ☐ Public works ☐ Strength Through Joy ☐ Labour Front ☐ Living standards ☐ Improvements ☐ Limitations ☐ Persecution ☐ Jews ☐ Nuremberg Laws ☐ Kristallnacht ☐ Other groups ☐ Opposition ☐ Youth groups ☐ Churches ☐ Passive resistance

Wednesday 10th June (AM)	**Maths Paper 3 – Calculator**
See Maths Thursday 14th May (AM)	
Wednesday 10th June (PM)	**Greek Listening and Reading**
Thursday 11th June (AM)	**Geography Paper 3**

Geographical Exploration (Synoptic links) | ☐ connections between components 01 and 02 ☐ weather hazards ☐ climate change ☐ urban issues ☐ development ☐ resources ☐ sustainability

Geographical skills – Cartographic | ☐ maps ☐ scale ☐ distance ☐ direction ☐ grid references ☐ symbols
Geographical skills – Graphical | ☐ bar charts ☐ line graphs ☐ pie charts ☐ scatter graphs
Geographical skills – Numerical | ☐ calculations ☐ percentages ☐ averages ☐ ratios
Geographical skills – Statistical | ☐ mean ☐ median ☐ mode ☐ data interpretation

Decision-Making Exercise (DME) | ☐ interpret sources ☐ analyse information ☐ stakeholders ☐ viewpoints ☐ conflicts ☐ advantages ☐ disadvantages ☐ justify decision ☐ develop arguments

Critical Thinking Skills | ☐ evaluate options ☐ compare evidence ☐ make judgements ☐ support with evidence

Exam Skills | ☐ describe ☐ explain ☐ analyse ☐ evaluate ☐ justify ☐ use evidence ☐ link topics together

Friday 12th June (AM)	**Chemistry Paper 2 Separates**

Chemistry – Topic 6 (Groups in the Periodic Table)
Group 1
☐ Elements classified as alkali metals (group 1), halogens (group 7) or noble gases (group 0) ☐ Based on position in periodic table ☐ Alkali metals ☐ Soft ☐ Relatively low melting points
☐ Reactions of lithium, sodium and potassium with water ☐ Pattern in reactivity ☐ Lithium ☐ Sodium ☐ Potassium ☐ Predict other alkali metals ☐ Reactivity explained ☐ Electronic configurations
Group 7

☐ Colours and physical states ☐ Chlorine ☐ Bromine ☐ Iodine at room temperature ☐ Pattern in physical properties ☐ Predict other halogens ☐ Chemical test for chlorine ☐ Reactions with metals ☐ Form metal halides ☐ Predict other halogens ☐ Hydrogen halides ☐ Dissolve in water ☐ Acidic solutions ☐ Predict other halogens ☐ Relative reactivity ☐ Displacement reactions ☐ Halide ions ☐ Predict astatine ☐ Displacement reactions ☐ Redox ☐ Gain/l loss of electrons ☐ Oxidised ☐ Reduced ☐ Reactivity explained ☐ Electronic configurations

Group 0

☐ Noble gases ☐ Chemically inert ☐ Electronic configurations ☐ Uses ☐ Inertness ☐ Low density ☐ Non-flammability ☐ Pattern in physical properties ☐ Predict other noble gases

Chemistry – Topic 7 (Rates of Reaction and Energy Changes)

Rates of reaction

☐ Core Practical ☐ Effect of changing conditions on rate ☐ Gas production (hydrochloric acid and marble chips) ☐ Colour change (sodium thiosulfate and hydrochloric acid)
☐ Practical methods for determining rate of reaction
☐ Collision theory ☐ Particles collide ☐ Frequency and/or energy of collisions increase rate
☐ Effects on rate ☐ Temperature ☐ Concentration ☐ Surface area to volume ratio ☐ Pressure (gases)
☐ Graphs ☐ Mass, volume or concentration of reactant or product against time
☐ Catalyst ☐ Speeds up reaction ☐ Products unchanged ☐ Catalyst unchanged chemically and in mass
☐ Catalyst increases rate ☐ Activation energy
☐ Enzymes ☐ Biological catalysts ☐ Production of alcoholic drinks

Heat energy changes in chemical reactions

☐ Heat energy changes ☐ Salts dissolving in water ☐ Neutralisation ☐ Displacement ☐ Precipitation ☐ Temperature changes in solution
☐ Exothermic ☐ Heat energy given out
☐ Endothermic ☐ Heat energy taken in
☐ Breaking bonds ☐ Endothermic ☐ Making bonds ☐ Exothermic
☐ Overall heat energy change ☐ Exothermic if more energy released making bonds than needed breaking bonds ☐ Endothermic if less energy released making bonds than needed breaking bonds
☐ Calculate energy change ☐ Bond energies
☐ Activation energy
☐ Reaction profiles ☐ Endothermic ☐ Exothermic ☐ Activation energy

Topic 8 (Fuels and Earth Science)

☐ Hydrocarbons ☐ Carbon and hydrogen only
☐ Crude oil ☐ Complex mixture of hydrocarbons ☐ Chains or rings ☐ Source of fuels and feedstock ☐ Finite resource ☐ Fractional distillation ☐ Separation into simpler, more useful mixtures ☐ Fractions ☐ Gases ☐ Petrol ☐ Kerosene ☐ Diesel oil ☐ Fuel oil ☐ Bitumen ☐ Uses ☐ Differences between fractions ☐ Number of carbon and hydrogen atoms ☐ Boiling points ☐ Ease of ignition ☐ Viscosity ☐ Mostly alkanes
☐ Homologous series ☐ Same general formula ☐ Differ by CH_2 ☐ Gradual variation in physical properties ☐ Similar chemical properties ☐ Complete combustion ☐ Carbon dioxide ☐ Water ☐ Energy given out
☐ Incomplete combustion ☐ Carbon ☐ Carbon monoxide ☐ Carbon monoxide ☐ Toxic gas
☐ Problems from incomplete combustion ☐ Carbon monoxide ☐ Soot ☐ Sulfur impurities ☐ Sulfur dioxide
☐ Acid rain ☐ Sulfur dioxide dissolves in rainwater ☐ Oxides of nitrogen ☐ Produced in engines at high temperature ☐ Pollutants ☐ Hydrogen rather than petrol as car fuel ☐ Advantages and disadvantages
☐ Fossil fuels ☐ Petrol ☐ Kerosene ☐ Diesel oil ☐ Methane ☐ Non-renewable
☐ Cracking ☐ Breaking down larger saturated hydrocarbons (alkanes) ☐ Smaller more useful molecules ☐ Some unsaturated (alkenes) ☐ Why cracking is necessary

Earth and atmospheric science

☐ Early atmosphere ☐ Gases produced by volcanic activity
☐ Composition of early atmosphere ☐ Little or no oxygen ☐ Large amount of carbon dioxide ☐ Water vapour ☐ Small amounts of other gases ☐ Condensation of water vapour formed oceans ☐ Carbon dioxide decreased ☐ Dissolved as oceans formed ☐ Primitive plants ☐ Used carbon dioxide ☐ Released oxygen by photosynthesis ☐ Oxygen gradually increased ☐ Chemical test for oxygen ☐ Greenhouse effect ☐ Carbon dioxide ☐ Methane ☐ Water vapour ☐ Absorb heat radiated from Earth ☐ Release energy keeping Earth warm
☐ Evidence for human activity causing climate change ☐ Correlation between atmospheric carbon dioxide, fossil fuel use and temperature change ☐ Uncertainties from measurement location and historical accuracy

☐ Today's atmosphere ☐ Composition ☐ Increased carbon dioxide and methane ☐ Burning fossil fuels ☐ Livestock farming ☐ Effects on climate ☐ Mitigation ☐ Scale ☐ Risk ☐ Environmental implications

Chemistry – Topic 9 (Separate Chemistry 2)

Qualitative analysis: tests for ions

☐ Test for any ion must be unique ☐ Flame tests ☐ Lithium ion Li+ (red) ☐ Sodium ion Na+ (yellow) ☐ Potassium ion K+ (lilac) ☐ Calcium ion Ca2+ (orange-red) ☐ Copper ion Cu2+ (blue-green)
☐ Tests using sodium hydroxide solution ☐ Aluminium ion Al3+ ☐ Calcium ion Ca2+ ☐ Copper ion Cu2+ ☐ Iron(II) ion Fe2+ ☐ Iron(III) ion Fe3+ ☐ Ammonium ion NH4+ ☐ Chemical test for ammonia
☐ Tests for anions ☐ Carbonate ion CO_3^{2-} using dilute acid and identifying carbon dioxide ☐ Sulfate ion SO_4^{2-} using dilute hydrochloric acid and barium chloride solution ☐ Chloride, bromide, iodide ions using dilute nitric acid and silver nitrate solution ☐ Core Practical ☐ Identify ions in unknown salts ☐ Identify ions in unknown salts from test results ☐ Instrumental methods of analysis ☐ Greater sensitivity ☐ Accuracy ☐ Speed
☐ Flame photometer data ☐ Determine concentration using calibration curve ☐ Identify metal ions by comparison with reference data

Hydrocarbons

☐ Alkanes ☐ Methane ☐ Ethane ☐ Propane ☐ Butane ☐ Formulae and displayed structures
☐ Alkanes ☐ Saturated hydrocarbons ☐ Alkenes ☐ Ethene ☐ Propene ☐ Butene ☐ Formulae and displayed structures ☐ Alkenes ☐ Unsaturated hydrocarbons ☐ Functional group C=C ☐ Addition reaction of ethene with bromine ☐ Extend to other alkenes ☐ Bromine water ☐ Test for alkanes vs alkenes
☐ Complete combustion of alkanes and alkenes ☐ Oxidation ☐ Carbon dioxide and water

Polymers

☐ Polymer ☐ High average relative molecular mass ☐ Small repeating units ☐ Poly(ethene) ☐ Formed by polymerisation of ethene ☐ Other addition polymers ☐ Poly(propene) ☐ Poly(chloroethene) PVC ☐ Poly(tetrafluoroethene) PTFE ☐ Deduce monomer from addition polymer and vice versa
☐ Uses of polymers related to properties ☐ Poly(ethene) ☐ Poly(propene) ☐ PVC ☐ PTFE
☐ Polyesters ☐ Condensation polymers ☐ Polyester formation ☐ Monomer with two carboxylic acid groups + monomer with two alcohol groups ☐ Water formed each time an ester link forms
☐ Problems with polymers ☐ Availability of starting materials ☐ Persistence in landfill ☐ Gases produced on combustion ☐ Sorting needed for recycling ☐ Recycling polymers ☐ Advantages and disadvantages ☐ Economic implications ☐ Availability of starting materials ☐ Environmental impact
☐ Biological polymers ☐ DNA from nucleotides ☐ Starch based on sugars ☐ Proteins based on amino acids

Alcohols and carboxylic acids

☐ Alcohols ☐ Methanol ☐ Ethanol ☐ Propanol (propan-1-ol) ☐ Butanol (butan-1-ol) ☐ Formulae and displayed structures ☐ Alcohol functional group ☐ –OH ☐ Can be dehydrated to form alkenes
☐ Core Practical ☐ Temperature rise in water from combustion of ethanol, propanol, butanol and pentanol
☐ Carboxylic acids ☐ Methanoic ☐ Ethanoic ☐ Propanoic ☐ Butanoic acids ☐ Formulae and displayed structures ☐ Carboxylic acid functional group ☐ –COOH ☐ Acidic properties
☐ Ethanol oxidised to ethanoic acid ☐ Extend to other alcohols ☐ Homologous series ☐ Similar reactions because same functional group ☐ Predict products ☐ Ethanol production ☐ Fermentation of carbohydrates in aqueous solution using yeast enzymes ☐ Concentrated ethanol ☐ Fractional distillation of fermentation mixture

Bulk and surface properties of matter including nanoparticles

☐ Nanoparticles ☐ Compare size with atoms and molecules ☐ Properties of nanoparticulate materials ☐ Surface area to volume ratio ☐ Uses ☐ Sunscreens ☐ Risks of some nanoparticulate materials
☐ Compare physical properties using data ☐ Glass and clay ceramics ☐ Polymers ☐ Composites ☐ Metals
☐ Why material properties make them suitable for uses ☐ Select materials using data

Friday 12th June (AM)	**Chemistry Paper 2 Combined**

Chemistry – Topic 6 (Groups in the Periodic Table)

Group 1 ☐ Elements classified as alkali metals (group 1), halogens (group 7) or noble gases (group 0) ☐ Based on position in periodic table ☐ Alkali metals ☐ Soft ☐ Relatively low melting points ☐ Reactions of lithium, sodium and potassium with water ☐ Pattern in reactivity ☐ Lithium ☐ Sodium ☐ Potassium ☐ Predict other alkali metals ☐ Reactivity explained ☐ Electronic configurations

Group 7 ☐ Colours and physical states ☐ Chlorine ☐ Bromine ☐ Iodine at room temperature ☐ Pattern in physical properties ☐ Predict other halogens ☐ Chemical test for chlorine ☐ Reactions with metals ☐ Form metal halides ☐ Predict other halogens ☐ Hydrogen halides ☐ Dissolve in water ☐ Acidic solutions ☐ Predict

other halogens ☐ Relative reactivity ☐ Displacement reactions ☐ Halide ions ☐ Predict astatine ☐ Displacement ☐ Redox ☐ Gain/loss of electrons ☐ Oxidised ☐ Reduced ☐ Reactivity ☐ Configurations **Group 0** ☐ Noble gases ☐ Chemically inert ☐ Electronic configurations ☐ Uses ☐ Inertness ☐ Low density ☐ Non-flammability ☐ Pattern in physical properties ☐ Predict other noble gases

---

Chemistry – Topic 7 (Rates of Reaction and Energy Changes)

Rates of reaction

☐ Core Practical ☐ Effect of changing conditions on rate ☐ Gas production (hydrochloric acid + marble chips) ☐ Colour change (sodium thiosulfate + hydrochloric acid)☐ Practical methods to determine rate of reaction ☐ Collision theory ☐ Particles collide ☐ Frequency and/or energy increases rate ☐ Effects on rate ☐ Temperature ☐ Concentration ☐ Surface area to volume ratio ☐ Pressure (gases) ☐ Collisions ☐ Graphs ☐ Mass/volume/concentration vs time ☐ Catalyst ☐ Speeds up reaction ☐ Not used up ☐ Unchanged chemically and in mass ☐ Catalyst increases rate ☐ Activation energy ☐ Enzymes ☐ Biological catalysts ☐ Used in production of alcoholic drinks

Heat energy changes

☐ Heat energy changes ☐ Salts dissolving ☐ Neutralisation ☐ Displacement ☐ Precipitation ☐ Temperature change ☐ Exothermic ☐ Heat energy given out ☐ Endothermic ☐ Heat energy taken in ☐ Breaking bonds ☐ Endothermic ☐ Making bonds ☐ Exothermic ☐ Overall energy change ☐ Exothermic vs endothermic ☐ Calculate energy change ☐ Bond energies ☐ Activation energy ☐ Reaction profiles ☐ Endothermic ☐ Exothermic ☐ Activation energy

---

Chemistry – Topic 8 (Fuels and Earth Science)

Fuels ☐ Hydrocarbons ☐ Carbon and hydrogen only ☐ Crude oil ☐ Mixture of hydrocarbons ☐ Chains or rings ☐ Source of fuels and feedstock ☐ Finite resource ☐ Fractional distillation ☐ Separation into useful fractions ☐ Fractions ☐ Gases ☐ Petrol ☐ Kerosene ☐ Diesel ☐ Fuel oil ☐ Bitumen ☐ Uses ☐ Differences between fractions ☐ Number of atoms ☐ Boiling point ☐ Ignition ☐ Viscosity ☐ Alkanes ☐ Homologous series ☐ Same general formula ☐ Differ by CH_2 ☐ Gradual physical changes ☐ Similar chemical properties ☐ Complete combustion ☐ Carbon dioxide ☐ Water ☐ Energy released ☐ Incomplete combustion ☐ Carbon ☐ Carbon monoxide ☐ Carbon monoxide ☐ Toxic gas ☐ Problems ☐ Carbon monoxide ☐ Soot ☐ Sulfur impurities ☐ Sulfur dioxide ☐ Acid rain ☐ Sulfur dioxide dissolves in rainwater ☐ Oxides of nitrogen ☐ High temperature reaction ☐ Pollutants ☐ Hydrogen vs petrol ☐ Advantages and disadvantages ☐ Fossil fuels ☐ Petrol ☐ Kerosene ☐ Diesel ☐ Methane ☐ Non-renewable ☐ Cracking ☐ Break down large alkanes ☐ Smaller molecules ☐ Alkenes ☐ Why cracking is necessary

Earth and atmospheric science

☐ Early atmosphere ☐ Formed by volcanic activity ☐ Composition ☐ Little/no oxygen ☐ Carbon dioxide ☐ Water vapour ☐ Other gases ☐ Condensation ☐ Formation of oceans ☐ Carbon dioxide decrease ☐ Dissolved in oceans ☐ Photosynthesis ☐ Plants use CO_2 ☐ Release oxygen ☐ Oxygen increased ☐ Chemical test for oxygen ☐ Greenhouse effect ☐ CO_2 ☐ Methane ☐ Water vapour ☐ Absorb heat ☐ Re-radiate energy ☐ Climate change evidence ☐ CO_2 levels ☐ Fossil fuels ☐ Temperature ☐ Uncertainty ☐ Atmosphere today ☐ Composition ☐ Effects of increased CO_2 and methane ☐ Climate ☐ Human activity ☐ Mitigation ☐ Scale ☐ Risk ☐ Environmental impact

Friday 12th June (PM)	**Portuguese Writing. Polish Writing**
Monday 15th June (AM)	**Physics Paper 2 Separate**

Topic 8 – Energy – forces doing work

☐ Changes in the way energy is stored when systems change ☐ Energy transfer diagrams ☐ Draw and interpret ☐ Closed systems ☐ No net change in total energy ☐ Ways energy changes ☐ Work done by forces ☐ Electrical equipment ☐ Heating ☐ Work done ☐ Measure work done by a force ☐ Energy transferred = work done ☐ Equation ☐ work done = force × distance moved in direction of force ☐ Calculate changes in energy when a system is changed by work done by forces ☐ Gravitational potential energy ☐ change in GPE = mass × gravitational field strength × change in vertical height ☐ Kinetic energy ☐ KE = 1/2 × mass × speed^2 ☐ Energy dissipated ☐ Stored in less useful ways ☐ Mechanical processes waste energy by heating surroundings ☐ Power ☐ Rate of energy transfer ☐ Equation ☐ power = work done ÷ time ☐ One watt = one joule per second ☐ Efficiency ☐ useful energy transferred by device ÷ total energy supplied

Topic 9 – Forces and their effects

☐ Objects interact ☐ At a distance ☐ Gravitational ☐ Electrostatic ☐ Magnetic fields
☐ Contact forces ☐ Normal contact force ☐ Friction
☐ Pairs of forces ☐ Represented as vectors
☐ Vector vs scalar quantities ☐ Difference
☐ Vector diagrams ☐ Resolution of forces ☐ Net force ☐ Equilibrium
☐ Free body force diagrams
☐ Resultant force ☐ Several forces on an object ☐ Balanced forces = zero resultant
☐ Situations where forces can cause rotation
☐ Moment of a force ☐ moment = force × distance normal to direction of force
☐ Principle of moments ☐ sum of clockwise moments = sum of anticlockwise moments in equilibrium
☐ Levers and gears ☐ Transmit rotational effects of forces
☐ Reducing unwanted energy transfer ☐ Lubrication

Topic 10 – Electricity and circuits

☐ Structure of atom ☐ Position, mass and charge of protons, neutrons and electrons
☐ Circuit diagrams ☐ Positive and negative terminals ☐ Cells/batteries ☐ Switches ☐ Voltmeters ☐ Ammeters
☐ Resistors ☐ Variable resistors ☐ Lamps ☐ Motors ☐ Diodes ☐ Thermistors ☐ LDRs ☐ LEDs
☐ Series vs parallel circuits
☐ Voltmeter ☐ Connected in parallel ☐ Measures potential difference
☐ Potential difference ☐ Energy transferred per unit charge ☐ Volt = joule per coulomb
☐ Equation ☐ energy transferred = charge × potential difference
☐ Ammeter ☐ Connected in series ☐ Measures current
☐ Current ☐ Rate of flow of charge ☐ In metals current is a flow of electrons
☐ Equation ☐ charge = current × time
☐ Closed circuit with source of potential difference gives current
☐ Current conserved at a junction
☐ Resistance changes current ☐ Variable resistor
☐ Equation ☐ potential difference = current × resistance
☐ Series resistors increase net resistance ☐ Parallel resistors decrease net resistance
☐ Calculate currents, potential differences and resistances in series circuits
☐ Design and construction of series circuits for testing and measuring
☐ Core Practical ☐ Relationship between potential difference, current and resistance for resistor and filament lamp ☐ Test series and parallel circuits
☐ Current vs potential difference ☐ Filament lamps ☐ Diodes ☐ Fixed resistors
☐ LDR resistance varies with light intensity
☐ Thermistor resistance varies with temperature
☐ Circuits to explore variation of resistance ☐ Filament lamps ☐ Diodes ☐ Thermistors ☐ LDRs
☐ Current in resistor transfers energy and heats resistor
☐ Electrical energy dissipated as thermal energy due to resistance
☐ Collisions between electrons and lattice ions
☐ Reducing unwanted energy transfer ☐ Low resistance wires
☐ Heating effect of electric current ☐ Advantages and disadvantages
☐ Equation ☐ energy transferred = current × potential difference × time
☐ Power ☐ Energy transferred per second ☐ Measured in watts
☐ Equation ☐ power = energy transferred ÷ time
☐ Power transfer related to potential difference and current
☐ Equations ☐ power = current × potential difference ☐ power = current^2 × resistance
☐ Energy transfer in domestic devices ☐ Batteries and a.c. mains ☐ Motors ☐ Heating devices
☐ Direct vs alternating voltage ☐ Direct current (d.c.) ☐ Charge in one direction only ☐ Cells and batteries supply d.c. ☐ Alternating current (a.c.) ☐ Charge changes direction ☐ UK domestic supply ☐ a.c. ☐ 50 Hz ☐ about 230 V ☐ Live and neutral wires ☐ Difference in function ☐ Earth wire ☐ Fuses ☐ Circuit breakers ☐ Safety ☐ Switches and fuses connected in live wire ☐ Potential differences between live, neutral and earth ☐ Dangers of connection between live wire and earth ☐ Power ratings of domestic electrical appliances ☐ Changes in stored energy when in use

Topic 11 – Static electricity

☐ Insulator charged by friction ☐ Transfer of electrons ☐ Material gaining electrons becomes negatively charged ☐ Material losing electrons becomes positively charged ☐ Like charges repel ☐ Unlike charges attract ☐ Electrostatic phenomena ☐ Shocks from everyday objects ☐ Lightning ☐ Attraction by induction ☐ Charged balloon and wall ☐ Charged comb and paper ☐ Earthing removes excess charge by movement of electrons ☐ Uses of electrostatic charges ☐ Insecticide sprayers ☐ Dangers of sparking ☐ Fuelling cars ☐ Earthing prevents dangerous build-up of charge ☐ Electric field ☐ Region where an electric charge experiences a force ☐ Electric field around a point charge and between parallel plates ☐ Shape ☐ Direction ☐ Strength linked to concentration of lines ☐ Electric fields help explain static electricity

Topic 12 – Magnetism and the motor effect

☐ Unlike magnetic poles attract ☐ Like magnetic poles repel ☐ Permanent and temporary magnetic materials ☐ Cobalt ☐ Steel ☐ Iron ☐ Nickel ☐ Permanent vs induced magnets
☐ Magnetic field around bar magnets ☐ Uniform field ☐ Strength linked to concentration of lines
☐ Plotting compasses ☐ Shape and direction of field ☐ Earth's magnetic field
☐ Compass behaviour and Earth's magnetic core ☐ Current creates magnetic effect around long straight conductor ☐ Shape and direction of field linked to current ☐ Field strength depends on current size and distance from conductor ☐ Solenoid ☐ Strong almost uniform field inside ☐ Weaker outside
☐ Current-carrying conductor near magnet experiences force ☐ Equal and opposite force on magnet
☐ Magnetic forces due to interactions between magnetic fields ☐ Fleming's left-hand rule ☐ Force ☐ Current ☐ Magnetic field ☐ Equation ☐ force on conductor = magnetic flux density × current × length
☐ Force on conductor in magnetic field used to cause rotation in electric motors

Topic 13 – Electromagnetic induction

☐ Produce electric current by relative movement of a magnet and a conductor ☐ Laboratory scale ☐ Large-scale generation ☐ Factors affecting size and direction of induced potential difference ☐ Induced magnetic field opposes original change ☐ Electromagnetic induction in alternators ☐ Generates alternating current (a.c.) ☐ Electromagnetic induction in dynamos ☐ Generates direct current (d.c.)
☐ Microphone ☐ Converts pressure variations in sound waves into variations in current ☐ Reverse effect in loudspeakers and headphones ☐ Alternating current in one circuit induces current in another ☐ Transformer ☐ Transformer changes size of alternating voltage ☐ Turns ratio equation ☐ primary potential difference ÷ secondary potential difference = primary turns ÷ secondary turns ☐ National grid ☐ High voltages from power stations ☐ Lower voltages for domestic use ☐ Greater efficiency ☐ Reduced heat loss in transmission lines ☐ Step-up and step-down transformers ☐ Where and why used ☐ Power equation for transformers with 100% efficiency ☐ primary potential difference × primary current = secondary potential difference × secondary current ☐ Advantages of power transmission in high-voltage cables

Topic 14 – Particle model

☐ Kinetic theory ☐ Solids ☐ Liquids ☐ Gases ☐ Movement and arrangement of particles ☐ Equation ☐ density = mass ÷ volume ☐ Core Practical ☐ Densities of solids and liquids ☐ Density differences between states ☐ Arrangement of atoms or molecules ☐ Changes of state ☐ Melting ☐ Freezing ☐ Evaporating ☐ Boiling ☐ Condensing ☐ Sublimation ☐ Mass conserved ☐ Physical changes reversible ☐ Heating changes energy stored ☐ Raises temperature or causes changes of state ☐ Specific heat capacity ☐ Specific latent heat ☐ Difference ☐ Equation ☐ change in thermal energy = mass × specific heat capacity × change in temperature
☐ Equation ☐ thermal energy for change of state = mass × specific latent heat
☐ Reducing unwanted energy transfer ☐ Thermal insulation ☐ Core Practical ☐ Specific heat capacity of water ☐ Temperature-time graph for melting ice
☐ Gas pressure ☐ Motion of particles ☐ Changing gas temperature changes particle velocity and pressure of fixed mass of gas at constant volume ☐ Absolute zero ☐ -273 °C ☐ Lack of particle movement
☐ Convert kelvin and Celsius ☐ Gases can be compressed or expanded by pressure changes
☐ Pressure of a gas produces a net force at right angles to any surface
☐ Changing volume of a gas changes rate of particle collisions with container walls and pressure of fixed mass of gas at constant temperature ☐ Equation ☐ $P_1V_1 = P_2V_2$
☐ Doing work on a gas can increase its temperature ☐ Bicycle pump

Topic 15 – Forces and matter

☐ Stretching, bending or compressing an object requires more than one force ☐ Elastic vs inelastic distortion ☐ Equation ☐ force exerted on a spring = spring constant × extension ☐ Calculate spring constant ☐ Equation ☐ energy transferred in stretching = 0.5 × spring constant × extension^2 ☐ Linear vs non-linear force-extension relationships ☐ Core Practical ☐ Extension and work done when applying forces to a spring

☐ Atmospheric pressure varies with height above Earth's surface ☐ Simple model of atmosphere
☐ Pressure in a fluid ☐ Due to fluid and atmospheric pressure ☐ Pressure in fluids causes a force normal to any surface ☐ Pressure related to force and area ☐ Equation ☐ pressure = force normal to surface ÷ area
☐ Pressure in fluids increases with depth and density ☐ Pressure in liquids varies with density and depth
☐ Equation ☐ pressure due to a column of liquid = height × density × gravitational field strength
☐ Upthrust ☐ Upwards force on object in fluid ☐ Fully immersed in liquid or gas ☐ Partially immersed in liquid
☐ Upthrust = weight of fluid displaced ☐ Floating and sinking ☐ Upthrust ☐ Weight ☐ Density of fluid

Monday 15th June (AM)	Physics Paper 2 Combined

Topic 8 (Energy – forces doing work)

Energy stores and transfers

☐ Changes in the way energy is stored when systems change ☐ Energy transfer diagrams ☐ Draw and interpret
☐ Closed systems ☐ No net change in total energy ☐ Ways energy changes ☐ Work done by forces ☐ Electrical equipment ☐ Heating

Work done, GPE and KE

☐ Work done ☐ Measure work done by a force ☐ Energy transferred = work done ☐ Equation ☐ work done = force × distance moved in direction of force ☐ Calculate changes in energy when systems change by work done
☐ Gravitational potential energy ☐ change in GPE = mass × gravitational field strength × change in vertical height ☐ Kinetic energy ☐ KE = 1/2 × mass × speed^2

Dissipation, power and efficiency

☐ Energy dissipated ☐ Stored in less useful ways ☐ Mechanical processes waste energy by heating surroundings ☐ Power ☐ Rate of energy transfer
☐ Equation ☐ power = work done ÷ time ☐ One watt = one joule per second
☐ Efficiency equation ☐ useful energy transferred by device ÷ total energy supplied to device

Physics – Topic 9 (Forces and their effects)

Forces and vectors

☐ Objects interact ☐ At a distance ☐ Gravitational ☐ Electrostatic ☐ Magnetic fields
☐ Contact forces ☐ Normal contact force ☐ Friction
☐ Pairs of forces ☐ Represented as vectors
☐ Vector vs scalar quantities ☐ Difference
☐ Vector diagrams ☐ Resolution of forces ☐ Net force ☐ Equilibrium
☐ Free body force diagrams
☐ Resultant force ☐ Several forces on an object ☐ Balanced forces = zero resultant
☐ Reducing unwanted energy transfer ☐ Lubrication

Physics – Topic 10 (Electricity and circuits)

Circuits and current

☐ Structure of atom ☐ Position, mass and charge of protons, neutrons, electrons
☐ Circuit diagrams ☐ Positive and negative terminals ☐ Cells/batteries ☐ Switches ☐ Voltmeters ☐ Ammeters
☐ Resistors ☐ Variable resistors ☐ Lamps ☐ Motors ☐ Diodes ☐ Thermistors ☐ LDRs ☐ LEDs
☐ Series vs parallel circuits
☐ Voltmeter ☐ Connected in parallel ☐ Measures potential difference
☐ Potential difference ☐ Energy transferred per unit charge ☐ Volt = joule per coulomb
☐ Equation ☐ energy transferred = charge × potential difference
☐ Ammeter ☐ Connected in series ☐ Measures current
☐ Current ☐ Rate of flow of charge ☐ In metals current is a flow of electrons
☐ Equation ☐ charge = current × time
☐ Closed circuit with source of p.d. gives current
☐ Current conserved at a junction

Resistance and practicals

☐ Resistance changes current ☐ Variable resistor
☐ Equation ☐ potential difference = current × resistance
☐ Series resistors increase net resistance ☐ Parallel resistors decrease net resistance
☐ Calculate current, p.d. and resistance in series circuits
☐ Design and construction of series circuits for testing and measuring
☐ Core Practical ☐ Relationship between p.d., current and resistance for resistor and filament lamp ☐ Test series and parallel circuits

☐ Current vs p.d. ☐ Filament lamps ☐ Diodes ☐ Fixed resistors
☐ LDR resistance varies with light intensity
☐ Thermistor resistance varies with temperature
☐ Circuits to explore variation of resistance ☐ Filament lamps ☐ Diodes ☐ Thermistors ☐ LDRs
Electrical heating, power and mains electricity
☐ Current in resistor transfers energy and heats resistor
☐ Electrical energy dissipated as thermal energy due to resistance
☐ Collisions between electrons and lattice ions
☐ Reducing unwanted energy transfer ☐ Low resistance wires
☐ Heating effect of electric current ☐ Advantages and disadvantages
☐ Equation ☐ energy transferred = current × potential difference × time
☐ Power ☐ Energy transferred per second ☐ Measured in watts
☐ Equation ☐ power = energy transferred ÷ time
☐ Power transfer related to p.d. and current
☐ Equations ☐ power = current × potential difference ☐ power = current^2 × resistance
☐ Energy transfer in domestic devices ☐ Batteries and a.c. mains ☐ Motors ☐ Heating devices
☐ Direct vs alternating voltage
☐ d.c. ☐ Charge in one direction only ☐ Cells and batteries supply d.c.
☐ a.c. ☐ Charge changes direction
☐ UK domestic supply ☐ a.c. ☐ 50 Hz ☐ about 230 V
☐ Live and neutral wires ☐ Difference in function
☐ Earth wire ☐ Fuses ☐ Circuit breakers ☐ Safety
☐ Switches and fuses in live wire
☐ Potential differences between live, neutral and earth
☐ Dangers of connection between live wire and earth
☐ Power ratings of domestic appliances ☐ Changes in stored energy when in use
Physics – Topic 12 (Magnetism and the motor effect)
Magnets and magnetic fields
☐ Unlike poles attract ☐ Like poles repel
☐ Permanent and temporary magnetic materials ☐ Cobalt ☐ Steel ☐ Iron ☐ Nickel
☐ Permanent vs induced magnets
☐ Magnetic field around bar magnets ☐ Uniform field ☐ Strength linked to concentration of lines
☐ Plotting compasses ☐ Shape and direction of field ☐ Earth's magnetic field
☐ Compass behaviour and Earth's magnetic core
Electromagnets and motor effect
☐ Current creates magnetic effect ☐ Field around long straight conductor ☐ Shape and direction linked to current
☐ Field strength depends on current size and distance from conductor
☐ Solenoid ☐ Strong almost uniform field inside ☐ Weaker outside
☐ Current-carrying conductor near magnet experiences force ☐ Equal and opposite force on magnet
☐ Magnetic forces due to interactions between magnetic fields
☐ Fleming's left-hand rule ☐ Force ☐ Current ☐ Magnetic field
☐ Equation ☐ force on conductor = magnetic flux density × current × length
Physics – Topic 13 (Electromagnetic induction)
Induction, transformers and the national grid
☐ Factors affecting size and direction of induced potential difference
☐ Induced magnetic field opposes original change
☐ Alternating current in one circuit induces current in another ☐ Transformer
☐ Transformer changes size of alternating voltage
☐ National grid ☐ Electrical energy transferred at high voltage ☐ Lower voltage for domestic use ☐ Greater efficiency ☐ Reduced heat loss
☐ Step-up and step-down transformers ☐ Where and why used
☐ Transformer equation for 100% efficiency ☐ primary p.d. × primary current = secondary p.d. × secondary current
Physics – Topic 14 (Particle model)

States of matter, density and thermal energy
☐ Kinetic theory ☐ Solids ☐ Liquids ☐ Gases ☐ Movement and arrangement of particles
☐ Equation ☐ density = mass ÷ volume
☐ Core Practical ☐ Densities of solids and liquids
☐ Density differences between states ☐ Arrangement of particles
☐ Changes of state ☐ Melting ☐ Freezing ☐ Evaporating ☐ Boiling ☐ Condensing ☐ Sublimation ☐ Mass conserved ☐ Physical changes reversible
☐ Heating changes energy stored ☐ Raises temperature or causes change of state
☐ Specific heat capacity ☐ Specific latent heat ☐ Difference
☐ Equation ☐ change in thermal energy = mass × specific heat capacity × change in temperature
☐ Equation ☐ thermal energy for change of state = mass × specific latent heat
☐ Reducing unwanted energy transfer ☐ Thermal insulation
☐ Core Practical ☐ Specific heat capacity of water ☐ Temperature-time graph for melting ice
Gases and temperature
☐ Gas pressure ☐ Motion of particles
☐ Changing gas temperature changes particle velocity and pressure at constant volume
☐ Absolute zero ☐ -273 °C ☐ No particle movement
☐ Convert kelvin and Celsius
Physics – Topic 15 (Forces and matter)
Springs and elastic behaviour
☐ Stretching, bending or compressing requires more than one force
☐ Elastic vs inelastic distortion
☐ Equation ☐ force = spring constant × extension
☐ Calculate spring constant
☐ Equation ☐ energy transferred in stretching = 1/2 × spring constant × extension^2
☐ Linear vs non-linear force-extension relationships
☐ Core Practical ☐ Extension and work done when applying forces to a spring

Monday 15th June (PM)	**Further Maths Paper 2**

Tuesday 16th June (AM)	**Spanish Reading**

Theme 1: My Personal World
☐ Me, my family and friends ☐ Relationships ☐ Marriage/ ☐ Free-time activities ☐ Music ☐ Cinema and TV ☐ Sport☐ Customs and festivals in French-speaking countries/communities
Theme 2: Lifestyle and Wellbeing
☐ Food and eating out, ☐ mental health, ☐wellbeing, ☐healthy eating, ☐ illnesses and injury
Theme 3:My Neigbourhood
☐ Home, town, neighbourhood and region ☐ Social issues ☐ Charity/voluntary work ☐ Global issues ☐ Environment
Theme 4:Media and Technology
☐ Technology in everyday life ☐ Social media ☐ Mobile technology ☐ role models
Theme 5: Study and Future Plans
☐ School day ☐ Subjects ☐ Rules ☐ Pressures ☐ Success ☐ School activities ☐ Trips ☐ Events ☐ Exchanges☐ Using languages beyond the classroom ☐ Career plans ☐ Jobs ☐ Work experience ☐ Part-time jobs☐ Further study ☐ Ambitions ☐ Advantages/disadvantages of jobs
Theme 6 :Travel and Tourism
☐ Travel and tourism ☐ Holidays ☐ Accommodation ☐ Shopping ☐ Directions

Wednesday 17th June (AM)	**Spanish Writing**

Theme 1: My Personal World
☐ Me, my family and friends ☐ Relationships ☐ Marriage/ ☐ Free-time activities ☐ Music ☐ Cinema and TV ☐ Sport☐ Customs and festivals in French-speaking countries/communities
Theme 2: Lifestyle and Wellbeing
☐ Food and eating out, ☐ mental health, ☐wellbeing, ☐healthy eating, ☐ illnesses and injury

Theme 3:My Neigbourhood

☐ Home, town, neighbourhood and region ☐ Social issues ☐ Charity/voluntary work ☐ Global issues ☐ Environment

Theme 4:Media and Technology

☐ Technology in everyday life ☐ Social media ☐ Mobile technology ☐ role models

Theme 5: Study and Future Plans

☐ School day ☐ Subjects ☐ Rules ☐ Pressures ☐ Success ☐ School activities ☐ Trips ☐ Events ☐ Exchanges☐ Using languages beyond the classroom ☐ Career plans ☐ Jobs ☐ Work experience ☐ Part-time jobs☐ Further study ☐ Ambitions ☐ Advantages/disadvantages of jobs

Theme 6 :Travel and Tourism

☐ Travel and tourism ☐ Holidays ☐ Accommodation ☐ Shopping ☐ Directions

GRAMMAR- PAST, PRESENT AND FUTURE TENSENS, COMPLEX LANGUAGE AND CREATIVE STRUCTURES

Wednesday 17th June (PM)	**Greek Writing**