



Year 11 Mock Examinations
Learning List Booklet
February 2024



Year 11 Mock Exam Timetable

- *The timings in brackets are for pupils entitled to extra time (based on 25% extra time)
- Venue will be the Sports Hall unless otherwise stated.

	Monday 26 th February	Tuesday 27 th February	Wednesday 28 th February	Thursday 29 th February	Friday 1 st March
Periods 1-2 09.00-10.05	LLW 1hr 09.05-10.05 (09.05-10.20)*	Biology 1hr 09.05-10.05 (09.05-10.20)*	English Lang 55mins 09.05-10.00 (09.05-10.14)*	Technology 1hr 09.05-10.05 (09.05-10.20)*	English Lit 1hr 09.05-10.05 (09.05-10.20)*
Break/Registration 10.05-10.50					
Periods 3-6 10.50-13.10	Business & Communication Systems 2hrs 30 mins (Room 38) 10.40-13.10 (10.40-13.48)* Business Studies 1hr 10.50-11.50 (10.50-12.05)*	RE 55mins 10.50-11.45 (10.50-11.59)*	Physics 1hr 10.50-11.50 (10.50-12.05)*	Maths 1hr 30mins Pupils to sit either: M3 or M4 10.50-12.20 (10.50-12.43)*	Agric 1hr 15mins 10.50-12.05 (10.50-12.24)* Further Maths 1hr 15mins 10.50-12.05 (10.50-12.24)*
Lunch 13.10-13.50					
Periods 8-10 13.50-15.30	Construction 1hr 14.25-15.25 (14.10-15.25)* Music 1hr (Room 54) 14.10-15.10 (14.10-15.25)*	Chemistry 1hr 14.25-15.25 (14.10-15.25)*	Geography 1hr 14.25-15.25 (14.10-15.25)*	History 55mins 14.25-15.20 (14.10-15.19)* Computer Science 1hr 14.25-15.25 (14.10-15.25)*	Digital Tech 1hr 14.25-15.25 (14.10-15.25)*



Agriculture and Land Use

- Cultivation of land - Machinery and ground preparation for new crops
- Processing of potato crops - harvesting storage and transport
- Photosynthesis - including experiments
- Soil types - experiments
- Biodiversity - investigative techniques and experiments, improving biodiversity
- Plotting graphs
- Nitrogen Cycle
- Plants and their minerals
- Leaching of fertilisers
- GM Crops - defn, adv and disadv
- DAERA and other environmental; agencies
- Insect and Wind pollination of plants



Business Studies

Unit 1 Mock Examination Learning List

- Entrepreneurs
- Key characteristics of entrepreneurs
- Unlimited liability & businesses it applies to
- Compare and contrast public and private sector organisations in terms of ownership, purposes and aims, control and finance.
- Business location (all)
- Business aims and objectives (all)
- Purpose of market research
- Market segmentation
- Primary & secondary research
- Pricing strategies
- Consumer Rights Act
- E-business



Business Communications Systems

Unit 1 Mock Examination Learning List

Word Processing Task

- Change the orientation of a document.
- Effective use of fonts, styles and design features
- Effective use of images

Spreadsheet Task

- Format cells
- Clear understanding of the following formula
 - If statements
 - Count function
 - Max and Min function
 - Sum function
- Print settings
- Bar charts

Database task

- Understand data types.
- Edit data records.
- Run queries.
- Create a one-to-many relationship.
- Create a report.
- Mail merge – letter structure

PowerPoint Task

- Create a three-slide presentation to explain the different types of validation in a database.
- Print options



Biology

All topics as far as respiration and gas exchange

- Cells and the microscope
- Food molecules and food tests
- Energy content of food
- Photosynthesis and gas exchange in plants.
- hydrogen carbonate indicator experiments and colour changes
- Leaf structure and adaptations
- Respiratory system in humans
- Features of gas exchange surfaces in lungs and leaves



Chemistry

Year 11 Chemistry Learning List (Higher)

Atomic structure

- Working out numbers of protons, neutrons, electrons
- Properties of protons, neutrons, electrons
- Anions and cations
- Isotopes
- Calculating RAM

Bonding

- Dot and cross diagrams for covalent molecules including lone pairs
- Ionic bonding
- Alloys
- Properties of metals

Chemical Analysis

- Water – properties, chemical test
- Formulation
- Flame tests
- Separating techniques
- Chromatography

Periodic Table

- History
- Reactions of metals with water

Formulae, equations and moles

- Writing formulae for ionic compounds
- Naming compounds
- Completing balanced symbol equations

Year 11 Chemistry Learning List (Foundation)

Atomic structure

- Working out numbers of protons, neutrons, electrons
- Properties of protons, neutrons, electrons
- Atoms and ions
- Isotopes

Bonding

- Dot and cross diagrams for covalent molecules including lone pairs. For foundation examples to be learnt are H₂, Cl₂, HCl.
- Ionic bonding



Chemical Analysis

- Pure substances
- Mixtures
- Solvent, solute, solution
- Water – properties, chemical test
- Formulation
- Flame tests
- Separating techniques
- Chromatography

Periodic Table

- History
- Reactions of metals with water

Formulae, equations and moles

- Writing formulae for ionic compounds
- Naming compounds
- Completing balanced symbol equations



Construction

- Definition of the Built Environment.
- Structures: features of cellular, portal frame, timber frame & rectangular frame. Advantages & disadvantages of each structure.
- Types of low-rise buildings & their characteristics e.g., agricultural, commercial etc...
- Types of residential housing. e.g., detached, terrace etc
- RIBA Plan of work stages & purpose.
- Materials used in Construction e.g., hardwoods & softwoods
- Craft Project Evaluation.






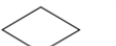


Computer Science

Y11 Computing – Computational Thinking, algorithms and programming

2.1 Algorithms

- 2.1.1 Computational Thinking
- 2.1.2 Designing, creating and refining algorithms
- 2.1.3 Searching and sorting algorithms
- 2.2 Programming Fundamentals
 - 2.2.1 Programming Fundamentals
 - 2.2.2 Data Types
 - 2.2.3 Additional Programming Techniques
 - The use of basic string manipulation
 - The use of arrays including 1D and 2D arrays
 - How to use sub-programs (functions and procedures)
 - Random number generation
- Specification Screenshots

(*) Some of the specification points in 2.2.3 have been passed over until later in Y11. I have not included these points in the lists above and also blocked them out in the screenshots below just to avoid any confusion.

2.1 – Algorithms			
Sub topic	Guidance		
2.1.1 Computational thinking			
<input type="checkbox"/> Principles of computational thinking: <ul style="list-style-type: none"> ○ Abstraction ○ Decomposition ○ Algorithmic thinking 	Required <input checked="" type="checkbox"/> Understanding of these principles and how they are used to define and refine problems		
2.1.2 Designing, creating and refining algorithms			
<input type="checkbox"/> Identify the inputs, processes, and outputs for a problem <input type="checkbox"/> Structure diagrams <input type="checkbox"/> Create, interpret, correct, complete, and refine algorithms using: <ul style="list-style-type: none"> ○ Pseudocode ○ Flowcharts ○ Reference language/high-level programming language <input type="checkbox"/> Identify common errors <input type="checkbox"/> Trace tables	Required <input checked="" type="checkbox"/> Produce simple diagrams to show: <ul style="list-style-type: none"> ▪ The structure of a problem ▪ Subsections and their links to other subsections <input checked="" type="checkbox"/> Complete, write or refine an algorithm using the techniques listed <input checked="" type="checkbox"/> Identify syntax/logic errors in code and suggest fixes <input checked="" type="checkbox"/> Create and use trace tables to follow an algorithm		
Flowchart symbols			
	Line		Input/Output
	Process		Decision
	Sub program		Terminal



2.1.3 Searching and sorting algorithms

<ul style="list-style-type: none"> <input type="checkbox"/> Standard searching algorithms: <ul style="list-style-type: none"> o Binary search o Linear search <input type="checkbox"/> Standard sorting algorithms: <ul style="list-style-type: none"> o Bubble sort o Merge sort o Insertion sort 	<p>Required</p> <ul style="list-style-type: none"> ✓ Understand the main steps of each algorithm ✓ Understand any pre-requisites of an algorithm ✓ Apply the algorithm to a data set ✓ Identify an algorithm if given the code or pseudocode for it <p>Not required</p> <ul style="list-style-type: none"> ✗ To remember the code for these algorithms ✗ To remember Exam Reference Language for Merge Sort
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2.2 – Programming fundamentals

Sub topic	Guidance																
2.2.1 Programming fundamentals																	
<ul style="list-style-type: none"> <input type="checkbox"/> The use of variables, constants, operators, inputs, outputs and assignments <input type="checkbox"/> The use of the three basic programming constructs used to control the flow of a program: <ul style="list-style-type: none"> o Sequence o Selection o Iteration (count- and condition-controlled loops) <input type="checkbox"/> The common arithmetic operators <input type="checkbox"/> The common Boolean operators AND, OR and NOT 	<p>Required</p> <ul style="list-style-type: none"> ✓ Practical use of the techniques in a high-level language within the classroom ✓ Understanding of each technique ✓ Recognise and use the following operators: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Comparison operators</th> <th style="text-align: left;">Arithmetic operators</th> </tr> </thead> <tbody> <tr> <td>== Equal to</td> <td>+ Addition</td> </tr> <tr> <td>!= Not equal to</td> <td>- Subtraction</td> </tr> <tr> <td>< Less than</td> <td>* Multiplication</td> </tr> <tr> <td><= Less than or equal to</td> <td>/ Division</td> </tr> <tr> <td>> Greater than</td> <td>MOD Modulus</td> </tr> <tr> <td>>= Greater than or equal to</td> <td>DIV Quotient</td> </tr> <tr> <td></td> <td>^ Exponentiation (to the power)</td> </tr> </tbody> </table>	Comparison operators	Arithmetic operators	== Equal to	+ Addition	!= Not equal to	- Subtraction	< Less than	* Multiplication	<= Less than or equal to	/ Division	> Greater than	MOD Modulus	>= Greater than or equal to	DIV Quotient		^ Exponentiation (to the power)
Comparison operators	Arithmetic operators																
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!= Not equal to	- Subtraction																
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<= Less than or equal to	/ Division																
> Greater than	MOD Modulus																
>= Greater than or equal to	DIV Quotient																
	^ Exponentiation (to the power)																

2.2.2 Data types

<ul style="list-style-type: none"> <input type="checkbox"/> The use of data types: <ul style="list-style-type: none"> o Integer o Real o Boolean o Character and string o Casting 	<p>Required</p> <ul style="list-style-type: none"> ✓ Practical use of the data types in a high-level language within the classroom ✓ Ability to choose suitable data types for data in a given scenario ✓ Understand that data types may be temporarily changed through casting, and where this may be useful
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2.2.3 Additional programming techniques

<ul style="list-style-type: none"> <input type="checkbox"/> The use of basic string manipulation <div style="background-color: black; width: 100%; height: 50px; margin: 5px 0;"></div> <ul style="list-style-type: none"> <input type="checkbox"/> The use of arrays (or equivalent) when solving problems, including both one-dimensional (1D) and two-dimensional arrays (2D) <input type="checkbox"/> How to use sub programs (functions and procedures) to produce structured code <input type="checkbox"/> Random number generation 	<p>Required</p> <ul style="list-style-type: none"> ✓ Practical use of the additional programming techniques in a high-level language within the classroom ✓ Ability to manipulate strings, including: <ul style="list-style-type: none"> ▪ Concatenation ▪ Slicing ✓ Arrays as fixed length or static structures ✓ Use of 2D arrays to emulate database tables of a collection of fields, and records ✓ The use of functions ✓ The use of procedures ✓ Where to use functions and procedures effectively ✓ The use of the following within functions and procedures: <ul style="list-style-type: none"> ▪ local variables/constants ▪ global variables/constants ▪ arrays (passing and returning) <div style="background-color: black; width: 100%; height: 40px; margin: 5px 0;"></div> <ul style="list-style-type: none"> ✓ Be able to create and use random numbers in a program
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Digital Technology

Unit 1

Topic 1 – Representing Data

Digital data Representing data	Students should be able to: <ul style="list-style-type: none">• describe the difference between information and data;• describe how data is stored in the following units:<ul style="list-style-type: none">– bit;– nibble;– byte;– kilobyte;– megabyte;– gigabyte; and– terabyte;• identify the following data types: numeric (integer and real), date/time, character and string;
Representing images	<ul style="list-style-type: none">• demonstrate understanding of how pixels are used in image representation;• demonstrate understanding of how image resolution affects file size;• describe how vector-based graphics and bitmap graphics are stored;• describe the difference between vector-based and bitmap graphics; and• demonstrate understanding of how buffering and streaming are used to support the transfer of moving image files.

Topic 2 – Software

Representing sound	Students should be able to: <ul style="list-style-type: none">• describe factors that affect sound quality when recording sound, including sample rate, bit depth and bit rate;• explain the need for analogue-to-digital conversion in sound recording;
Data portability	<ul style="list-style-type: none">• demonstrate understanding of data portability and the following file formats that support it: jpeg, tiff, png, pict, gif, txt, csv, rtf, mp3, mp4, midi, mpeg, avi, pdf, wav and wma;• demonstrate understanding of the need for data compression;



Topic 4 - Spreadsheets

Spreadsheet applications	<ul style="list-style-type: none">• describe the following basic structures of spreadsheet software: cells, rows and columns;• describe and use the following features of spreadsheet software:<ul style="list-style-type: none">– data types;– templates, headers and footers, conditional formatting, validation, and importing data;– entering text, numbers and formulae;– formatting cells, rows and columns;– creating and replicating formulae;– creating a simple template for others to use; and– using simple functions, relative and absolute cell referencing, IF statements and VLOOKUPS;• use a spreadsheet for data modelling;• create, label and format charts;• select areas of a spreadsheet for printing; and• create simple macros.
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Topic 5 – Hardware

Computer hardware	<p>Students should be able to:</p> <ul style="list-style-type: none">• explain the purpose of the central processing unit (CPU);• describe the role of the following components of the CPU: the arithmetic logic unit (ALU), control unit and immediate-access store;• describe the role the following play in the fetch-execute cycle: program counter, memory address register (MAR), memory data register (MDR), instruction address register (IAR) and ALU;• describe the impact of clock speed, cache size, and number of cores on CPU performance;• describe the characteristics, typical uses, and advantages and disadvantages of the following input, output and storage devices:<ul style="list-style-type: none">– microphone;– mouse;– graphics digitiser;– touch screens;– speakers;– printers (laser and 3D);– hard disc drive (HDD);– high definition (HD) storage media; and– solid state drive (SSD);• explain the purpose of random access memory (RAM), read only memory (ROM) and cache;
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Topic 6 - Networks

Network technologies	<ul style="list-style-type: none">• describe the main features of a local area network (LAN) and a wide area network (WAN);• describe the difference between the World Wide Web, the Internet of Things and intranets; and• describe and evaluate the effectiveness of the following network communications technologies: Wi-Fi, Bluetooth, optical fibre, and mobile communication technology (4G and 5G).
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Network technologies (cont.)	<p>Students should be able to:</p> <ul style="list-style-type: none">• describe the function of the following network resources: network interface card, network cables, switch and router;• describe the following network topologies: Bus, Star and Ring;• describe the advantages and disadvantages of using a network in an organisation;
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English

ENGLISH LITERATURE - UNIT 1 SECTION A - ONE HOUR

SECTION A – Novel

- Learn key quotes. At least eight for each character – closed book exam
- Plan in chronological order
- Key ideas – 6 points
- Other view at least once – evaluative
- Focus on analysing language – key words/technique/punctuation
- Continually refer back to the question – key term

‘OF MICE AND MEN’

Focus on these characters and themes:

- Power/Loneliness
- Candy/Curley’s Wife/Lennie

‘ANIMAL FARM’

Focus on these characters and themes:

- Snowball/Boxer/Squealer
- Equality/ Impact of the Revolution.

ENGLISH LANGUAGE - UNIT 1 SECTION A - 55 MINUTES.

Writing for Purpose and Audience

- One-sided – must be persuasive
- Plan – Introduction, 5 or 6 points, conclusion
- In your introduction engage the audience immediately eg. rhetorical question, personal pronouns, humour, shocking statement
- **Vary vocabulary** -try to use at least one persuasive technique in each paragraph – simile, metaphor, personification, repetition, alliteration, rule of three etc. Use effective verbs and adverbs. Use emotive language.
- **Vary punctuation** - ? ! () - - CAPITALISATION for emphasis
- **Vary sentence structure** – remember to use commas effectively in longer sentences
- Engage the audience throughout – reader or listener – refer to them frequently
- **Accurate use of paragraphs, spelling, grammar and punctuation.** PROOFREAD EVERY PARAGRAPH CAREFULLY
- Use anecdotes (personal accounts) to add detail to paragraphs
- Finish with a strong conclusion – make your view clear again. Use a demanding tone/imperatives



Geography

Theme A – River Environments

- The Drainage Basin
- River Processes and Landforms
- Case studies

Theme B – Coastal Environments

- Coastal Processes and Landforms
- Case study

Theme C – Our Changing Weather and Climate

- Measuring the Elements of the Weather
- Weather Systems affecting the British Isles



History

Topic 1: Consolidation of Power

- Media control, SA in Prussia, the Reichstag Fire, Decree for the Protection of People and State, The Enabling Act, the Night of the Long Knives, Death of Hindenburg/Hitler becomes Fuhrer and the army swearing loyalty.

Topic 3: Life of Workers

- Minister of Economics.
- Four Year Plan- Autarky.
- Methods used to reduce unemployment.
- How the Nazis changed the lives of workers (DAF/KDF/SdA)

Topic 5: Life of Young People

- Policies inside school:
 - ✓ Teachers
 - ✓ Curriculum
 - ✓ Special Schools
- Policies outside school:
 - ✓ Hitler Youth
 - ✓ BDM

Topic 6: Life of Jews and minorities

- Persecution of Jews.

Topic 7: Germany at War

- Opposition and resistance during the war.



LLW

Topic 1

- Living a healthy lifestyle – Diet, exercise.
- The causes, consequences and impacts of using alcohol and drugs on health and wellbeing.
- The causes, consequences, and impact on physical and mental health of poor hygiene, stress, unequal work/life balance and low income.
- Developing a healthy mine, dealing with anxiety, stress, and depression.
- Support available to help young people overcome addictions and deal with mental health issues.

Topic 2

- The impact that change can have on a young person's development e.g. New job, new school, getting married.

Topic 3

- The physical and emotional effects that unhealthy relationships may have on individuals.

Topic 4

- The cause and consequences of risk-taking behaviour.
- Assessing and managing risks in real-life contexts e.g. self-harm.
- Personal strategies and government policies that deal with abuse, neglect, sexual exploitation, and exploitation.

Topic 5

- The roles and responsibilities of parents, children, and young people within different family structures.
- The role of parenting on a child's physical, social, emotional, intellectual, and moral development.

Topic 6

- The advantages and disadvantages of consumer choices when making financial decisions.
- The advantages and disadvantages of using comparison websites for car and home insurance, electricity, gas and oil.



Mathematics

M4 topics

- Algebra, Expanding and Factorising
- Solving Linear Equations
- Circle Theorems
- Pythagoras' Theorem
- Basic Perimeter/Area & Composite shapes
- Trigonometry
- Arc Length and Sector Area
- Solving Quadratic Equations
- Cumulative Frequency
- Stem and Leaf Diagrams & Boxplots
- Gradient, Length, Midpoint of a Line

M3 Topics

- Algebra, Expanding and Factorising
- Solving Linear Equations
- Scatter Graphs
- Pythagoras' Theorem
- Basic Perimeter/Area & Composite shapes
- Trigonometry
- Arc Length and Sector Area
- Solving Quadratic Equations
- Cumulative Frequency
- Stem and Leaf Diagrams & Boxplots
- Gradient, Length, Midpoint of a Line



Further Maths

Topic 1

Polynominals, Expanding Brackets and Factorising

Topic 2

Solving quadratic equations and algebraic fractions

Topic 3

Solving Inequalities

Topic 4

Simultaneous Equations

Topic 5

Matrices

Topic 6

Logarithms



Music

- Elements of Music
- Popular Music Timeline of styles/genres
- All key features and facts for:
 - Sweet Dreams
 - Cosmic Love
 - Burn Baby Burn
- Musical Traditions in Ireland
- All dance styles
- All Instruments
- All facts and key features for:
 - BEOGA
 - STONEWALL FOLK GROUP
- Instruments of the orchestra
- 1 Solo performance piece



Physics

Energy

- Forms of Energy
- Principle of Conservation of Energy
- Energy Resources – Renewable and Non-Renweable
- Energy Equations – Work Done, Efficiency, Power, Potential Energy and Kinetic Energy

Motion

- Speed and average speed
- Acceleration
- Scalars and Vectors
- Displacement and Velocity
- Motion graphs – distance/time and speed/time
- Motion graphs – displacement/time and velocity/time

Density

- Density equation
- Density experiments

Forces

- Mass & Weight
- Hooke's Law
- Pressure



Religious Studies

1: Birth of the Church

- Pentecost
- Characteristics of the Early Church
- St Pauls teaching on spiritual gifts
- St Pauls teaching on the Church
- Positive versus negative qualities of the Early Church

2: Worship

- Types of prayer / aids to prayer
- The Mass /importance of the homily
- What happens during the consecration of the mass
- Evaluate: importance of the mass today for young people

3. Church Government

- Why is good leadership important
- Ceremony of ordination
- Women priests evaluate

4. Church Architecture / Furniture

- Church furniture
- Significance of the different types of church architecture
- Churches should be plain and simple and not ornate: evaluate



Technology & Design

- **Design and Communication** – applying the design process, analyse products and communicate ideas
- **Materials** – knowledge and understanding of all Woods, Metals, Plastics and Smart materials
- **Tools and Processes** - knowledge and understanding of hand tools, machines and deforming processes.
- **Methods of joining** – permanent and semi-permanent
- **CAD/CAM** – advantages and disadvantages. Examples of CAD CAM
- **Finishing techniques** – specifically for woods, metals & plastics

