ROYAL SCHOOL
ARMAGH

KEY STAGE 3

Year 10

SUMMER 2025

TABLE OF CONTENTS

Answering Questions:

- If a question is worth 5 marks you should aim to give 3 points.
- If a question is worth 10 marks, and asks for you to give both sides of an argument, you should aim to include 3 points on each side. You should also give a paragraph at the end showing your own view

Top Tips for Revision

- Make sure you know which topics you need to revise - make a revision list and a timetable of when you will revise each subject.
- Make your revision active. Don't just read notes. You could make flash cards, mind maps or use post it notes
- You could stick your mindmaps up on the wall and then walk around your room reciting the key details out loud.
- You could record yourself reading your revision notes and listen back to it regularly.
- Watching videos online can really help to bring your notes alive!
- Use colour and stick to the same colour for different topics
- Test yourself by completing practice questions or asking a friend to test you! This will identify areas of strength and weakness
- Build in rewards for your revision eg: your favourite snack or using social media
- Revise in short bursts: 20 - 25 minutes, then have a 5 minute break.

1. BIOLOGY

Photosynthesis

- Write a word equation for photosynthesis and respiration
- Label the structure of a leaf and explain how leaves are adapted for photosynthesis
- Draw and label a plant cell
- Describe the role of stomata in the leaf and explain the experiment carried out to see them
- Describe the **3 experiments** for testing a leaf to show that photosynthesis has taken place for example:
    - In variegated leaves (green with chlorophyll and white with no chlorophyll)
    - Without light
    - Without Carbon Dioxide
- Describe the experiment to find the rate of photosynthesis, identifying independent, dependent and control variables
- Be able to identify the variables in an investigation and produce a graph for a set of results

Food and digestion

- List the 7 key nutrients and describe their function and list sources of each
- Describe food tests for glucose, starch and protein including the process and reagents used and any colour changes.
- Identify and describe the function of the organs of the digestive system, how they are adapted for their function and associated experiments
- Explain what enzymes are, how they function (lock and key theory) and how changes from the **optimum** temperature and pH can affect them (**denature**).

Cells

- Describe the hierarchy of life
- Identify the main parts of the microscope and how to calculate magnification
- Label an animal and plant cell and describe the function of the organelles
- Identify specialised cells, their functions and adaptations

Circulatory system

- List the components in the blood, describing their function and how they are specialised for their function
- Describe the structure and function of the three main blood vessels
- Label a diagram of the heart and describe the direction of blood flow through the heart
- Describe and explain the effect of exercise on the heart

2. CHEMISTRY

Unit 1 - Chemical Reactions

Physical and Chemical Changes

- Explain what a chemical change is and be able to list examples of chemical changes
- Explain what a physical change is and be able to list examples of physical changes
- List observations associated with chemical reactions

Exothermic and Endothermic reactions

- Define the terms 'exothermic' and 'endothermic'
- Recall that bond breaking is exothermic and bond making is endothermic
- List some examples of exothermic and endothermic reactions
- Draw out apparatus used to investigate exothermic and endothermic reactions

Oxidation and Reduction

- Explain the difference between oxidation and reduction
- Recall examples of oxidation and reduction – reduction of CuO, burning Mg in oxygen etc (Learn reactions in your notes!)
- List observations associated with oxidation and reduction reactions (learn observations in your notes!)
- Explain what a REDOX reaction is
- Explain the terms oxidising agent and reducing agent
- Learn the reduction of copper oxide with hydrogen experiment

*** Thermal Decomposition will NOT be on your test ***

Unit 2 – Acids and Alkalis

Acids and Bases

- Explain what an acid, alkali and a base is
- List some examples of acids and alkalis
- Discuss safety aspects of using acids and alkalis
- Explain the difference between 'concentrated' and 'weak'

Indicators

- Recall that acids and alkalis can be identified using indicators
- Know the colour changes of red litmus, blue litmus, methyl orange, phenolphthalein and universal indicator.
- Explain how universal indicator can be used to determine the strength of an acid or alkali using the pH scale.
- Know the pH values of strong acids, weak acids, neutral substances, strong alkalis and weak alkalis.
- List examples of strong and weak acids/alkalis (including household substances).
- Discuss the limitations of using litmus paper over universal indicator.

Neutralisation

- Explain what happens during a neutralisation reaction.
- Be able to write a chemical equation for neutralisation (symbol equation)

- Describe practically how to use an indicator to make a neutral solution/salt.
- List everyday example of neutralisation reactions.

Reactions of Acids

- Recall how acids react with **metal hydroxides and metal oxides.**
- Write out word equations for the above reactions.
- Be able to draw and label any apparatus associated with each experiment.

Remember:

ACID + METAL OXIDE $\longrightarrow$ METAL SALT + WATER

ACID + METAL HYDROXIDE $\longrightarrow$ METAL SALT + WATER

Writing word equations

- Explain what a salt is and how they are formed
- Know what salts are formed from different acids
- Write word equations for reactions of acids.

<u>UNIT 3 - Chemical Analysis</u>

- ***Elements, Compounds and Mixtures***
  - Diagrams
  - Definitions
  - Chemical Symbols
- ***Pure and Impure substances***
  - Boiling point definition
  - Melting point definition
  - Pure substance definition
  - Drawing and labelling the warming curve
  - Working out whether a substance is solid, liquid or gas at a particular temperature
- ***Separating Techniques***
  - Be able to describe the processes of evaporation, filtration and chromatography
  - Definitions for the 's' words e.g. solvent, solution, solute etc
  - Definitions for miscible and immiscible
  - Draw apparatus diagrams for each process
  - Calculate the Rf value for chromatography
  - Explain how to use chromatography to separate out mixtures
  - Answer questions on chromatography

<u>UNIT 4 – Periodic Table</u>

Elements, Compounds and Mixtures

- Know the definitions of atoms, elements, compounds and mixtures.
- Be able to draw a diagram of each type.
- Know which elements exist as diatomic molecules

History and development of the periodic table

- Know the contributions of Dobreinher and Newlands towards the structure of the periodic table.
- Explain the major contributions of Mendeleev towards the development of the periodic table e.g. creative thinker, called columns groups, rows periods, left gaps, arranged elements based on atomic mass (big) number etc.
- Describe how the modern periodic table is different to the one which Mendeleev came up with e.g. now arranged by atomic number, transition metals and noble gases have now been added etc.

Layout of the periodic table

- Be able to describe the different properties of metals and non-metals
- Know how the periodic table is divided up into metals and non-metals
- Explain what a semi-metal is
- Be able to define the terms ductile and malleable
- Recall which elements are solids, liquids and gases.
- Draw diagrams of solids, liquids and gases.
- Know that the horizontal rows are called periods
- Know that the vertical columns are called groups
- Know that Group 1 metals are called alkali metals
- Know that Group 2 metals are called alkaline earth metals
- Know that Group 7 are called the Halogens.
- Know that Group 8 are called the Noble Gases.

Properties of the groups

- Describe and explain the reactivity and properties of Group 1 Alkali Metals, Group 2 Alkaline Earth metals, Group 7 Halogens and Group 8/0 Nobel Gases.
- Describe and explain the reactivity and properties of the Transition Metals.

TIPS!

- Make sure you learn diagrams of apparatus.
- Learn word equations.
- Learn your notes thoroughly!
- Learn observations to experiments in your notes.
- If a question is worth 3 marks, you will need to write 3 different points.
- Revision using a range of different revision strategies, mind maps, using colour, flash cards etc.
- Set enough time for your revision!

GOOD LUCK!

3. ENGLISH

Persuasive Writing - You will be asked to write a persuasive essay on a topic that you are not allowed to know in advance. Remember to adapt your writing style to the audience specified and adhere to the form of a speech. You should use a plethora of rhetorical devices to ensnare reader interest and convince them to your point of view. You must also use a variety of sentence structures, ambitious punctuation and a range of sentence types. Try to be ambitious with your vocabulary.

Media Texts - You will be asked two questions on media texts and will be presented with a DVD or book cover. You must focus on language for one question (analysing the writer's intention and reader reaction) and thus must know the names of persuasive devices. The second question will focus on presentational features (colour, layout, images and font) and you will be expected to analyse the effect of two presentational features used on the DVD or book cover.

4. FRENCH

- Accommodation and opinions on it with 'rester' (all 6 parts)
- How to use verbs for describing a holiday (aller / rester / faire / jouer) into the past tense
- Where you live (types of places to live in, different locations including prepositions e.g. en banlieue)
- Types of house
- The verb 'habiter' (all 6 parts)
- Facilities and places in the town
- Using il y a / il n'y a pas de
- Describing your area and giving your opinion of it
- On peut + infinitive (things you can / can't do in your town / village)
- All the parts of 'pouvoir' (to be able to)

5. GEOGRAPHY

Use the checklist below to help you with your revision before the examinations. We suggest you take one topic at a time and make sure you have revised each point thoroughly and can draw/annotate any diagrams where necessary.

Plate Tectonics

- Key terms and definitions
- Theories of plate tectonics and evidence
- The structure of the earth
- Plate Boundaries – names, movement, and location
- Types of plate boundary
- Plate boundary diagrams (draw, label, use)
- Explain global distribution of earthquakes and volcanoes
- Characteristics of volcanoes
- Formation of volcanoes
- Types of volcanoes including hotspots
- Challenges and opportunities of living near volcanoes
- Case Study - causes and impacts
- Earthquake anatomy and measurement
- Living with earthquakes
- Case Study: Turkey/Syria earthquake 2023

Ecosystems

- Key terms and definitions
- Energy flows and nutrient cycling
- Food chains and food webs
- Case Study: Deciduous Forest - Gosford Forest Park
- Interactions between flora and fauna and human impact
- Role of producers and consumers within an ecosystem
- Impacts of declining or increasing species within an ecosystem
- Global distribution of tropical rainforests
- Describe and explain characteristics of the Rainforest biome
- Hot and cold deserts - location, climate, flora and fauna
- Human Impact upon coral reefs
- How is coral formed? Why is it vulnerable? What are the threats?
- Location
- Benefits
- Management of coral reef ecosystems

6. HISTORY

TOPICS for REVISION: World War One booklet

The trenches:
- key terms and definitions
- Reason for trenches

Work/Daily Routine:
- jobs soldiers undertook

Food:
- Types of food
- Rations received
- Quality of rations
- Reactions to food

Hygiene:
- Threats to soldiers' health
- Detail and treatments of trench foot
- Detail and treatments of rats
- Detail and treatments of lice

Going over the top:
- Describe
- Order of the attack

The technology of the First World War:
- Detail of advantages and disadvantages for barbed wire, machine guns, flamethrowers, gas, tanks and planes

Artillery, shell shock and medicine:
- Definition of each
- Role of Artillery in WW1
- Symptoms of shell shock

Army punishments:
- Punishments and definitions

SOURCE HANDLING ISSUES

- **You should be able to demonstrate the following:**
  - the ability to **understand the meaning of sources**
  - the ability to **take evidence as 'quotations' from sources in order to support what you are writing.**
  - an awareness of **how much sources agree and disagree**
  - an awareness of **things which affect sources' reliability**
  - an awareness of **things which affect sources' utility/usefulness**

7. HOME ECONOMICS

- Calcium
- Vitamin D
- Osteoporosis
- Iron
- Anaemia
- Vitamin C
- Type 2 diabetes
- What is a consumer?
- Consumer Rights Act 2015
- Budgeting
- Debt
- Dealing with debt
- Payment methods
- Online shopping
- Food safety

8. ICT

Revise the following set of pdf notes (all are on GC in the relevant sections)

a. Health and Safety

b. Moral, Ethical and Legal Implications of ICT

c. Big Data and Databases - Databases activities in class and attachments (Big Data.pdf, database questions and database key terms and definitions pdfs)

d. Network Technologies - pages 2-3, 5, 13-14, 16-18

e. AI Ethics

f. ICT, AI and Employment

g. Data and Information

h. Pseudocode – python

9. MATHEMATICS

What will the exam consist of?
The exam will be based on topics from **Chapters 1, 2, 3, 4, 6, 8, 10, 11, 12, 14 (plus trigonometry and simultaneous equations)**
A full revision list is below. The exam will consist of one written paper lasting 1 hour 30 mins – you will be allowed to use a calculator throughout.

What should I bring to the Exam?
Calculator, Pen, Pencil, Ruler, Eraser and Protractor (for Pie Chart)

Algebra

- Solve linear equations involving one step, two steps, fractions and brackets
- Simplify algebraic expressions – including algebraic fractions
- Substitute into formula
- Expand brackets - single and double brackets
- Factorise expressions - single and quadratics (including difference of 2 squares)
- Set-up an algebraic expression and solve
- Change the subject of the formula
- Solve using the method of Trial and Improvement
- Solve simultaneous equations algebraically
- Draw a straight line graph using a table of values
- Write the equation of a straight line, stating the gradient and y- intercept

Number

- Write a number to the appropriate degree of accuracy (sf and dp)
- Use rounding to 1 significant figure to estimate a calculation
- Adding, subtracting, multiplying and dividing fractions including mixed numbers
- Convert between fractions, decimals and percentages
- Find percentage or fraction of an amount
- Increase or decrease by a percentage
- Find percentage increase and decrease
- Simple and compound interest
- Find the original amount of an item in a sale
- Change a number to and from standard form
- Write a number as a product of primes, HCF and LCM
- Use the rules of indices
- Square roots and cube roots
- Surds

Shape, Space and Measure

- Find the area and perimeter of 2D Shapes
- Find the area and circumference of a circle
- Find the radius and diameter of a circle given the area or circumference
- Find volume and surface area of 3D shapes (cube, cuboid, prism)

- Using Pythagoras' theorem find a missing side of a right-angled triangle
- Using Trigonometry find the missing side of a right-angled triangle
- Using Trigonometry find the missing angle of a right-angled triangle
- Use compound measures (DST, DMV and PFA)
- Convert between units (metric to metric eg. cm to m)

Data Handling and Probability

- Find the Mean, Mode, Median and Range for a set of numbers
- Find the Mean, Mode, Median and Range for an ungrouped frequency table
- Find an estimate for the mean from a grouped frequency table
- Find the modal group from a grouped frequency table
- Find the group containing the median from a grouped frequency table
- Draw and read information from a pie chart
- Scatter graphs
- Stem and Leaf diagrams
- Complete a cumulative frequency column from a grouped frequency table
- Draw a cumulative frequency curve
- Find the median and quartiles from a cumulative frequency curve

Revision Material

Complete the revision material provided by your teacher.
My Review and My Practice sections of the textbook are also useful for revision.
Maths support is on Tuesday afterschool in M2.

10. MUSIC

You should not only learn what is on this sheet. Rather, you should use it as a guideline for your more detailed revision. The headings should point you back to your Music booklet where you would have covered topics in greater detail.

i. Blues, jazz, ragtime and swing

Refer to page 2 in your booklet for key vocabulary.

The key features of and influences on blues, jazz and ragtime should be known (see pg 2-5). You should know the notes of the blues scale (page 16) and the chords of the 12 bar blues as outlined on page 9 – including knowing what pitches create the different chords, for example:
C major = C E G
C7 = C E G Bflat

You should be able to recognise instruments commonly used in these styles

You must be able to read and notate in both bass and treble clef.

ii. Making arrangements

It's important that you are aware of the elements of music and how they might be manipulated to create variations and arrangements.

Many of these key terms should have been known from Years 8 & 9. Make sure you are aware of what aspects of the music the following terms are referring to. You should be able to use this vocabulary in your written responses in both listening and written questions:

a. Pitch
b. Rhythm
c. Texture
d. Tonality
e. Dynamics
f. Tempo
g. Form
h. Articulation

11. PHYSICS

Electricity

- Electrostatics
- Moving charges
- Conductors, insulators and resistors
- Series and parallel circuits
- Use of ammeter to measure current
- Ohm's Law **V/I = R**

Forces

- Balanced and unbalanced forces
- Resultant force and acceleration
- Newton's Laws
- **F = ma**

Magnetism and Electromagnetism

- Permanent magnets
- Magnetic fields
- Electromagnetism
- Uses of magnets and electromagnets

Heat Transfer

- Conduction in solids
- Convection in liquids and gases
- Radiation in gases and vacuum
- Emission, absorption and reflection of radiation

Waves

- Transverse and longitudinal waves
- Velocity, frequency, wavelength and amplitude
- Wave Equation **v = fλ**
- Time period and frequency **T = 1/f f = 1/T**
- Sound
- Echoes
- Reflection of Light
- Refraction of Light

12. RELIGIOUS STUDIES

Exam Length: **1 hour**

Topics to revise: All work from this year

- Islam
- Ethics
    - Ethical language
    - The Sanctity of Life
    - The Death Penalty
    - Environmental Ethics
    - Animal Rights
    - The ethics of War
- Matthew's Gospel (Your teacher will discuss with you after Easter).

13. SPANISH

- Regular present tense verb endings (ar, er, ir)
- Time
- Adverbs of frequency
- What you have for breakfast, lunch, snack, dinner. Fruit and vegetables
- Me gusta comer etc + reasons (adjective agreement)
- Body parts (including me duele / duelen + body part)
- Me siento mal (all illnesses) + desde hace / desde + exact time
- Clothes and accessories
- Llevar (all 6 parts)
- Colours (adjective agreement)
- This / that / these / those
- Comparing with más and menos
- Weather + what you wear
- Me gusta llevar etc + reason (adjective agreement)
- Future tense - what you are going to wear (all 6 parts of 'ir -to go' + infinitive)
- Sport, free time activities, preferences and opinions
- jugar, ir, hacer – know all 6 parts of each of these irregular verbs