Revision summary for Year 10 exams Higher Tier – Combined 2019

These are the topics you will have covered since January of Year 9 up to the Year 10 exams and some of the key areas that might come up in the Year 10 exams:

Biology

B1 Cell biology

- Animal and plant cells
- Microscopy
- Transport in cells – diffusion, osmosis and active transport
- Required practical – effect of a range of concentrations of salt or sugar solutions on the mass of plant tissue

B2a Organisation

- The human digestive system
- Required practical – the effect of pH on the rate of reaction of the enzyme amylase
- The heart and blood vessels
- Blood and its components
- Coronary heart disease
- The effect of lifestyle on non-communicable diseases

B7 Ecology

- Interaction of organisms in a community
- Effects of abiotic and biotic factors on organisms
- Levels of organization – key ecological ideas
- Required practical – measure the population size of a common species in a habitat.
- How materials are cycled in an ecosystem
- Biodiversity

Chemistry

C1 Atomic structure and the Periodic Table

- Subatomic particles (protons, electrons, neutrons and isotopes)
- Arrangement of the periodic table
- Group 1 – properties, reactions and reactivity explained
- Group 7 – properties, reactions and reactivity explained

C2 Bonding, structure and the properties of matter

- Ionic bonding and ions; properties of ionic compounds
- Covalent bonding and molecules; properties of small molecules and giant covalent lattices
- Metallic bonding and alloys
- The 3 states of matter and changing between the 3 states

C5 Energy changes

- Energy transfer during exothermic and endothermic reactions
- Required practical – eg investigating temperature change in neutralisation reactions
- Reaction profiles
- Bond energies

C8 Chemical analysis

- Pure substances and formulations
- Understanding chromatography and Required practical – chromatography

Physics

P1 Energy

- Energy stores and systems
- Changes in energy and the equations for kinetic and gravitational energy stores
- Power equations
- Energy transfers and efficiency
- Energy resources

P3 Particle model of matter

- Density and the density equation
- Model of matter and changes of state
- Internal energy
- Temperature changes and specific heat capacity
- Change of heat and specific latent heat
- Gas particle motion

P4 Atomic structure

- Atoms and isotopes
- Nuclear radiation and nuclear equations
- Half life and graphs
- Contamination and irradiation

P6 Waves

- Transverse and longitudinal waves
- Properties of waves
- Wave speed equation including required practical - measuring frequency, wavelength and speed of waves in a ripple tank and waves in a solid
- Types of electromagnetic waves
- Properties and uses of the electromagnetic spectrum

All Science exams will test your understanding of Working Scientifically – make sure you understand words like:

- hypothesis
- independent variable
- dependent variable
- control variables
- precision
- accuracy
- errors
- valid results
- resolution

You need to know how to apply the skills you have learned to new practical situations you may have never tested – so don't just learn the required practicals off by heart – think of other variables that could also be tested and how you would test them.

Make sure you know how to:

- write plan
- write answers in standard form and to 2 or 3 significant figures.
- work out means
- make calculations from tables and graphs
- interpret tables
- draw and interpret graphs
- evaluate methods

Also, make sure you know the names of basic lab equipment and how to draw and spell them.

All Science exams will involve calculations and graph drawing as well so make sure you bring a **pencil, rubber, ruler and calculator to the exams as well as a black pen.**