Revision summary for Year 10 exams – Triple 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; eukaryotes and prokaryotes
- 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 and treatments
- The effect of lifestyle choices on non-communicable diseases

B7 Ecology

- Levels of organisation – key ecological ideas
- Required practical – measure the population size of a common species in a habitat.
- How materials are cycled
- Biodiversity – how it is affected and how we are trying to improve it
- Trophic levels in an ecosystem and transfer of biomass
- Food security and the role of biotechnology

Chemistry

C1 Atomic structure and the Periodic Table

- Subatomic particles (protons, neutrons and electrons 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

C3 Quantitative chemistry

- Relative formula mass
- Conservation of mass
- Moles
- Calculating amounts of substances in equations

C8 Chemical analysis

- Understanding chromatography
- Required practical – chromatography
- Chemical tests for identifying metal and non-metal ions
- Required practical – identifying unknown substances using a range of chemical tests
- Flame emission spectroscopy

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
- Particle motion in gases
- Pressure in gases and pressure equation

P4 Atomic structure

- Atoms and isotopes
- Nuclear radiation and nuclear equations
- Half life and graphs
- Contamination and irradiation
- Hazards and uses of radioactive radiation
- Nuclear fusion and fission

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
- Reflection
- Sound waves
- Waves for detection and exploration
- Types of electromagnetic waves

- Properties and uses of the electromagnetic spectrum
- Lenses
- Visible light
- Black body radiation

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

- hypothesis
- independent variable, dependent variable and control variables
- precision
- accuracy and 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 a plan
- work out means and write answers in standard form and to 2 or 3 significant figures.
- make calculations from tables and graphs
- draw and interpret graphs; interpret tables
- 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.**