

# YEAR 9\_2 & 10\_2 SCIENCE

## Chemistry

- Unit Outline -



### Course Description:

In this unit students will continue from the year 8 course to further develop their understanding of the structure of atoms, what happens to compounds and elements during chemical reactions (including conservation of mass) and energy transfer. Students will specifically look at chemical reactions involving acids, bases, metals and carbonates, as well as polymers (hydrocarbons). They will also explore combustion reactions and their products including respiration and photosynthesis and their role in biological processes.

### Course Outcomes:

By the end of this unit you should be able to:

- Name the sub-atomic particles and where they are found in an atom.
- Understand the relevance of the Atomic Number and Atomic Mass associated with each element.
- Balance a simple equation.
- Describe conservation of mass.
- Describe several general reactions and what products you will get.
- Describe polymers and the processes involved in their formation.
- Describe respiration and photosynthesis and their relationship with oxygen and energy production.

### Course Organisation:

The organisation of the unit will be:

- The students are presented with both theoretical and practical work to develop their knowledge and skills.

Student's activities will include:

- Developing a knowledge base using notes, questions, bookwork/worksheets.
- Conduct practical activities to explore and visualise theoretical concepts.
- Practice using terminology and language in oral and written activities.

### Course Timeline:

Wk	Activity	Assessment
1-3	<b>Atomic Structure and balancing equations</b> <ul style="list-style-type: none"><li>• Sub-atomic structure</li><li>• Conservation of mass</li><li>• What is matter</li></ul>	
4-5	<b>Types of Reactions</b> <ul style="list-style-type: none"><li>• <b>Standard reactions</b></li><li>• Common uses</li></ul>	
5	<b>Revision and Test</b>	Test
6-9	<b>Standard reactions</b> Neutralisation Acid-Metal Metal-carbonate	

	Combustion Respiration and Photosynthesis	
9	<b>Revision and Test</b>	Test
9-10	<b>Miscellaneous reactions</b>	

**Course Vocabulary:**

- Atom
- Nucleus
- Electron
- Proton
- Neutron
- Reactants
- Products
- Reaction
- Equation
- Acid
- Base
- Isotope
- Metal
- Ion
- Non-metal
- Polymer
- Polymerisation
- Combustion
- Respiration
- Photosynthesis

# - Assessment Outline -

## Course Assessment:

Wk	Assessment type	Weighting	Marks achieved	Your Total
4	Test	30%		
8	Test	40%		
3-9	Participation in practical activities	30%		

\*specific marks to be advised

## Specific Equipment required for each lesson:

- File/book to write in
- Pens, ruler, calculator