

1. Introduction to Science

At the end of this unit you will be able to work confidently and safely with a range of scientific apparatus. We start by learning how to **identify risks and hazards** in the science laboratory before moving on to look at common pieces of scientific equipment and how to use them to make **accurate measurements**. You will then be taught how to use a Bunsen burner safely to enable you to complete an investigation. We will learn how to **identify variables** in an experiment and then **write a scientific method** that can be followed to collect data. This data will then be **analysed** to write a **scientific conclusion**



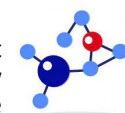
2. Matter 1: Particles

We start by defining exactly what a **particle** is and then look at how they are arranged in solids, liquids and gases. We **investigate** the properties of solids, liquids and gases and use our knowledge of the arrangement of the particles to **explain** these properties. We build on our knowledge about the movement of particles to explain what **diffusion** is and how it happens. We then **calculate** the **density** of different materials and explain differences using our knowledge and understanding of the particle model.

SUMMATIVE ASSESSMENT 1
(Ecosystems 1, matter 1, forces 1) Week 11

3. Matter 2 - Elements and compounds

We begin by looking at what everything is made of and how many different types of **atoms** there are. We then progress to studying **atomic structure** and the **subatomic** particles that make up all atoms. From this we look at combining different atoms and we **compare** and **contrast elements, compounds** and **mixtures**. We progress to writing **chemical formulae** and **calculating relative formula mass** before considering what happens to atoms in **chemical reactions**. We finish by considering what **polymers** are and **evaluating** how their properties affect their uses.



START!

Year 7

Half term 1

Half term 2

4. Reactions 1 - Chemical reactions

In this chemistry unit we start to consider what happens in chemical reactions. We make **observations** of chemical **reactions** so that we can detect if a chemical reaction is happening rather than a physical change. Then building on the work on elements and compounds we start to write **word equations** for chemical reactions. We move on to focus on combustion reactions, looking at complete and incomplete **combustion** and considering the products in these reactions before **investigating** the **energy** released from different fuels.



Conclusions from data: energy in fuels investigation

Baseline Assessment.
Written test to determine starting point for all students in science

Communicating scientific ideas: using models to explain observations extended writing,

Half term 4

Half term 3

SUMMATIVE ASSESSMENT 2
(organisms 1, matter 2, forces 1) Week 19

Numeracy: Chemical calculations relative formula mass

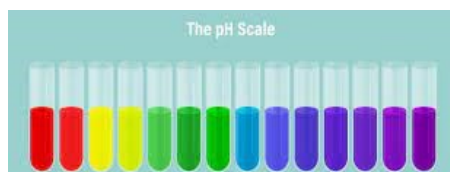
SUMMATIVE ASSESSMENT 3 (genes 1, reactions 1, waves 1) Week 27

Half term 5

Half term 6

5. Reactions 2 - Acids and Alkalis

We return to our studies of chemical reactions by focusing on **acids** and **alkalis**. We begin with categorising chemicals as acids and alkalis and considering the properties of them. We then look at the use of **indicators** to identify them. We study **neutralisation** reactions and making **salts**. As well as writing **word equations** for reactions we will consider working safely during experiments and **writing risk assessments**,



Risk assessment: making a salt

SUMMATIVE ASSESSMENT 4
(organisms 2, reactions 2, electromagnets 1, genes 2) Week 37

