

Science @ WBS Year 8 Roadmap

Subject Aim: In Year 8 we want you to enjoy science and to develop and expand your skills and knowledge from Year 7. This will prepare you for the Year 9 GCSE content.

Topics 1a and 1b will be taught at the same time, one by each teacher, then 2a and 2b etc.

Topic 1a – Microbiology

This topic looks at bacteria and fungi as well as viruses. You will learn about useful microbes and those that cause disease. The work of some key scientists from the past will be studied. You will carry out practical activities and grow bacteria in the lab.

Topic 1b – Waves

A look at the properties of waves and sound waves in particular. You will learn about how sound travels, how we hear sound and how sound can be damaging. The topic includes an introduction to the electromagnetic spectrum and how waves are useful. You will try to measure the speed of waves.

Topic 2a – Biological Energy Transfer

You will begin with a look at the structure of plants, concentrating on the leaves and photosynthesis. Then you will study food chains and webs, followed by energy and decomposition. In this topic you will carry out an animal behaviour investigation.

Topic 2b – Acid Reactions

This topic looks at acids and alkalis, including using them in the lab and measuring their strength using indicators. You will carry out a practical is used to illustrate the theory of neutralisation. You will look at some key reactions of acids and name the compounds and salts formed.

Topic 3a - Chemical Change

You will learn about the gases in air and the reaction of elements with oxygen. Then you will learn to write chemical equations and name the products that are formed. You will carry out an investigation to find out which fuel has the highest energy value.

Topic 3b -The Effect of Forces

This topic follows on from the Y7 Forces topic. You will learn about balanced and unbalanced forces and study speed and acceleration. The topic will introduce you to pressure and you will use theories to understand real life examples such as levers.

Topic 4a – Energy and Digestion

This topic looks at the diet and what happens to the food you eat. You will understand the importance of the digestive enzymes. Practical activities include food tests and enzyme experiments. You will also learn the basics of the process of respiration.

Topic 4b – Electricity

In this topic you will understand and build series and parallel circuits and study current. You will learn about energy and look at the different types, as well as considering the environmental concerns relating to energy use. You will also learn about magnetic force fields and the use of electromagnets.

Topic 5 – Energy and Thermal Physics

This topic allows you to carry out several full investigations using all of your scientific skills. You will look at how heat is transferred and then apply this to understand heat loss, using this to investigate insulation and design an energy efficient home.

Assessment

In year 8 there are 3 Key Assessments in Science. You will receive feedback on your current grade following these tests and guidance on how to improve. At the end of year 8 we will use the average score from these tests as the basis of setting decisions going into year 9.

Key Assessment 1	Week beginning 09/10/2023
Key Assessment 2	Week beginning 15/1/2024
Key Assessment 3	Week beginning 22/4/2024

Homework and Revision

Homework is set by your class teacher on Brightspace. You can expect to get two homework tasks per topic.

Revision for the assessments is set by the Head of Department several weeks before your assessments. Your class teachers will give you resources and strategies to help you revise. This will include revision guide and some example questions to help you prepare for the assessment. You should also use the work you do in class in your exercise books to help you to revise.

Enrichment themes

You will look at careers in science throughout the year. You will have the opportunity to engage with Science outside the classroom through STEM club (Science, Technology, Engineering, Maths) and Gardening Club.

Where Next?

In year 9 you will begin your GCSE course and you will be taught the three science subjects separately. In Biology you will begin with a more detailed look at the topic of Cells. In Chemistry you will study Core Chemistry concepts and in Physics you will learn more about Forces.