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# SCIENCE

## Curriculum Newsletter

### YEAR 10

#### Contact



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# Curriculum Intent

The Science curriculum is inclusive and ambitious for all students, designed to engage students and strengthen the memory of what is being learnt. The curriculum is organised into 12 Big Ideas that are developed through a series of key concepts organised into teaching topics which are revisited throughout the KS3, 4 and 5 programmes of study. We aim to spark a lifelong passion for science by cultivating a sense of wonder and awe about the natural world.

Our curriculum intends to foster a spirit of curiosity and inquiry, encouraging students to ask questions and seek answer and connect science to their everyday lives, demonstrating its relevance and importance. Throughout the science curriculum we aim to equip students with essential scientific skills, including observation, data collection, analysis, and critical thinking. Students will be provided with opportunities for engaging in hands-on practical work, encouraging exploration and experimentation.

The Science curriculum also provides opportunities for students to explore the ethical and societal implications of scientific advancements. It encourages critical thinking about global challenges, such as climate change and sustainability, and helps nurture responsible attitudes towards the environment and living organisms.

## Year 10 Curriculum

Science is a set of ideas about the material world. During Year 10 and 11 you will develop your understanding and knowledge of key scientific ideas as well as developing key scientific enquiry skills.

Year 10 will transform you into a chemical alchemist, a biological code cracker, and a physics powerhouse! Get ready, because we're about to crack the code of the universe, atom by atom, cell by cell, and force by force!

Click on the subjects to access BBC Bitesize GCSE revision, quizzes and podcasts.

### GCSE Chemistry Y10

Prepare to be amazed by Chemistry, the language of the universe! Chart your course through the key topics of atoms, elements and compounds, chemical reactions, quantitative chemistry, and energy changes. We'll master the mysteries of the periodic table, understand the dance of chemical reactions, decipher the language of equations, and witness the dramatic power of energy transformations. Get ready to build model molecules, analyse real-world data on chemical reactions, and understand how these concepts weave together into the magical tapestry of matter and change. Further develop your understanding of how chemistry shapes everything from fireworks to food!

### GCSE Biology Y10

In Biology we will master the mysteries of cells, understand the organization of living things, dissect the immune system's defenses, and unlock the secrets of energy flow in life. The key topics in Year 10 include cell biology, organisation, infection and response, and bioenergetics. Get ready to build model membranes, analyse real-world data on diseases, and understand how these concepts weave together into the tapestry of life!

### GCSE Physics Y10

Explore the Physics playground. Unleash the mind-blowing forces of physics that govern our world! We'll explore through the key topics of energy, forces and motion, electricity, and waves. Get ready to master the mysteries of energy transfer, understand the forces that govern our world, dissect the secrets of electric circuits, and unravel the physics of sound and light. You will have to build model circuits, analyse real-world data on forces, and understand how these concepts weave together into the symphony of the universe!

Throughout your GCSE we will see how understanding science unlocks the secrets of our world! We'll investigate the science behind medical breakthroughs, solve real-world problems with engineering principles, and explore the ethical implications of scientific discoveries. Become a responsible citizen scientist and understand how science shapes your future!

# Big Questions in Year 10 Science

- What are the limits of human life? Can we increase lifespans, repair aging bodies, and what are the potential consequences of such advancements?
- How can we control and utilize chemical reactions for our benefit? From catalytic converters to drug development, how can we manipulate reactions to solve problems and improve our lives?
- How will physics shape the future of energy? From nuclear fusion to renewable energy sources, understanding physics is key to creating sustainable solutions for our growing energy needs.

## Assessment Points

Students are assessed at the end of each topic, roughly once per half term (per science). Assessments are online and include short answer written questions and multiple-choice questions. Students will also sit three written summative assessments during the year (per science), assessing accumulative knowledge, including a mock exam during the summer term (Paper 1 content).

## Immerse Yourself

### Save My Exams

- ✓ Online Revision
- ✓ Progress Checks
- ✓ Exam Practice

### Educake Science Platform

- ✓ Interactive Homework
- ✓ Study Guides
- ✓ Independent Study

Students have access to the online quizzing platform Educake. Every question is auto-marked, and students get instant feedback. Students can set themselves quizzes for more practice. They can see how they are doing on every topic and can identify areas to revise based on their progress.



## Test Your Knowledge...

EducationQuizzes GCSE Science quizzes are a fantastic way to memorise relevant scientific terms to help you with your studies. Click the computer to start!

# Praise and Reward

Our rewards system can be broadly split into four categories: classroom level, subject level, school level and privilege rewards. We'll focus on classroom and subject rewards here - for more information about our rewards schemes, please see our website.

## CLASSROOM LEVEL REWARDS

Awarded for: working hard, taking risks and rising to a challenge, making mistakes and learning from them, helping others, and taking pride in the school community.

Rewarded by: praise postcards, positive phone calls to parents/carers, positive text messages home, and lesson based prizes.

## SUBJECT LEVEL REWARDS

Reward scheme: Star of the Week, Curriculum Awards (Subject/School Way, Participation, Working with Pride, Embracing the Whole Curriculum), High Flyer, Extra Mile, Most Improved.

Rewarded by: names displayed on reward boards, certificates, social media posts.

# Broadening Horizons

Our intent is that all students have a full understanding of how to develop themselves as well rounded citizens, maintain healthy relationships and understand how to keep themselves safe both online and in their day-to-day life. We want all students to know what options are open to them in the future and understand the routes they have in order to progress on their life journey.

Students can also develop their science skills and knowledge further by visiting Science Museums further afield that link in with the Year 10 Science topics. There are lots of Science Museums all across the UK you can visit, click on their logos to find out what science experiences they can offer you!

## History of Science Museum - Oxford University

The History of Science Museum is home to an unrivalled collection of scientific inventions, devices, and instruments from different cultures, places, and times in human history. A must visit for any budding Physicists to see their famous physics exhibit including the blackboard written on by Albert Einstein (1879-1955) when he gave a series of lectures in Oxford.



## Jodrell Bank - Macclesfield

Jodrell Bank is an amazing, unique, and awe-inspiring place. A world-leading deep-space radio observatory, a UNESCO World Heritage Site. Uncover the science and stories of this fascinating place through a range of interactive exhibitions, planetarium shows, events, and more.

# Careers

We run a series of 'Careers in the Curriculum' weeks in our school. For Science, this week takes place in January.

Students take part in a number of activities to encourage them to think about how what they learn in the classroom can be applied in a number of future careers. In Year 10, we start to look at transferable skills Science can teach you. Learning about Science in school helps develop a huge range of skills and knowledge that will be crucial to you in your working life and beyond.

Check out our 'Careers in the Curriculum' section on our website by clicking the Florence flask...



## Thinking about a Career in Science?

By Year 10, you may be considering taking your love for science further and making a career out of it. You will study all 3 Science subjects up to GCSE level in secondary school and have the option to study them at a higher level when you leave. The Royal Society of Chemistry detail in this short why a career in Chemistry could be right for you.

Click their logo below to watch the video and be inspired to choose Chemistry.



## Get Interactive

BBC Bitesize is an approved revision resource that will help you break down, digest and remember GCSE Science topics.

Click on their logo to access the GCSE Combined Science quick-fire quizzes and get a head start on revising for your mock exams this year.



## Science Study Lounge

Ditch the dull and dive into the Wickersley Partnership Trust Science wormhole! Buckle up for a science safari where you'll blast off to the Galapagos, crack museum mysteries, and become a science superhero, all without leaving your seat!

- Snorkel with sea iguanas on a VR mission to the Galapagos? We're talking 360° views of volcanoes, giant tortoises chilling, and Darwin's finches chirping your way to epic discoveries!
- Crack the code at the National History Museum? Hunt for missing dino bones, decipher ancient scrolls, and solve scientific puzzles like a real-life Indiana Jones!
- Become a citizen scientist with weekly challenges? Build the greatest bridge ever, whip up erupting volcanoes in your kitchen, and win bragging rights (and maybe even prizes!) as the top science sleuth!

Keep an eye out for guest appearances from real-life scientists who'll spill the beans on their mind-blowing research and answer your burning questions. Access by clicking on the Science Study Lounge title!

# The Science Way

Our subject has a 'Subject Way' at the heart of it. Our Subject Way is designed to help students become young subject specialists. The Subject Way has two main purposes:

Firstly, to teach students the vital skills they need to achieve their full potential and gain the very best grades they can. Secondly, to teach students how each subject relates to the wider world, incorporating the life skills they will learn.

The Science Way is followed in all of our lessons. It is designed to help students become young subject specialists and has two main purposes: to teach students the vital skills needed to achieve their full potential, and to demonstrate how Science relates to the wider world.

**THE SCIENCE WAY**

**WE MAKE LINKS BETWEEN BIG IDEAS IN SCIENCE**

- We can make observations **describe what we see** &
- We work safely & look out for hazards**
- We can learn from successes & failures **and adapt to do things better**

**WE EVALUATE EXPERIMENTAL RESULTS IN LIGHT OF THE ORIGINAL PROBLEM**

- We can explain everyday things in a scientific way
- We can work practically with people with different skills & knowledge
- We use scientific vocabulary accurately & talk like a scientist
- We can use numbers and data to support our work and obtain meaningful **information**
- We can identify key issues in a problem and use our scientific knowledge to tackle them
- WE ALWAYS ASK QUESTIONS AND TRY TO FIGURE OUT WHY**

 WICKERLEY PARTNERSHIP TRUST

**SUBJECT WAYS**

## Have Your Say... ✨

At WPT we're always looking for feedback. If you have any thoughts/opinions on this Curriculum Newsletter, its content or the curriculum in general, please scan the QR code to fill out a short feedback form.