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# SCIENCE

## Curriculum Newsletter

### YEAR 9

#### 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 9 Curriculum

Get ready to unravel the mysteries of the Universe and dive into the burning questions that ignite scientific discovery. Be the master of observation, measurement, and data analysis. We'll explore the tools of the scientific trade and learn how to interpret the clues they reveal. Get ready to conduct thrilling experiments, build your own scientific models, and turn data into dazzling discoveries!

In Year 9 you will study 6 topics in science linked to the 12 big ideas, click the topics below to explore BBC Bitesize information on these KS3 Science units...

### Reactions and Energy

Fuel your imagination in this Year 9 adventure into the dynamic world of reactions and energy! We'll explore fizzy concoctions, burning bonfires, and even the reactions happening inside your own body, unlocking the secrets of energy transfer at every turn. Get ready to conduct thrilling experiments, build models of molecules, and understand the microscopic choreography behind these magical transformations!

### Genetics and Evolution

Are you ready to decipher the secret code of life and climb the evolutionary tree like a pro in this Year 9 adventure? We'll journey into the thrilling world of genetics and evolution, where hidden traits, invisible instructions, and ancient transformations collide. Witness the breath-taking story of evolution, where life adapts and changes over time! We'll explore natural selection, Darwin's theory, and the amazing fossils that tell the story of Earth's creatures. Get ready to build model ecosystems, conduct simulations of natural selection, and understand how species change to survive in a changing world!

### Electricity and Magnetism

Charge up your Year 9 by unleashing the electrifying power of electricity and magnetism! Get ready to channel your inner superhero and harness the invisible forces that power our world! Discover the invisible power of electricity. We'll explore circuits, build electromagnets, and witness the incredible power of static electricity first-hand.

### The Earths Resources

This Year 9 unit will transform you into a resourceful rock detective, a water-wise wizard, and a champion of sustainability! Embark on a thrilling journey to the heart of Earth, uncovering the treasures and tribulations of our planet's precious resources. Put your understanding of Earth's resources to the test with problem-solving scenarios, and real-world applications.

### Biodiversity

Untangle the breath-taking connections between different species, from tiny ants pollinating flowers to hungry wolves controlling prey populations. We'll explore food chains, webs, and niches, understanding how every creature plays a vital role in keeping the planet's ecosystems ticking! Investigate the challenges facing our planet's biodiversity, from habitat loss to climate change and invasive species. We'll analyse real-world data, conduct biodiversity surveys, and brainstorm innovative solutions to protect endangered species and ecosystems. Get ready to become advocates for nature and champions of conservation!

### Space

Launch into a galactic adventure, soaring past planets, unravelling cosmic mysteries, and discovering the wonders of the universe beyond our wildest dreams! See how understanding space unlocks the secrets of our world! We'll investigate the impact of meteors on Earth's history, explore the science behind satellites and communication technologies, and even discover how space research leads to innovations that improve our lives here on Earth.

# Big Questions in Year 9 Science

- How do living things interact with each other? Explore the intricate web of relationships within ecosystems, from predator-prey interactions to mutualistic symbioses.
- What are the ethical boundaries of genetic engineering? Can we modify human embryos, and if so, for what purposes? Do we risk playing God?
- What is gravity, and why does it exist? This invisible force pulls us to Earth, but what's its origin, and does it affect other worlds?

## Assessment Points

Students are assessed at the end of each topic, roughly once per half term. Assessments are online and include short and long answer written questions and multiple choice questions. Students will also sit two written summative assessments during the year, assessing accumulative knowledge.

## Immerse Yourself

### BBC Bitesize Science

- ✓ Videos
- ✓ Quizzes
- ✓ Revision Tools

### 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 KS3 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 9 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!

## Mobile Planetarium - Rotherham

Wonder Dome's regular visits to Rotherham and the surrounding areas have inspired and motivated thousands of students for over 10 years. A visit from the Rotherham mobile planetarium will kickstart their love for space and science, and add a captivating addition to any space-themed topic. Y9's will be receiving a visit from them this term! Click on the logo for more information.



## Natural History Museum - London

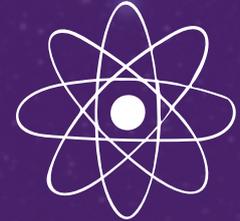
The Natural History Museum in London is trip worth planning for all budding scientists! Find answers to your big nature questions. Delve into stories about our research, scientists and the collections we care for. Uncover the history of life on Earth, from the smallest insects to the largest mammals. If you can't make the trip, check out their website for interesting articles and news on science topics including your Year 9 Biodiversity topic! Click on the logo to find out 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 9, we start to look more in depth at jobs and qualifications in science.

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



## Thinking about a Career in Science?

By Year 9, 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. Fuse School Youtube discuss a wide range of marvelous careers in the world of Biology in their youtube short.

Click their logo below to watch the video, you might be surprised on what you see!

**fuse**school

## Get Interactive

Wonderlab+ from the Science Museum group is a fantastic interactive resource for all science lovers!

Watch videos and test your knowledge, get creative with their make and do activities or learn more about space and our world with their fun interactive website. Click on their logo to visit their website now.

**WONDERLAB+**

## 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**

**THE SCIENCE WAY**  
**THE SUBJECT 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 can explain everyday things in a scientific way**

We can work practically **with people with different skills & knowledge**

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

**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**

SUCKLEY 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.