Science KS3 Learning Journey

Subject Overview?

Science helps us understand the world around us and plays an important role in the technology we use every day. At Cardinal Langley, all students study Biology, Chemistry and Physics up to the end of Key Stage 4 (following the National Curriculum and AQA GCSE specifications). Our science lessons focus on big questions and big ideas that encourage curiosity, problem-solving and independent thinking. Through a clear mastery approach, students build strong knowledge and skills that prepare them confidently for success at GCSE and beyond.

Working Scientifically is embedded throughout all Science units, allowing students to regularly practise key skills such as planning investigations, analysing results, and evaluating evidence. At the start of Year 9, these skills are revisited and developed further in a dedicated unit. This unit helps students strengthen their confidence with scientific methods and prepares them for the increased demands of GCSE Science courses by ensuring they understand how scientists think, work and communicate their ideas.

Key Stage 3

In Key Stage 3, students begin their science journey in form groups in Year 7, before moving into sets or mixed-ability groups in Years 8 and 9. Lessons are designed to be fun, practical and hands-on, encouraging students to explore the big questions that Science asks about the world around us. Students develop essential scientific skills by carrying out investigations and experiments, building confidence and curiosity. Through studying Biology, Chemistry and Physics, they gain a strong understanding of key scientific ideas and learn how to apply these principles to everyday life.

Electronic Links

Teams
Century
BBC Bitesize

Yr7

How can we test if what we believe is actually true?

Is there any other life in the universe?
- Cells and organisation
- Atoms, elements & compounds
- The Periodic Table
- Earth & atmosphere

What makes us Human?
- Reproduction
- Digestion
- pH
- Gas exchange systems & health
- Waves (light & sound)

What makes the ultimate athlete?
- The skeletal & muscular systems
- Cellular respiration
- Nutrition & health
- Pure & impure substances
- Materials
- Forces & motion

Yr8

Could we survive on Mars?
- Matter
- Pure & impure substances
- Electricity & magnetism
- Plant reproduction
- Photosynthesis

Is there a future for planet Earth?
- Ecosystems
- Genetics & evolution
- Earth & atmosphere
- Energy & transfers
- Changes in systems
- Energy in waves

Is your bike indestructible?

Around 5 million people live in flood risk areas in the UK.... Can we help?

Can we save the planet from the decisions we make at home?
- Chemical reactions
- Materials
- Energetics
- Energy changes & transfers
- Pressure in fluids

Yr9

9.1 How does Science work?

Working Scientifically

9.2 How do we know the structure of something we cannot see?

Can stem cells really cure diseases?
- Cell structures
- Cell transport
- Cell division

9.3 Is it possible to walk through a wall?
How can we predict the way substances react?
- Atoms, elements & compounds
- Separating mixtures
- The Periodic Table

9.4 What happens to all the energy in an explosion?
Why do we call radiators, radiators?
What is the ultimate source of energy?
- Energy stores & transfers
- Energy & work
- Efficiency
- Energy transfer
- Specific heat capacity
- Heating & insulation

9.5 Who would win in a fight, a polar bear or a grizzly bear?
- Ecology
- Field investigations
- Competition
- Adaptations