SBC

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Summer School

COURSE OVERVIEW

Future Scientists

12-16yrs

Eton College

At a glance

Introduction to Future Scientist

Future Scientists at Eton College is designed for students aged 12–16 who want to challenge their understanding of the natural world and take their curiosity further. Across biology, chemistry and physics, you'll carry out experiments, test ideas, and develop the skills that make science meaningful: observation, analysis, and clear communication. The programme goes beyond classroom learning. You'll investigate real-world questions, work with your peers on group projects, and practise presenting your results as scientists do. By combining theory with hands-on enquiry, Future Scientists equips you with both subject knowledge and the ability to think critically about how science shapes our lives.

Academic Content

18 hours of subject-specific academic content per week with an experienced subject tutor, delivered through interactive and hands-on lessons

English Language Level

Students require a minimum English level of B1+ to enrol onto this programme.

About the programme

Future Scientists is a two-week programme for students who want to explore science in greater depth and understand how it applies to the world around them. You'll study biology, chemistry and physics through practical experiments, guided research and clear explanation, building confidence in how to design, test and present investigations.

The course strengthens your ability to work like a scientist. You'll learn how to plan experiments with care, record data accurately, and evaluate results critically. Alongside this, you'll examine current developments in science and consider the ethical and social questions that arise from them, encouraging you to think about the wider impact of discovery and innovation.

Collaboration is central. You'll take part in group challenges that require shared problem-solving and discussion, reflecting how scientific progress relies on teamwork as much as individual insight. Working closely with tutors who bring both subject expertise and teaching experience, you'll be supported to stretch your understanding and approach science with curiosity and precision.

By the end of the programme, you'll have gained a stronger grasp of scientific principles and practical skills, along with the confidence to explore them further at school, university, and beyond.

FUTURE SCIENTISTS | 12-16 YRS | B1+ | 2 WEEKS | ETON COLLEGE

Key Learning Outcomes

1.

Understanding Core Scientific Principles

Develop a strong grasp of the key concepts in biology, chemistry and physics, while also seeing how these subjects connect to explain the natural world. You'll build knowledge that forms the foundation for more advanced study and gives you confidence in tackling new scientific ideas.

2.

Developing Practical Skills

Gain hands-on experience in designing and carrying out experiments, collecting data carefully and interpreting results with accuracy. These practical skills will help you approach problems methodically and understand how scientific knowledge is created in real settings.

3.

Thinking Critically About Science

Strengthen your ability to analyse evidence, weigh up competing arguments and reflect on the wider consequences of scientific discoveries. You'll learn to approach information with a questioning mindset, considering both the possibilities and the responsibilities that come with progress.

4.

Communicating Scientific Ideas

Practise explaining complex ideas in clear and engaging ways, whether through discussion, written work or visual presentation. By learning how to share your thinking effectively, you'll gain confidence in contributing to scientific conversations and working collaboratively with others.

Subject Theme

Mission 2035

Mission 2035 places students at the centre of a global taskforce facing emergencies that demand immediate action. Across the week, you'll step into scenarios that mirror the complexity of the real world – cyberattacks, energy shortages, pandemics, climate disasters – and work under pressure to design responses that could hold society together. Each subject contributes to the taskforce: entrepreneurs pitch future companies that tackle urgent needs, scientists prototype crisis inventions, and leaders deliver government briefings that balance strategy with clarity. The intensity builds as decisions must be made quickly, strategies tested, and solutions presented with authority. The week ends with live briefings where teams deliver their plans to the audience as if addressing the international community. It's fast-paced, collaborative, and a true test of resilience, innovation, and leadership.

Fundamental concepts

Science provides the tools to confront emergencies, from pandemics to energy blackouts. Future Scientists at Eton step into the role of inventors under pressure, where ideas must move quickly from theory to prototype. Students explore how scientific knowledge translates into practical solutions when time is limited and the stakes are high.

Future Scientists Frameworks

Projects are structured around rapid problem-solving. Students identify the nature of a crisis, propose a hypothesis, and create a working prototype or experiment that addresses it. The framework emphasises speed, clarity, and resilience: testing an idea, refining it, and showing how it can make a difference in the middle of a global emergency.

Foundational Vocabulary

Prototype, innovation, experiment, variable, model, hypothesis, resilience, sustainability, crisis, adaptation, breakthrough, demonstration, solution.

Time to Shine

Time to Shine gives every student the chance to practise public speaking in a structured setting. By researching, preparing and delivering a project to an audience, you build confidence in expressing ideas clearly and develop the ability to present with authority. It's an opportunity to refine communication skills that are valuable for academic study, professional life and beyond.

At the Mission 2035 showcase, Future Scientists present as if they are working inside a global crisis centre. Each team unveils a prototype or experiment designed to answer a real emergency — energy shortages, food insecurity, or disaster recovery. The spotlight is on showing how the model works, explaining the science clearly, and proving why it matters. The pressure is part of the challenge: solutions must be presented as if lives depend on them.

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Time to Shine Project: Week One

Design a prototype that responds to an energy or infrastructure failure. This could be a small-scale renewable power system, a rapid method of storing electricity, or an improvised water filtration unit. Students demonstrate how the prototype works and argue why it could hold up under emergency conditions.

Time to Shine Project: Week Two

Develop an experiment or model that addresses health or food security in a time of crisis. Options include a portable medical solution, a simple way of producing safe nutrition, or a system that makes limited resources stretch further. The task is to present the science as workable and immediate, not a distant concept.

Course Objectives

Future Scientists is an inspiring and hands-on science programme designed for inquisitive students aged 12-16. We are passionate about nurturing the next generation of scientists by making science both accessible and exciting. This course allows you to explore a variety of scientific disciplines, from biology and chemistry to physics and environmental science. Whether you're a budding biologist or a future physicist, Future Scientists will ignite your curiosity and help you discover the wonders of the scientific world.

Module 1

Life and Living Systems

Explore the complexity of biology, from the structure of cells to the interactions within ecosystems. You'll investigate processes such as respiration, growth and adaptation, while also looking at how human activity affects the natural world. Practical lab work will give you experience in observation, data collection and analysis.

Module 2

Matter, Reactions and Energy

Delve into the principles of chemistry and physics by examining what matter is made of and how it behaves. You'll test chemical reactions, study the properties of materials, and explore how energy is transferred and transformed. Each activity links abstract concepts to experiments you can see, measure and explain.

Module 3

Earth, Space and Scientific Frontiers

Look beyond the laboratory to the systems that shape our planet and universe. From geological forces to the movements of planets and stars, you'll explore how science helps us understand both Earth and space. The module also introduces some of the latest discoveries in science, giving you a glimpse of where research is heading.

Academic Difficulty

The projects are demanding but approachable. No specialist knowledge is required: students are guided step by step through identifying the problem, creating a model, and presenting it. The challenge lies in applying scientific thinking under the pressure of a fictional emergency, with limited time to prepare and the need to explain results to a live audience.

Case Study

Bridging Theory and Real World Application

The same principles students use in their prototypes are applied daily across industries. In energy, engineers adapt physics and chemistry to design renewable systems that can withstand sudden demand surges. In health, biologists and medical researchers use scientific theory to develop rapid diagnostics, vaccines, and portable treatments in emergencies. Agriculture draws on environmental science to create resilient food systems for areas hit by drought or flooding. Humanitarian organisations combine all these approaches to deliver technology that works in the field, often with limited resources and under pressure. By working on crisis prototypes, students see how theory becomes a practical lifeline in industries where timing and reliability matter most.

Fieldwork Research

Selected lessons take place outside the classroom. Students may run water tests outdoors, trial portable energy sources in the open, or map out how people move during group activities to think about logistics in disaster scenarios. Working in varied environments shows them how science operates under field conditions, not just in the lab.

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