The Challenge Curriculum at CAST

Challenge projects are developed and delivered in close collaboration with partners in industry, health care and academia in association with Cambridge Academy for Science and Technology (CAST). All project have a clear 'challenge' that students must overcome and some form of industry matched outcome at the end.

Teaching strategies may include seminars/masterclasses, practical activities, teaching activities, independent work and student presentations. Most projects will involve a range of activities. Whether the activities are led by partners or CAST staff will be decided in advance. Whoever is running the activity CAST staff retain responsibility for behaviour, safety and safe guarding.

The role of the teacher is to act as a mentor/critical friend helping students to develop their own ideas and understanding, help students to remain on task and to provide feedback.
Through Challenge Projects students develop a range of knowledge and skills including:

- a practical understanding of science
- practical science skills
- an underpinning of curriculum teaching
- transferable skills such as teamwork, leadership and literacy
- gain careers guidance

Where possible Challenge Projects comply with externally verified awards and certificates, such as the Duke of York Award, with students completing self, peer and teacher led evaluations. Students also keep track of the skills that they have learnt through competency checklists and project evaluation forms in their Portfolio of Achievement.

The year 9 programme focusses primarily on teaching students how science is done and developing their practical skills.

The key stage 4 (year 10 and 11) programme involves students working through a number of set projects covering a wide variety of different areas of science. The projects focus on developing students' project based learning, presentation, teamwork and practical skills.

In Key stage 5 (years 12 and 13) the students have a choice of projects from three project strands – biomedical; physical sciences and engineering; and computer science. This allows students to personalise their education to their own career aspirations. Students complete 2 projects in year 12 and a further 2 in year 13. In addition students complete the Extended Project Qualification at the end of year 12 and beginning of year 13.