EDGE
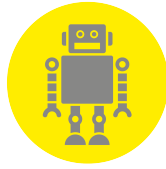
EXPLORE

DEVELOP

GROW

EVOLVE

LEARNING TO LEARN

BIG IDEAS

PROBLEM-SOLVING

What is EDGE?

EDGE stands for Explore, Develop, Grow, Evolve. EDGE is a combination of online and offline tasks which allow its participants to develop a skillset that will help you both now and in the future. At its conclusion, the course requires you to collaborate with others, whilst encouraging you to learn or develop new skills, new patterns of thinking, and new knowledge and understanding, and giving you an opportunity to put some of this into practise. Along the way you are taken through a number of modules and experiences which develop the necessary skills required to approach this project successfully.

The course develops skills which will be of immediate value to you in your day-to-day academic life, such as research and thinking skills, but the longer term benefits around business skills, critical thinking, entrepreneurship and self-awareness are hopefully also obvious.

Why EDGE & why now?

The purpose of the EDGE course is to ensure that you leave Caterham School with a well-rounded set of skills which will prepare you for the worlds of Higher Education and work, as well as enhance the way you learn whilst you are at school.

The course is built upon three foundational pillars: LEARNING TO LEARN, BIG IDEAS & PROBLEM-SOLVING IN ACTION. When combined, these areas give you a rounded understanding or yourself and the world, as well as a toolkit which alongside your academic study, will set you up for whatever you choose to do next.

LEARNING TO LEARN

The Learning to Learn program is well-established at Caterham School and is now being extended to allow pupils to have more time to explore and build upon these foundational skills which encourage resilience, independence and leadership.

Allowing pupils to become more self-aware and evaluating their processes and progress is a key to their own success and whilst we lay the core work for this in the First Year course, these skills are returned to repeatedly so as to cement them in our pupils' minds.
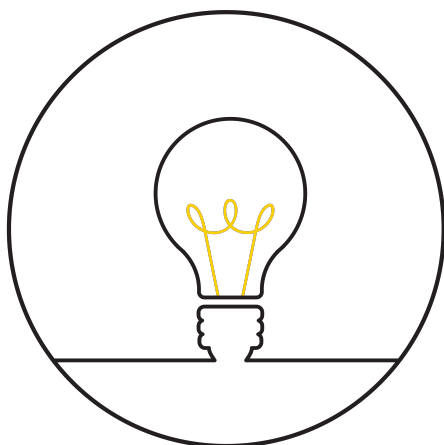
BIG IDEAS

The 'Big Ideas' program allows us to respond to immediate, pressing global concerns and give our pupils a platform to discuss complex ideas, as well as educating them in the contexts within which these things occur.

Pupils might discuss the environmental crisis, current conflicts, or political protests, or indeed a range of other more conceptual ideas which will impact upon the way they think about and engage with the world.
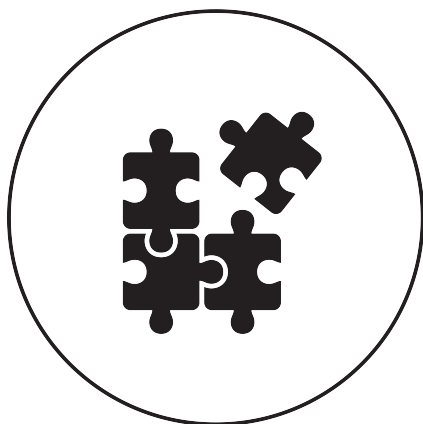
PROBLEM-SOLVING IN ACTION

Having great ideas is only a starting point. Giving pupils opportunity to test their ideas and put them into action is not only a crucial life-skill, it is a process which encourages the sorts of skills that will be invaluable to them in the future: to be able to reflect, adapt and iterate as a project develops is crucial.

To respond to and give constructive feedback builds communication skills and resilience. To deliver a project as an individual or as part of a group is a hugely rewarding and powerful experience. To do so with a project that has a real-life impact is an almost unique experience within school.

"

We stand on the brink of a
technological revolution that will
fundamentally alter the way we
live, work, and relate to one another.
In its scale, scope, and complexity,
the transformation will be unlike
anything humankind has
experienced before.

"

Klaus Schwab
Executive Chairman
World Economic Forum

READY FOR A NEW FUTURE

You, as a group of pupils, have a diverse range of interests, and it is the coming together of different ways of thinking that will make your experience of this course a positive one. Embracing differences, thinking differently, confronting and attempting to solve problems collaboratively, are all things that you will do in the future; establishing how best to do that now, will give you a significant advantage.

And the world is changing. Almost everyday something new is invented, trialled or rebased that could change the world. Whilst it is not possible to respond to each one of these new innovations, the EDGE course aims to help develop your mental agility and adaptability, so that you can thrive as the world shifts and turns.

WHAT ARE THESE FUTURE SKILLS?

There is a mis-match between the rapid technological developments of the Fourth Industrial Revolution and the skillset of the current and future workforce. There is a global shortage of employees with appropriately developed digital skills.

In the UK the British Chamber of Commerce released a study suggesting that 75% of businesses in the UK reported a digital skills deficit. The UK Commission for Employment & Skills believe that this comes at a cost of £63 billion a year to the UK economy. These findings are mirrored across Europe and the US. However, a recent report by McKinsey Global Institute highlights that whilst the demand for technological skills will see the biggest growth by 2030, other high level cognitive skills will also be significant; creativity, critical thinking and decision making, and complex information processing will be increasingly in demand.
The World Economic Forum has compiled a list of the skills it believes are most necessary for the workforce of 2020:

Top 10 Skills To Thrive In The Fourth Industrial Revolution

01 **COMPLEX PROBLEM SOLVING**

02 **CRITICAL THINKING**

03 **CREATIVITY**

04 **PEOPLE MANAGEMENT**

05 **COLLABORATION**

06 **EMOTIONAL INTELLIGENCE**

07 **DECISION MAKING**

08 **SERVICE ORIENTATION**

09 **NEGOTIATION**

10 **COGNITIVE FELXIBILITY**

This list suggests that a certain level of flexibility is required to be successful in the future. A hybrid brain, is one which does not favour either analytical or creative skills, but which can hold these two, often divergent ways of approaching a problem, at the same time and use the combination of these methods to better explore a problem. Developing a hybrid brain is a vital but complex process, and one which we endeavour to assist you with through opportunities such as this during your time at school.

Being able to explore a problem creatively, in collaboration with others, with empathy, care and reflection whilst still being able to analyse, be critical and demonstrate complex technical skill is the best possible demonstration of an education for life.

Recently the World Economic Forum developed their research further, identifying more specific skills which by 2022 will be declining in demand, as well as the skills which will be increasing in demand. Those increasing in demand are:
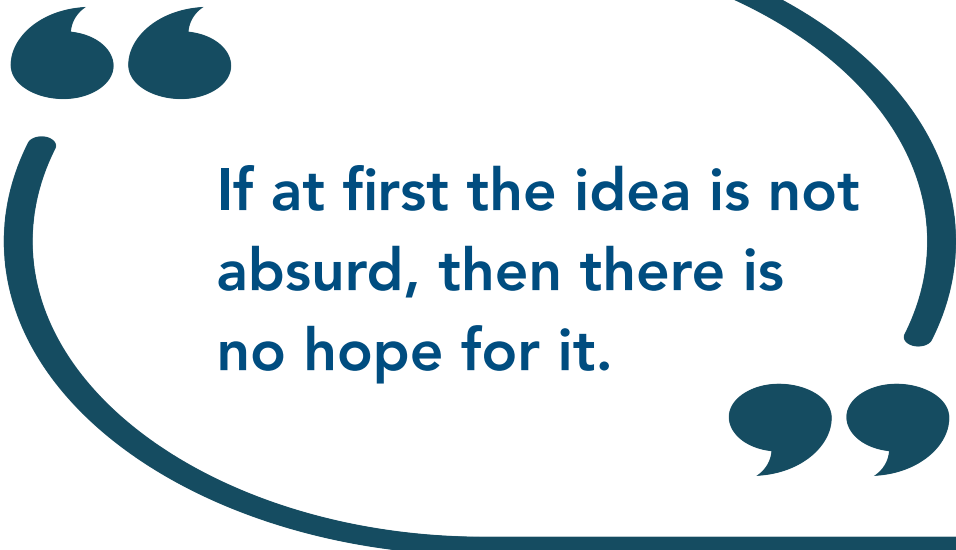
ANALYTICAL THINKING & INNOVATION **01**	ACTIVE LEARNING & LEARNING STRATEGIES **02**
CREATIVITY, ORIGINALITY & INITIATIVE **03**	TECHNOLOGY DESIGN & PROGRAMMING **04**
CRITICAL THINKING & ANALYSIS **05**	COMPLEX PROBLEM SOLVING **06**
LEADERSHIP & SOCIAL INFLUENCE **07**	EMOTIONAL INTELLIGENCE **08**
REASONING, PROBLEM SOLVING & IDEATION **09**	SYSTEMS ANALYSIS & EVALUATION **10**

2022 SKILLS OUTLOOK
WORLD ECONOMIC FORUM

A DIGITAL EDGE

Clearly it is still the case that the successful future worker requires a diverse skillset. This list makes it explicit that this combines a sophisticated DIGITAL LITERACY alongside the ability to think with dexterity and flexibility.

Across these two lists you will see that Complex Problem-Solving, Critical Thinking, Emotional Intelligence and Creativity remain an important focus. However, you can also see that in the '2022' list, which is more specific in its naming of skills, that technical, and analytical skills only grow in significance.

THE EDGE PROJECT

The OCA Innovation & Collaboration Award is an annual £1000 prize to the team who demonstrates the most engaging and interesting innovation project. Those taking the EDGE course are working towards presenting a solution for this competition. You will work in teams to develop an innovative product or idea, using the key learning and experiences you develop through the online and offline courses. Perhaps the most significant benefit of the award, is that as well as a prize, the OCA will provide mentoring for the winners, and any other ideas they view as having significant potential. This offers you an opportunity to develop a tangible outcome to a problem you have chosen to solve which could have a genuine impact upon your chosen audience.

> **If at first the idea is not absurd, then there is no hope for it.**

Albert Einstein

EDGE, UCAS & DEMONSTRABLE INTEREST

EDGE is not yet an accredited courses, however, it is something which can successfully be used to demonstrate your interest in a particular area, which may help a university application. To be able to show that you have actively extended yourself beyond a curriculum subject, and perhaps even be able to point them to a completed project, has a definite value. In an increasingly competitive world, being able to draw attention to a set of skills which are not only highly valued in their own right, but which have been used to further explore an area of interest, will help draw attention to your ambition and dedication as a future student or employee.

EDGE & WELLBEING

The wellbeing of the school community is of central importance to all that we do at Caterham School. EDGE feeds into the program we offer in a number of ways. Most obviously, the module on Emotional Intelligence, but also through our focus on reflection. The purpose of these sessions is to give you the opportunity to become more self-aware and reflective, as well as allow you time to consider your own resilience and how you can effectively work with others. Through exploring the subject of emotional literacy in the online part of the course, we want to encourage you to understand the importance of 'EQ' and empathy in school and in any future places of study or work which require you to have good self-awareness, but also the ability to effectively collaborate.

Beyond this, we believe that challenging yourself, opening yourself up to opportunities to work with others, to try new things and to do so in an area where you may fail before you succeed are important ways in which you can develop your own identity and resilience.

WHAT DO I NEED TO BRING TO THE COURSE?

To be successful in this course, and indeed the courses and work you undertake after school, you need to demonstrate **INITIATIVE**, **CREATIVITY**, a willingness to **COLLABORATE** and to learn **INDEPENDENTLY**.

Whilst you will not be given a certificate at the end of the course, we hope that you will understand the inherent value in the opportunity to learn new skills and develop existing interests, with the possibility of producing something which will be developed beyond your time at Caterham School

EDGE & THE SKILLS OF THE FUTURE

WEF 2020 Skill	EDGE Outcome
Complex Problem Solving	The process of designing any solution will involve significant complex problem-solving skills both at a technical and design level. Pupils also take a 'design thinking' module as part of the course which helps them identify a particular problem and its various facets, along with a toolkit of how to find solutions. The online course also offers a unit in Logic and Computational Thinking as well as Research Skills, all of which contribute to developing the skills necessary to approach and resolve complex problems.
Critical Thinking	Within the 'Research and Thinking Skills' module is a unit of Critical Thinking which covers the main processes involved and some practical applications. Pupils are also pointed in the direction of further resources online which can develop this particular skillset.
Creativity	One of the core values explored throughout the course is the importance of creativity in the problem-solving process. This is explored both in the 'Business and Communication' module as part of the entrepreneurism and innovation sections, but also as part of the 'Design Thinking' module which celebrates and encourages creativity in understanding and solving problems and is the topic for one of the live sessions.

People Management	Whilst pupils may not be managing teams of people whilst undertaking the course, there is an assumption that those who develop a successful product or prototype may wish to pursue their idea, at which point the pupils may begin the process of finding a network of people who can assist with this. This is further explored in a live session on Project Management, as well as when we discuss Emotional Intelligence and Interviewing.
Collaboration	Problem-solving, creativity and innovation are all areas where collaboration is essential. Pupils will work together on projects so that they can benefit from the widest range of skills and ideas to improve the final outcome of their problem-solving challenge.
Emotional Intelligence	There is a whole module within the online EDGE course around emotional intelligence. The sub-topics are 'emotional literacy' and 'coaching', two invaluable skills which feed into the wider purpose of the course: to ensure that the pupil taking it has a wide-ranging set of skills that allow them to work to the best of their abilities.
Decision Making	In any problem-solving challenge, decision-making is essential. Pupils will develop skills that help them understand the types of questions they need to ask to inform their decision-making, whilst also being instilled with the entrepreneurial spirit which appreciates the importance of failure and of problem-solving being an iterative process.
Service Orientation	Problem-solving requires a user. Pupils will learn about the importance of identifying their users carefully, researching and engaging with them and the importance of their input into the problem-solving process.

Negotiation	As with 'People Management' pupils may not be negotiating with people whilst undertaking the course, but there is an assumption that those who develop a successful product or prototype may wish to pursue their idea, at which point the pupils may begin the process of finding a network of people who can assist with this. Similarly, at the end of the project, pupils will have the opportunity to present their ideas to a panel of experts or judges using the 'Presentation Skills' unit to assist them in ensuring they target their audience effectively and negotiate their 'buy-in' with the idea.
Cognitive Flexibility	Undoubtedly, the course will teach pupils a range of thinking skills, strategies to problem-solve, skills around emotional intelligence and engaging people, as well as technical and complex process-driven skills. To balance this range of skills and apply them in a meaningful way to a problem-solving challenge is a clear example of cognitive flexibility.

WHAT DOES AN EDGE PROJECT LOOK LIKE?

The winners of the last two OCA Innovation & Collaboration Awards could not have been more different: one group created a plastic-free shampoo, the other an online platform that using an algorithm to analyse your writing and suggest the charities you would most like to support. Other entries have included potato-starch clingfilm, a bespoke graphic design service, an overlay for social media apps to alert a trusted adult of a problem and a set of honey-based cosmetics. These ideas all present a solution to a problem identified by the group, but they are all very different. Some utilised technology in a very central way, others did not, but they all shared a clear ability to demonstrably improve the end-users life in some way. That is what an EDGE project should do.

COURSE CONTENT

The EDGE course is both an online and real-world experience.

The real-world elements to the course will allow you to engage at a personal level with complex tasks, with inspiring people and with each other. You will have the opportunity to engage in corporate-style workshops, undertaking problem-solving in the way multi-million pound companies do, as well as explore your creative side, discover how to develop prototypes for testing, and come face to face with some of the most challenging ethical dilemmas that face today's citizens.

It is entirely possible to develop an innovation which does not put technology or digital skills at its core. What is less likely however, is that your digital literacy will not play an important factor in researching, and then developing your idea.

The online modules give thorough introductions and guidance on a wide variety of topics, all of which are considered to be valuable to the primary goal of developing sophisticated, flexible problem solvers. The offline learning experiences give real-life context to some of these modules, allowing pupils to engage at a practical level with the skills they may then demonstrate through their EDGE project.

Online Course

RESEARCH & THINKING SKILLS

- How to do Research
- Critical Thinking
- Logic
- Computational Thinking
- Philosophy & Ethics
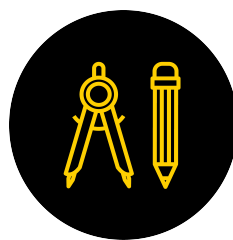
DESIGN THINKING

- Importance of Creativity
- Empathise
- Define
- Ideate
- Prototype
- Test

BUSINESS & COMMUNICATION

- Entrepreneurship
- Marketing
- Presentation Skills
- Visual Literacy
- Social Responsibility

EMOTIONAL INTELLIGENCE

- Emotional Literacy
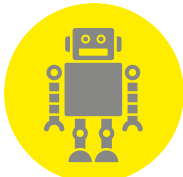- Coaching
- The GROW Model

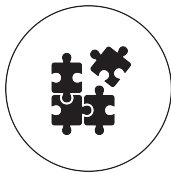# LIVE SEMINARS

PROBLEM-SOLVING IN ACTION

- Project Management
- Research
- The Dangers of GroupThink
- Emotional Intelligence

PROBLEM-SOLVING IN ACTION

- Activism
- 21st Century Ethics
- AI, Machine Learning
  & the Technology of the Future
- Today's Wars

PROBLEM-SOLVING IN ACTION

- Design Thinking
- Creativity Challenge
- Marketing: You, Yourself & I
- The EDGE Project Challenge

> "The world needs dreamers and the world needs doers. But above all, what the world needs most, are dreamers that do."

Sarah Ban Breathnach
Author & Philanthropist