



DESTINATION  
**STEM**



***Destination STEM:***  
***Teacher***  
***Handbook***

POWERED BY **STEM** LEARNING



# **1. Contents**

<b>2. STEM Learning and Destination STEM</b>	<b>3</b>
<b>3. Benefits of Destination STEM</b>	<b>4</b>
<b>4. How can Destination STEM support you and your students?</b>	<b>5</b>
Destination STEM website	<b>5</b>
Research Placements and Experiences	<b>6</b>
Mentoring	<b>7</b>
STEM Clubs	<b>9</b>
Careers Fairs	<b>10</b>
I Belong: Encouraging girls into computer science	<b>11</b>
Isaac Computer Science	<b>12</b>
STEM Ambassadors	<b>13</b>
<b>5. Gatsby Careers Benchmarks and Destination STEM</b>	<b>15</b>
<b>6. Get Inspired</b>	<b>20</b>

# 2. **STEM Learning and Destination STEM**



## STEM Learning

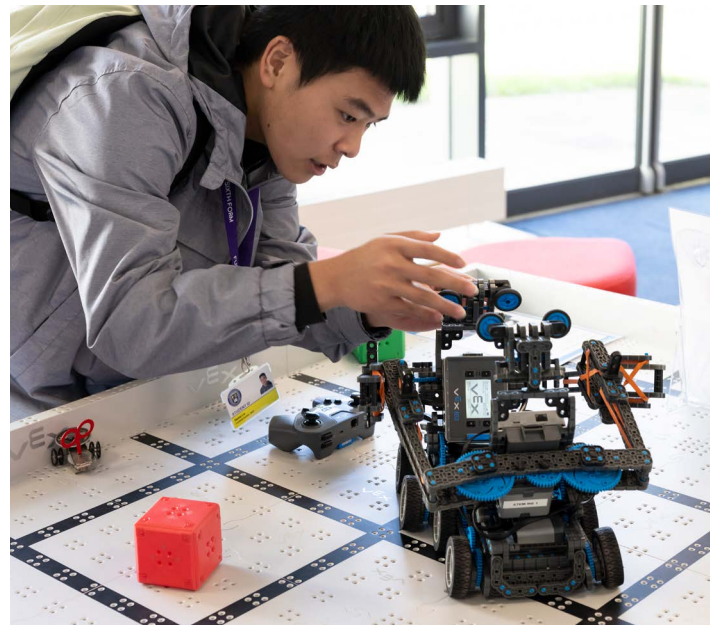
At STEM Learning, our commitment to STEM education is part of everything we do. Whether that's delivering teacher CPD (continuing professional development) in STEM subjects, bringing STEM role models into schools as part of the STEM Ambassador Programme or enriching education and supporting students' career aspirations with our Destination STEM campaign and the National Centre for Computing Education, our aim is always the same – to improve lives through STEM education.

## Destination STEM

Destination STEM supports students on their journey from education into the world of work. It does this by scaffolding their engagement with the STEM sector:

1. Support students to discover the amazing world of STEM and how they can shape the future with their skills and passions.
2. Support students to develop their skills so that they can unleash their potential and thrive in their future career.
3. Support students to access opportunities to experience life within the STEM sector.

Destination STEM gives students the opportunity to explore career options, gain valuable skills, develop an understanding of the work that STEM-related employers do, and build a plan for their future.



As a result, the programme helps to develop a diverse pool of highly skilled, motivated young people who are well-equipped to thrive in the workforce. The programme offers a wealth of activities, including engaging online workshops, research experiences and mentoring to empower students. The campaign makes a tangible impact on the lives of students, helping them to have brighter futures.

## Who is this handbook for?

This handbook has been written for teachers, careers leads and advisors in secondary schools and colleges.

## How to use this handbook

This handbook provides ideas and practical suggestions on how Destination STEM can be used to support career provision and the teaching of science, technology, engineering and mathematics (STEM) within your school. It identifies how each activity from the wider campaign can be used to support your students' development and aspirations. This handbook can be returned to over time as you develop your STEM programmes.

### **3. Benefits of Destination STEM**

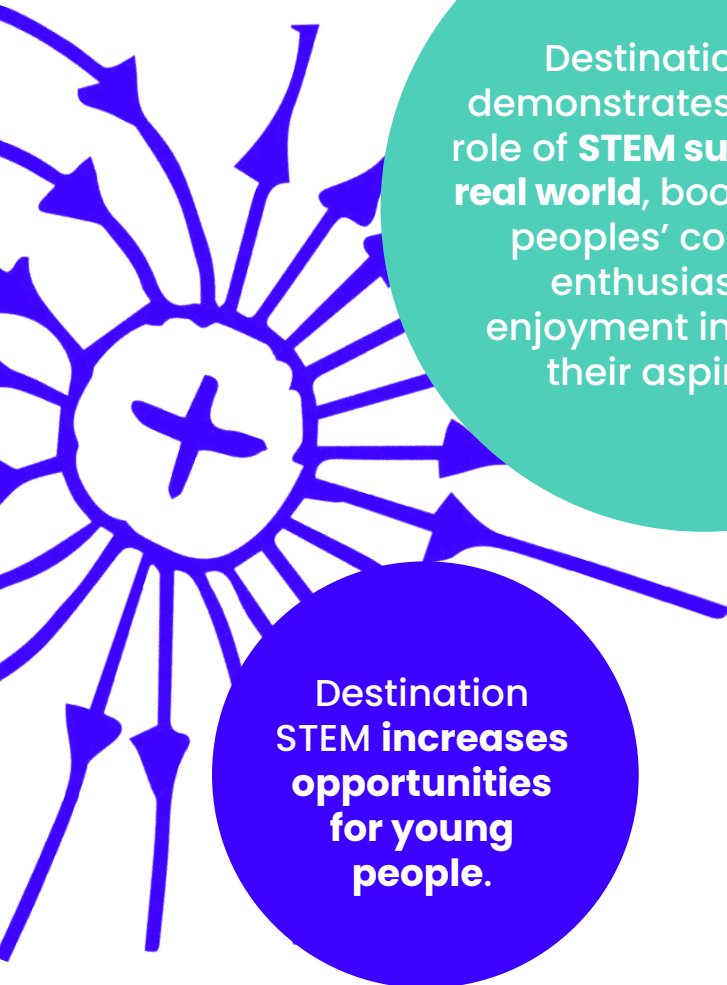
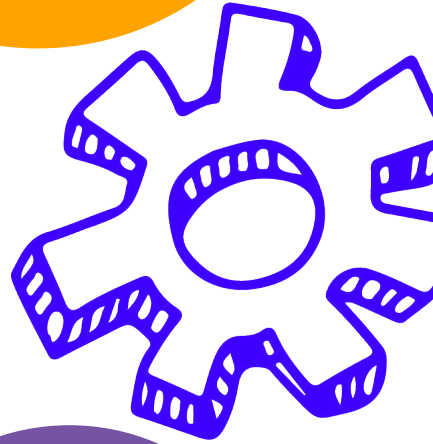


Destination STEM helps students to **build capabilities in STEM**, increasing GCSE and A level attainment by up to one grade.



Destination STEM enables students to **progress in STEM subjects** – increasing A level uptake and improving progression to HE.

Destination STEM demonstrates the critical role of **STEM subjects in the real world**, boosting young peoples' confidence, enthusiasm and enjoyment in STEM and their aspirations.



Destination STEM **increases opportunities for young people.**

Destination STEM improves the **STEM skills of young people.**





# 4. How can Destination STEM support you and your students?



## Destination STEM website

The Destination STEM website is designed to support students between the ages of 14 and 19, to develop their knowledge of STEM careers and opportunities to build their skills and develop their experience of the STEM sector.

### The site includes:

- career articles written by people working within the STEM sector
- career videos offering insight on a wide variety of careers
- careers resources to help your students plan their next steps
- links to skills activities which can help your students develop their key employability and technical skills

- opportunities for your students to take part in placements and mentoring
- information on skills and challenges that your students can take part in

### The Destination STEM website can be used to:

- enrich the curriculum, directly boosting extra-curricular activities
- excite and engage young people with real stories of up-to-date research and STEM career journeys
- encourage teaching, learning and debate among students (14 to 19 year olds), teachers and technicians

Visit the Destination STEM website:  
[Destination STEM](#)

# Research Placements and Experiences

Placements are engaging, real-life workplace experiences, where talented Year 12 (or equivalent) students from the most disadvantaged backgrounds are placed at the heart of a UK host organisation.

## Research Placements

Two-week collaborations with a STEM-related knowledge expert on a live research question or area of development.

While producing a scientific or technical report and poster, this opportunity ensures that students contribute meaningfully to the host organisation's current work.

## Experience Placements

Five day explorations with industry experts to identify essential skills needed for employment in STEM sectors.

While producing a workbook and reflective report, students gain insight into working in professional environments, as well as knowledge of the challenges for different sectors, in turn preparing them for employment.

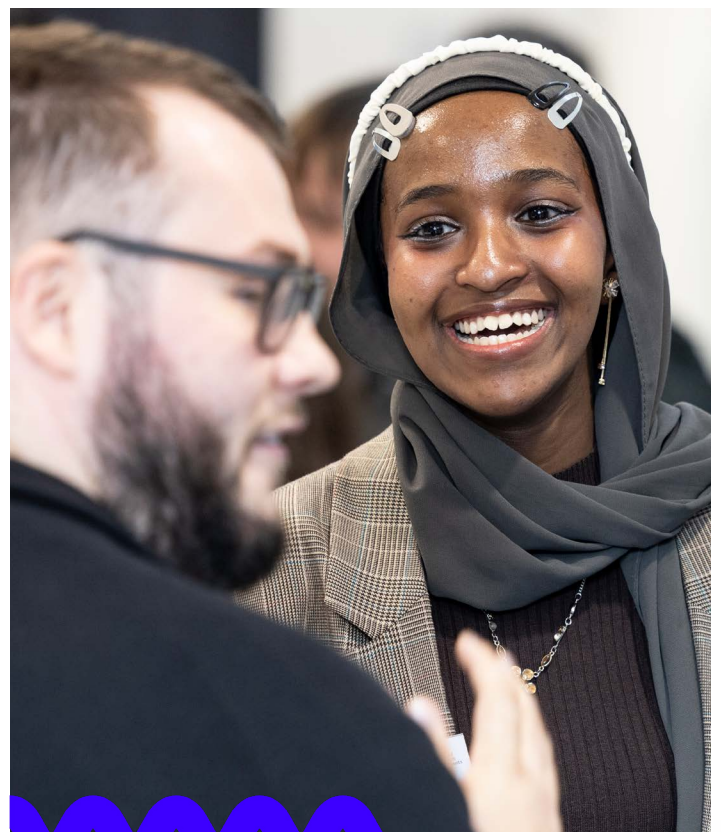
Encourage your students to spend part of their summer expanding their career prospects by undertaking a short project that will:

**Develop:** Develop subject understanding that has been shown to increase STEM A level attainment.

**Help:** Help students learn more about university, apprenticeships and different career pathways.

**Enhance:** Enhance CVs and personal statements to support future academic or employment applications.

**Lead:** Lead to applications for a Gold CREST Award or the Big Bang Competition to showcase new skills.





## Student eligibility criteria

The Research Placements and Experiences programme focuses on high-attaining, motivated Year 12 or S5 students from first-in-family backgrounds and/or financially disadvantaged families that are on a post-16 education pathway to develop their STEM skills.

## Impact

Students participating in research placements are more likely to:

- take a higher number of STEM A levels
- achieve better in STEM A levels (FSM students get one grade higher on average)
- enrol in STEM courses at HE level, including a higher proportion enrolling at Russell Group HEIs

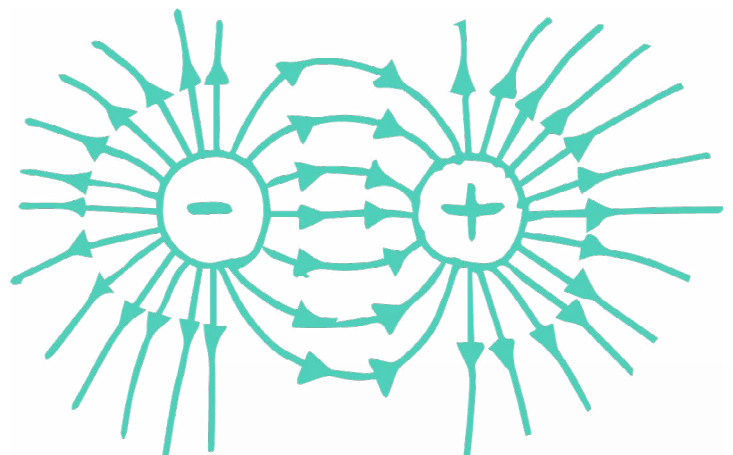
For more information visit:  
[Research Placements and Experiences](#)

## Mentoring

STEM Learning's national online mentoring programme aims to help 13 to 19 year olds explore their future career options in STEM.

Young people taking part will receive:

- one-to-one support and inspiration from a STEM Ambassador mentor
- training on how to use a secure and moderated online messaging system
- support and resources to help them make informed decisions about their future







## How does the mentoring take place safely?

We use a bespoke mentoring platform, Brightside Mentoring, that is purely text-based to ensure all young people are appropriately safeguarded. All messages submitted via this platform are automatically filtered, and if any 'stop' conditions are flagged (eg attachments, web links, special characters like '@' that potentially indicate an email address etc), the message is then manually reviewed and moderated by a person. If needed, the sender may be asked to amend their message before it is re-checked and sent on. The mentors are all STEM Ambassadors who have undergone a criminal record check (DBS or PVG) and are informed no email addresses or personal contact information can be exchanged, nor are mentees and mentors allowed to meet in person – all mentoring must occur via the Brightside platform. The young person does need to provide an email address to create an account on the platform, but this information is not shared with their mentor or anyone else.

## What does it involve?

Mentoring for Years 9/10/11 or S3/S4 focuses on providing career insights into sectors of interest for the young person. Years 12/13 or S5/S6 receive mentoring on life after school, whether that be higher education, apprenticeships or preparing for employment. STEM Ambassador mentors are ready to answer questions on topics such as the range of STEM career or education options available to young people, the pathways into different sectors and the essential professional skills required for success. Students also have access to a suite of fun and fascinating 'Bright Knowledge' resources on matters such as health and well-being, independent living, money and housing to help prepare them for the future.



"My mentor helped me explore different options within careers and who to talk to if I need help."

For more information visit:  
[STEM Learning Student Mentoring](#)



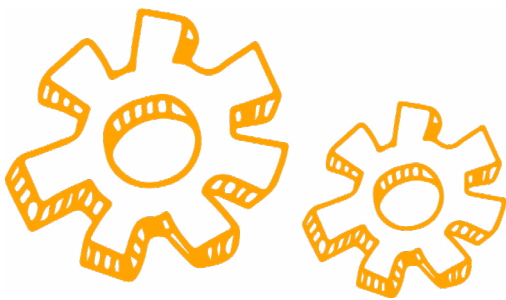


# STEM Clubs

A STEM Club is any regular attendance of young people exploring STEM subjects through extra-curricular provision. The club can focus on any or all STEM subjects and can include other subjects such as art, drama and geography etc. A STEM Club supports the curriculum by providing opportunities for young people to have fun, be creative and expand subject knowledge and awareness of the role these subjects have in the world around them.

STEM Clubs are an opportunity to provide STEM enrichment and enhancement to young people in exciting and challenging ways. An active and thriving club utilises a wide variety of methods, aptitudes and skills to provide the best possible outcomes for its club members and for the club leaders.

Engaging in a broad range of STEM subject activities that promote learning, enhance skill sets and confidence in young people supporting improved attainment, increase STEM learning and have the knowledge and skills to pursue a potential STEM-related career.



## We offer support for schools and STEM Club leaders including:

- further information and support for setting up and running a successful club
- free downloadable activity resources
- CPD and webinars to support STEM Club leaders
- information about how STEM Ambassadors and STEM Club Champions can support your STEM Club

For more information visit:  
[STEM Clubs](#)

“More than anything I cannot overemphasise the importance in STEM Club for building relationships with our students. We make massive gains in the classroom especially with less confident members of the student body who build up trust with us as well as their confidence in their own abilities.”

**Secondary school teacher**





## Careers Fairs

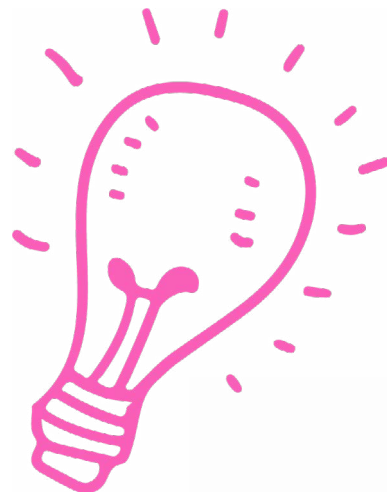
Virtual careers fairs inspire and inform; supporting young people to be better prepared for future careers. Each 360 degrees online fair, delivered in partnership with AECOM, contains a selection of industry sectors with companies hosting virtual exhibition stands. Teachers and young people can explore presentations, information, discussion topics and career routes, helping to raise awareness of the many STEM-led career opportunities available.

As a teacher, you can use these virtual careers fairs to enhance your curriculum, enrich your careers education and engage your students in meaningful learning experiences. Here are some suggestions on how you can embed STEM Learning's virtual careers fairs in your teaching:

Virtual careers can support your lessons. You can either assign it as a homework task or use it as a live activity in the classroom. You can also choose to focus on a specific sector, employer or topic, or let your students explore the fair at their own pace and interest.

You can use the resources and information from the exhibitors' stands to spark students' curiosity, raise their awareness and activate their prior knowledge. You can also set some learning objectives, questions or tasks for your students to guide their exploration and reflection.

**For more information visit:  
[STEM Learning Careers Fairs](#)**



# I Belong: Encouraging girls into computer science

Computer science is the fastest-growing STEM subject, and yet, despite its popularity, girls are consistently outnumbered by boys, making up just one in five entries at GCSE. The I Belong programme is a new, evidence-informed programme run by the National Centre for Computing Education that aims to change that.

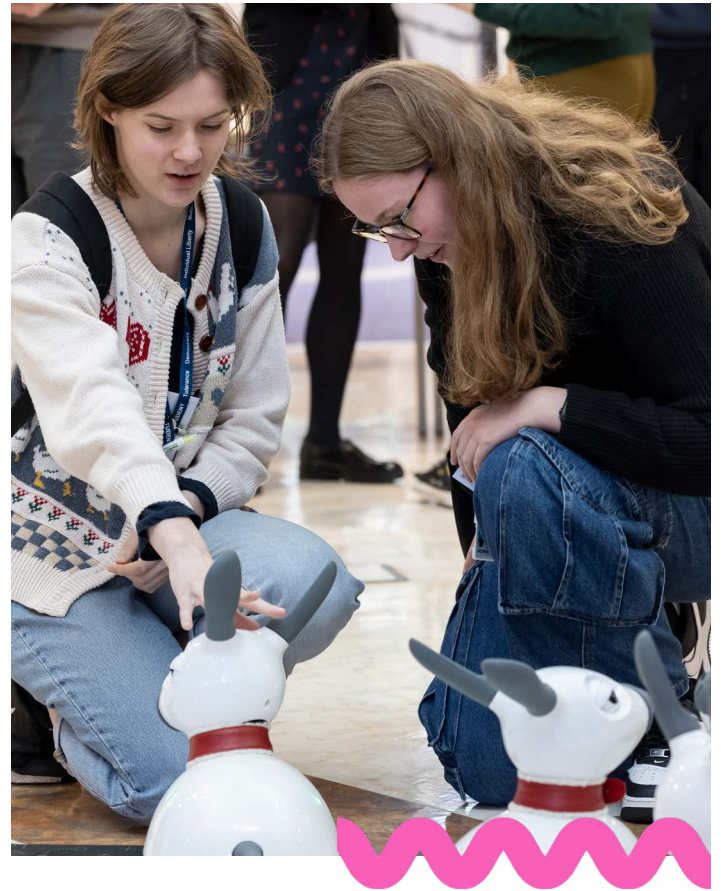
Our evidence-informed programme aims to help teachers and leaders understand the barriers to girls' participation in computer science and make a plan to overcome them. We offer curated resources, training and implementation support to empower you with the tools to support more girls into computer science qualifications and careers.

## Who is it for?

- Educators aspiring to narrow the gender gap in computing education.
- Our resources are currently focused on key stage 3 but teachers of other key stages are welcome to access and use the materials.

## What are the benefits?

- Develop an understanding of the factors affecting girls' participation in computer science.
- Work with colleagues to produce an action plan with strategies to make computer science in your school more inclusive.



## Where to start?

Educators aspiring to narrow the gender gap in computing education.

- 1 Enrol on the programme
- 2 Obtain your free handbook and posters
- 3 Explore the programme

For more information visit:  
[I Belong](#)







## Isaac Computer Science

Isaac Computer Science is a free online platform for students and teachers.

### Benefits for teachers

Isaac Computer Science allows you to:

- select and set self-marking homework questions
- save time on marking
- pinpoint weak areas to work on with your students
- manage students' progress in your personal mark book

Isaac Computer Science aims to provide:

- complete coverage of the leading exam specifications
- high-quality materials written by experienced teachers

### Benefits for students

Isaac Computer Science allows students to:

- study and revise at their own pace
- track their progress as they answer questions
- work towards achieving better exam results
- access high-quality materials written by experienced teachers
- learn relevant content tailored to your exam board

Everything on Isaac Computer Science is free, funded by the Department for Education.

For more information visit:  
[Isaac Computer Science](#)

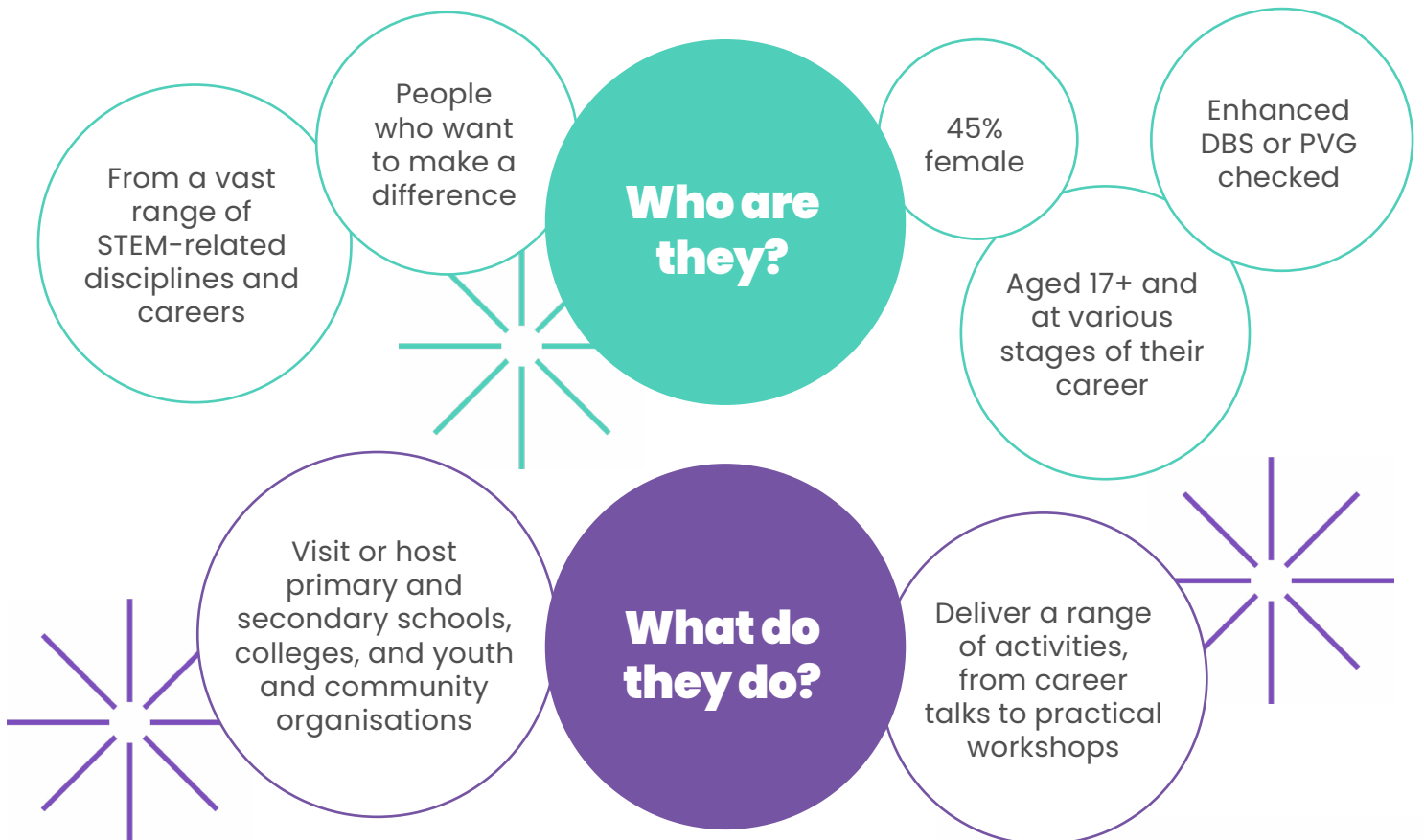


# STEM Ambassadors

STEM Ambassadors help bring STEM subjects alive and provide real-life examples of industry careers, facilitating an invaluable link between schools and industry. They are already proving to be an incredible resource for secondary schools and colleges across the UK, and can be requested to support every element of your STEM curriculum.

## Meet the STEM Ambassadors

STEM Ambassadors are positive role models who give their time and enthusiasm for free to bring STEM subjects to life and demonstrate their value.



## What can they do?

There's no limit to the ways in which STEM Ambassadors can inspire the next generation! They:

- show how STEM subjects apply in the real world
- illustrate what a career in STEM really looks like and share their own stories
- challenge young people to solve real-life problems
- bring specialist equipment for young people to experience
- make STEM relatable by bringing experience of the everyday into lessons



## STEM activities

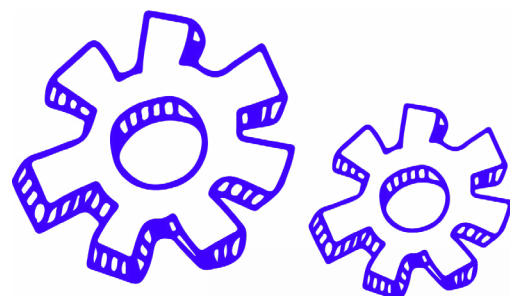
- Support with or deliver workshops, enrichment days, exhibitions, STEM fairs or STEM Clubs
- Judge school STEM competitions
- Bring specialist equipment for young people to experience
- Host a school trip

## Careers support

- Give careers talks or help at careers fairs
- Host a workplace visit or work experience
- Speed networking with students, parents and teachers
- Help students with mentoring, mock job interviews and CV writing

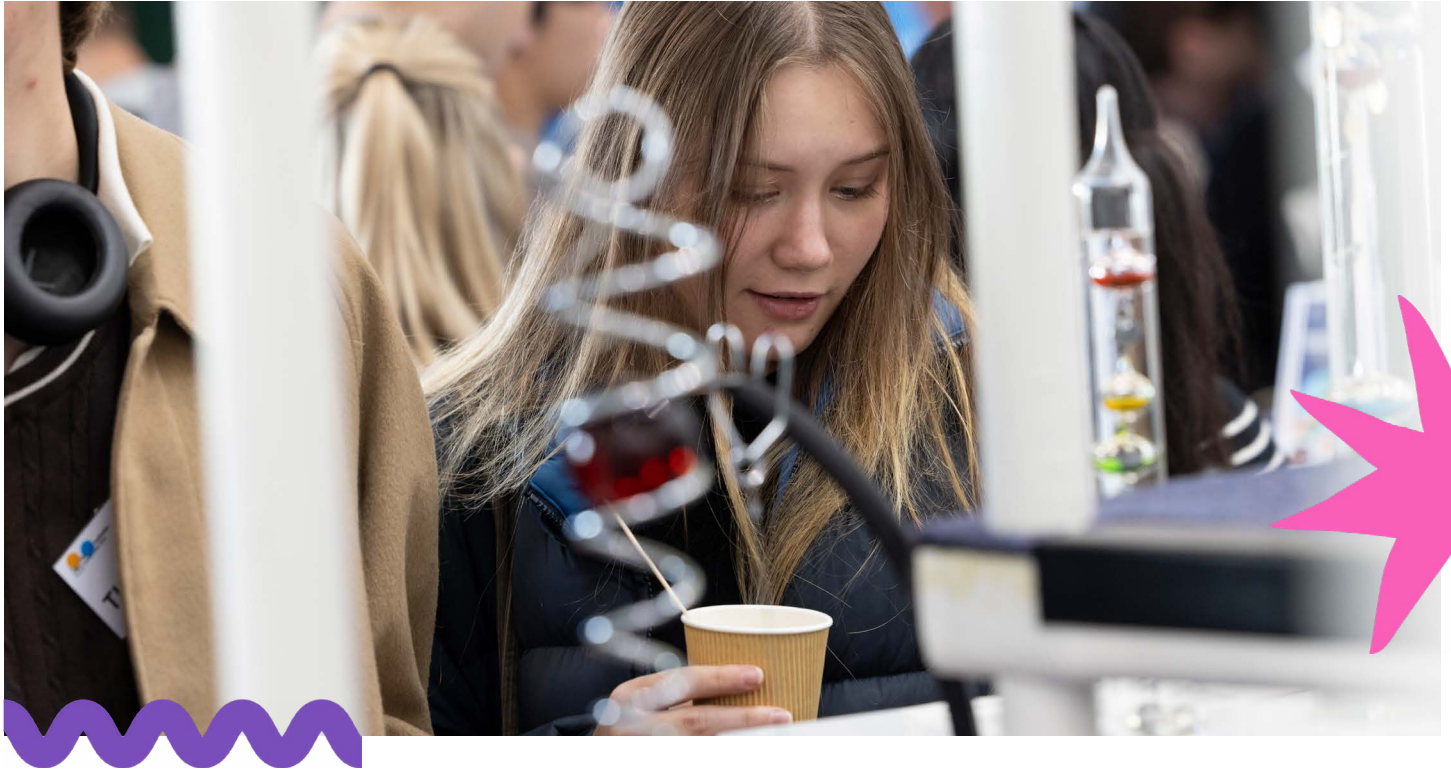
## Wider school and college support

- Develop and run CPD for educators or talk to a teacher to help with any questions
- Provide support and advice for governors, head teachers and senior leaders
- Develop curriculum, resources and activities
- Develop connections with local businesses





# 5. Gatsby Careers Benchmarks and Destination STEM



## Gatsby Careers Benchmark

# 1

**A stable careers  
programme**

### The Benchmark:

Every school should have an embedded programme of careers education and guidance that is known and understood by students, parents, teachers, governors and employers.

### How can Destination STEM support you?

- Support Careers Leader to develop school careers plan, suggesting activity engagements.
- Online CPD to enable teachers to embed careers awareness and employability skills in STEM Club sessions.
- Destination STEM website can be embedded within school careers plans as a source of high-quality careers information.



**Gatsby  
Careers  
Benchmark**

**2**

**Learning from careers  
and labour market  
information (LMI)**

**The Benchmark:**

All students and parents should have access to high-quality information about future study options and labour market opportunities. They will need the support of an informed adviser to make the best use of available information.

**How can Destination STEM support you?**

- Provide information on their company: recruitment process, what they look for in an employee, routes into employment; qualifications needed, jobs and roles available.
- STEM Club leader liaises with local employers to share LMI for students and parents.

**Gatsby  
Careers  
Benchmark**

**3**

**Addressing the  
needs of each  
student/learner**

**The Benchmark:**

Students have different career guidance needs at different stages. Opportunities for advice and support should be tailored to each of these key stages, with equality and diversity embedded in the school's careers programme.

**How can Destination STEM support you?**

- Support a group of students over a longer period of time, helping with CVs, interview techniques etc.
- STEM Club leader can use club resources to develop individual student skill sets and identifies career role models within activity-linked STEM industries to raise aspiration that STEM careers can be for them.
- Raise aspirations for disadvantaged students and showcase diversity and equality in the workplace.
- Mentors help develop individual student knowledge and skill sets, helping to grow careers aspiration.



**Gatsby  
Careers  
Benchmark**

**4**

**Linking curriculum  
learning to careers**

**The Benchmark:**

All teachers should link curriculum learning to careers.

**How can Destination STEM support you?**

- Work on a project with students, relating STEM skills and employability skills to employment needs – this can be reinforced using STEM Ambassadors.
- Young people spend 30 minutes once a month exploring how topics and themes studied in a STEM Club relate to specific industries, how employers use STEM subjects in the company, and the routes and pathways into careers.
- Develop real-world context through a practical research project based in higher education or industry.
- Students can relate curriculum knowledge and skills they develop to employer needs.

**Gatsby  
Careers  
Benchmark**

**5**

**Encounters with  
employers and  
employees**

**The Benchmark:**

Every student should have multiple opportunities to learn from employers about work, employment and the skills that are valued in the workplace.

**How can Destination STEM support you?**

- Support a school careers fair.
- STEM Club leader invites a STEM Ambassador to support a club session to provide technical expertise and relate the learning to their own role and work.
- Students engage with employers and employees in a real-world STEM project on a six-week placement.
- Mentoring is provided by employees keen to support students' careers awareness.





## Gatsby Careers Benchmark

# 6

### Experiences of workplaces

### The Benchmark:

Every student should have first-hand experiences of the workplace through work visits, work shadowing and/or work experience to help their exploration of career opportunities and expand their networks.

### How can Destination STEM support you?

- Arrange for a visit to place of work and opportunities to job shadow for a day.
- Project placements engage students with real projects and experiences of the workplace, developing essential skills and awareness of employer needs.



**Gatsby  
Careers  
Benchmark**

**7**

**Encounters with  
further and higher  
education**

**The Benchmark:**

All students should understand the full range of learning opportunities that are available to them. This includes academic and vocational routes, and learning in schools, colleges, universities and in the workplace.

**How can Destination STEM support you?**

- Provide information on career pathways and information on university, apprenticeships, BTECs, etc, entry requirements for specific courses and potential careers.
- Engage with higher education in a university-supported project placement.
- University-based mentors can provide information on routes and qualifications needed for further study and provide advice on UCAS applications.

**Gatsby  
Careers  
Benchmark**

**8**

**Personal  
guidance**

**The Benchmark:**

Every student should have opportunities for guidance interviews with a careers adviser, who could be internal (a member of school staff) or external, provided they are trained to an appropriate level. These should be available whenever significant study or career choices are being made. They should be expected for all students but should be timed to meet their individual needs.

**How can Destination STEM support you?**

- Provide one-to-one mentoring and work with the careers adviser to provide the right information to the student.



## CanSat case study: Daisy Richardson

### From school project to space industry career: CanSat propels Daisy forward

#### It all began with CanSat

Daisy was at sixth form at Allestree Woodlands School in Derby when she first heard about the CanSat competition.

*"CanSat took about a year in total. There were six of us in a team supported by a teacher. We met at lunchtime and after school. The UK competition was in York and I think it was three days. It felt non-stop but it was really fun. We then won that UK stage and went on to the European final in the Azores."*

*"I did the parachute design. I made and designed the parachute for the can. There was a main parachute and we had a drone one, which was much smaller. Constructing a normal-sized parachute would probably be quite difficult in itself. Constructing a parachute that's got to fit into a tin can is very difficult, because it's a tenth of the size. But we did it!"*



*"When I was taking part in CanSat it definitely helped my motivation in lessons at school. It gave me a why to what I was learning, as some of it I needed to be able to use immediately for CanSat. I could see how the information was going to be applied to real life."*

Daisy recognises the impact that taking part in CanSat had on her university and career choice.

*"The best thing to come out of it is definitely my job. My career prospects changed completely. I'm so glad they did, because I actually don't think I would have liked the super academic environment that I was looking at going into. I also think one of the good things is the skills that came out of CanSat and the knowledge of what a mission is actually like; I don't think you really get that in any other work experience. When you're working in the space industry, and you don't have any engineering experience, I think having that mission and planning experience is really useful."*

*"The confidence it gave me was massive. I remember not knowing how I could contribute and then I ended up being the sole person working on the parachute. It makes you realise you CAN do it!"*

*"It's made me more confident in saying yes to opportunities. Now I say yes to things that I wouldn't have done before and it has opened doors for me."*



## A career in the space industry

Since competing in the CanSat competition, Daisy has completed a degree in physics and joined B2Space through their internship programme.

*"Now I work for B2Space. Our mission is to send high altitude balloons to allow us to launch rockets from a high altitude. It reduces the cost of small companies and businesses launching payloads to space as it's much cheaper. Universities use it for research too. I did an internship with them and ended up loving it so much that I stayed!"*



For Daisy, CanSat hasn't just given her the motivation to find a job in the UK space industry: it also increased her knowledge and gave her a network of contacts to encourage her in her career.

*"CanSat just made me want to do it even more. I became so focused on getting a job in the space industry. I use the skills learned during the project every day, even some of the knowledge! My career prospects changed completely from taking part. I gained real connections within the UK Space Agency which really helped when it came to applying to university and getting a job afterwards."*

## Encouraging girls in STEM

Daisy has fond memories of the CanSat experience and continues to advocate for more girls to take part in teams across the UK, as well as encouraging girls to consider a STEM and space career.

*"I go back into schools to encourage younger girls to consider this career too. I'm not a very stereotypical person who might do a physics degree and work as a rocket scientist. But I'm really passionate and dedicated to my chosen career. I want more girls to know they can do it too and see that this is what a girl in STEM looks like! CanSat was part of that journey for me and I'm so glad school were taking part."*

*"It is a great feeling knowing that I'm actually encouraging other girls into it now and breaking the stereotype."*

## Widening participation

Daisy also recognises the benefits to her school:

*"It has been really good for my school too. Now they have a Rocketry Club and they do a summer school for new Year 7s which includes mini space projects."*

*"They have made incredible connections with Rolls-Royce as well, who are based just down the road. That has been great for supporting students with work experience."*



## Nuffield Research Placements case study: Ellie Kovachka – NRP student

### What is your current role?

*I am taking a gap year to continue with my Nuffield Research project in more depth.*

### What was your project about? Did you gain any new skills, both scientific and general work skills, from undertaking your placement?

*Cool brown dwarfs within binary systems. I learnt many new calculations, as well as facts about brown dwarfs and how they function. The placement introduced me to many new programs, which were used to determine the nature of the object and its speed.*

### What was the highlight/best bit of your placement?

*The best bit of my placement was learning how to use the programs Gaia and DS9 to determine the speed of the brown dwarfs. Those were incredibly interesting, and they diverted from the A level Physics syllabus.*

### What path did you take after finishing your placement and how has that led you to where you are today?

*After finishing my placement, I continued studying for my A level exams, which were at the end of the year. Due to this, I have been given the opportunity to continue developing this research further.*

### What are your future plans? Did your Nuffield Placement have an effect on the choices that you made after finishing school/college/university?

*As an aspiring researcher, I hope to pursue electrical engineering at Imperial College London in the next academic year. My placement helped me determine I would like to work as a researcher, and hence persuaded me to take a gap year to continue with it.*

### Did you stay in touch with your supervisor?

*I have stayed in touch with my supervisor and am currently conducting research with him as part of my gap year.*

### If you could give one piece of advice to Nuffield students who are thinking of applying or are about to start a placement, what would it be?

*The most important part of the application process is to show your true determination for the subject you are choosing and what helped you decide to choose this field, as well as why you are motivated to work within it.*

### What would your advice be to young people thinking about a career in STEM?

*STEM can be hard, and it will take a lot of hard work and determination, but once you have realised it is something you want to dedicate yourself to, do not quit and continue on.*

### Do you have any other comments?

*Thank you once again for the opportunity to do a Nuffield Placement. It has opened many doors and has determined me to pursue a career in STEM and research.*

## Nuffield Research Placements case study: Giulia – NRP student

### Why did you choose to work with Nuffield Research Placements?

*I was first introduced to the Nuffield Research Placement Programme at University of Bristol during a mathematics enrichment day. After doing my research, I noticed that it had a great reputation and it seemed like it provided students with an invaluable opportunity.*

*I chose to work with Nuffield Research Placements because I found it incredibly cool to have the opportunity to partake in a serious/real research project alongside a company/organisation or a university. As I aspire to work in research, I found this an invaluable opportunity to experience and form a realistic idea on what doing research in a professional setting would be like.*

### What were your tasks at Balfour Beatty?

*As I conducted a study on the uses of a relatively new technology (Artificial Intelligence), my main role was to collect information. I was given a lot of freedom to conduct my project as preferred, hence, during my placement, my supervisor helped me organise a series of in-person and online semi-structured interviews (to collect both qualitative and quantitative data). As my in-person placement was quite short and compact (it was four days long), my timetable was relatively saturated with 30-minute interviews. During empty time slots, I started analysing and elaborating the data that I collected during the interviews. Additionally, I also produced a survey that helped me collect much more information about the topic of my research.*



### What was your overall feedback on the placement?

*I honestly loved my placement. As I want to study chemistry at university, I was initially sceptical about partaking in a placement targeted towards civil engineering. However, during my experience, I was given the chance to develop an interest in this different scientific branch. One thing that really made me spark this interest was my visit to Balfour Beatty's construction site in Portbury, where I was able to explore some of the things the Hinkley Marine Works Team worked on and told me about.*

*I soon found myself looking forward to attending every day and was quite sad at the end of the placement. Not only was I met with friendly and lovely people who helped me and supported me a lot in my project, but I was also met with a stimulating environment that provided me with loads of interesting topics to learn about.*



## How did this placement benefit/help/inspire your future aspirations etc?

Participating in this project reminded me how interesting all branches of science are and made me remember to always be curious and open-minded about things that I do not know. It taught me how important it is to take any opportunity that life offers and that, despite it being a positive or negative experience, it is always going to teach something valuable.

It has also confirmed my ambition of aiming to become a scientific researcher in the future.

Additionally, as my placement was set in a company, I received invaluable advice on important employability skills. It also made me improve skills like time-management and flexibility.

All that I learned during this experience has definitely helped me become more confident in myself and my skills. It reminded me how important it is to push yourself out of the comfort zone and has given me a big boost in becoming more determined to get where/what I want.

## School STEM Club: Holly Butcher – Severn Vale science teacher and STEM Club lead

### “A once-in-a-lifetime opportunity.”

I started our STEM Club to get students interested in science without the restrictions of having to stick to the curriculum. The club allows us to do whatever we want, and we make sure that all the different STEM topics are covered.

We do longer projects in the club like the Flying Start Challenge – an aerospace engineering project where the students had to design and build a glider. We had visitors from a local employer (Safran) that designs and builds rockets and aerospace equipment, and they ran sessions on the science of aeroplanes for us and helped our students with their projects. It was so good!

Last year we ran a sustainable transport challenge where the students had to design a vehicle and a journey that had to be done sustainably. They had to figure out how their vehicle would be powered, and how they would eat, sleep, use the toilet – all within the vehicle – without causing any harm to the planet.

#### Key facts

- The STEM Club gives students the chance to expand and explore their interest in STEM without being restricted to the curriculum
- It runs every week for an hour on Tuesdays after school
- It is open to students in Years 7 and 8 and will open up to Year 9 next year



*I just want the students to enjoy being in the STEM Club. Everything we do is about enjoyment and exposure to things that they wouldn't otherwise see in lessons. The same students come every week. They tell me that it's somewhere they can go and feel comfortable and do something really well. The students have found their niche - something they enjoy - and it's enabled them to open up a bit more. I have seen their confidence grow hugely.*

*I think our STEM Club improves how science is perceived within our school. It's a subject we take seriously, and we don't just teach it to get the students through their exams.*

*We love what we do, that's why we spend extra time running the club. We share our enthusiasm with the students and that's how they feel too!*

*"I have been helping to run our STEM Club for the volunteering section of my Silver Duke of Edinburgh Award. I help the younger students in Years 7 and 8 with the projects that we do, and I talk with them about science, the Duke of Edinburgh Awards and about Triple Science as a GCSE option. It is also the sort of club I would have liked to have had when I was in Year 7 or 8 but it couldn't run due to Covid-19.*

*"Helping to run the club has helped me to develop teamwork skills and I am better at engaging other people with science now. It is very rewarding, and I would recommend that other people take on a similar responsibility in their school because it's very fun!"*

**Year 10 student – Severn Vale STEM Club student leader**



## School STEM Club: Rose Russell – STEM co-ordinator, Art/ Design & Technology technician and STEM Club lead

### Welcoming to all and inspiring achievement in STEM

*Our STEM Club welcomes any students who would like to work on a STEM-based project. We make sure that it is a space that supports their STEM endeavours, whatever they may be!*

*The club is jointly run by me and my Head of D&T, and we have extra help from the older students as well. We're currently encouraging our Year 10 and 11s to come and mentor the younger students.*

*We enter a lot of competitions, and we've had a lot of success. We encourage the girls to find competitions that they would like to try, and we will support them with their entries. We also use the STEM Club to prepare our students for the workplace, working with a variety of local employers, to inspire them and raise their aspirations and to shatter stereotypes. We want to show the girls how much a career in engineering can offer them. I'm very proud that 70% of my first cohort have gone on to pursue a career in STEM.*

*We encourage a lot of teamworking and skills development through the activities our students do in STEM Club. They gain independence, build resilience, develop their confidence and self-esteem, and improve the way that they can communicate and present their ideas.*

*We believe that our young people are better for having a STEM Club. Seeing their development and the impact that it's had on*

*them – beyond just their career choices – but how they have grown as young people is so powerful. The club is a friendly, supportive space. I often say that it is "somewhere they can come and become!"*



#### Key facts

- *Our STEM Club is open to anyone who would like to have a go with STEM*
- *The club runs twice a week, and is led by our STEM co-ordinator, supported by the Head of Design & Technology and students in Years 10 to 12*
- *Our STEM Club has won a number of awards and competitions, including STEM Learning's Outstanding STEM Club of the Year 2022!*





*“Having such a successful STEM Club has highlighted the importance of STEM with the school. We’ve seen that engagement and enthusiasm has improved – and it has helped increase student uptake in STEM-related subjects.*

*“It has also resulted in positive experiences for our teachers, such as exploring other subject areas and making links to the wider curriculum, collaborating and engaging with industry and employers, and benefiting from experimenting with new materials from various companies. Thanks to the STEM Club, the school won The Mayor of London: Design Future London Competition and was awarded Outstanding STEM Club of England for 2022.”*

Linh Nguyen – Deputy Head Teacher





[www.destinationstem.org.uk](http://www.destinationstem.org.uk)