

# IMPACT REPORT

## 2021/2022



**Connecting young people with industry and inspiring STEM futures**



# WELCOME



**EDT and Industrial Cadets had a busy academic year in 2021/22. We delivered more Industrial Cadets accredited programmes for young people than ever before and are well on our way to reaching our target of 250,000 Industrial Cadets.**

During the last academic year, we have continued to adapt to an evolving funding and educational environment to benefit a diverse range of students, enabling social mobility and striving to create opportunities for all.

We are pleased to share that, during the 2021/22 academic year, we have seen an increase in the number of students from ethnic minority groups. We have also seen an increase in female participants taking part in our programmes. Diversity and inclusion are key to our mission and we are proud to do our part in closing the gender gap and addressing the under-representation of ethnic minority groups in the STEM sector.

Looking forward, it is important for us to continue to focus on the issues that have been created by the pandemic and the Cost of Living Crisis. We understand the challenges this can bring to families and students who want the best chance in life to succeed through STEM. For 2022/23 academic year, we are delighted to say that we are able to support students and families hardest hit financially with an exceptional grant which will enable assistance for all those who need it most to participate in our Industrial Cadets programmes.

## OUR COMMITMENT

**EDT's vision is a society where all young people can develop the STEM skills, knowledge and experience they need to take control of their futures and change the world around them. To achieve this vision, we are committed to:**

- Supporting young people, their families and teachers to understand the pathways to STEM careers, including Apprenticeship and Graduate opportunities;
- Working with industry and education partners to help young people across the UK to build their skills, find out more about careers within STEM and gain access to inspiring role models;
- Helping young people, their families and teachers to gain knowledge and understanding of the pathways into STEM.

I would like to thank our students, teachers, volunteers and funders, who continue to work closely with us to achieve our vision of a society where all young people have the tools they need to create their best future.

Julie Feest, Chief Executive of the EDT

# LONG-TERM OBJECTIVES

Identifying the long-term objectives and needs in STEM and how we as a charity are working to tackle these issues.

## THE STEM SKILLS SHORTAGE

The STEM skills shortage in the UK has been the focus of political, policy and industry debate for decades. There is an estimated shortfall of over 173,000 workers in the STEM sector, equating to an average of 10 unfilled roles per business in the UK (IET, 2021). It is estimated to cost employers an astonishing £1.5 billion each year in additional training costs, recruitment, temporary staffing and salary inflation.

At the same time, young people tell us that they struggle to access STEM careers information, and lack confidence when it comes to making choices about pathways into jobs and further study. We know that young people enjoy STEM but without the right support, cannot access the future opportunities it can yield.

EDT are committed to closing the STEM skills gap through our industry-informed range of educational activities, projects and placements, which connect young people and educators with the world of STEM employment and further study.

## A DIGITAL AND GREEN FUTURE

The last few years have seen unprecedented gains in digitalisation, accelerated by the COVID-19 pandemic. While the need for digital skills continues to increase, many companies are still catching up when it comes to getting talent with the right skills into the workplace.

Not only has the UK become the second largest digital economy in the world, we have also seen huge growth in green jobs as companies work towards Net Zero. The UK government has the ambition to create 2 million green jobs by 2030 and estimates that 6.3 million jobs are set to be affected by the transition to a low carbon economy over the next 30 years. This represents a market share of approximately 6% and 20% of the UK workforce. Young people want to work in a purposeful business - taking action on environment and aligned to their values. This focus on careers with a clear purpose is broader than just environment, and is key for growth across all STEM industries.

EDT supports young people to build the skills they will need for the future and explore emerging careers, from Cyber Security to Artificial Intelligence. We will continue to offer a range of virtual outreach opportunities alongside our face-to-face work in schools that support these growth areas.



# LONG TERM OBJECTIVES

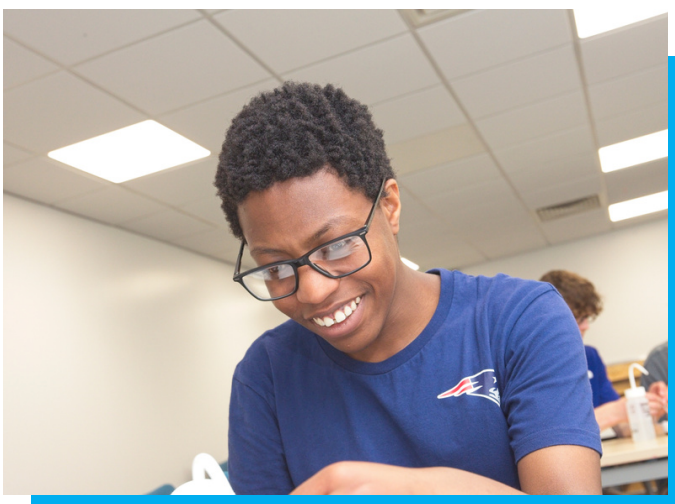
## STEM SKILLS GAP AND UNDER-REPRESENTATION

Females, ethnic minority groups, people with disabilities and those from disadvantaged socio-economic backgrounds are under-represented in education, employment and training related to STEM.

EDT work with our partners across education and industry to enable these under-represented groups to access equal opportunities in STEM. We achieve this through:

- Fun activities designed to build confidence and break down perceptions of STEM as “not for kids like me”.
- Hands-on tasks which emphasise the real-life relevance and practical applications of STEM skills.
- Activity themes chosen by young people as relevant to their own lives, including Sustainability, Health, Engineering, Aerospace, Digital World, Artificial Intelligence and Circular Economy.
- Outreach which focuses on local and regional employment opportunities, connecting young people with opportunities and role models in their own communities.
- Face-to-face interactions with a diverse range of mentors, enabling young people to “see themselves” in STEM careers.

We are proud to announce that in the last academic year, over 50% of students participating in EDT Individual Student Programmes were from underrepresented groups in STEM.



# INDUSTRIAL CADETS

## EXPERIENCES, PROJECTS AND PLACEMENTS

At EDT we believe every young person should have the chance to embrace STEM opportunities. In collaboration with industry and educational partners we have developed the Industrial Cadets portfolio and pathway of programmes to help students access STEM learning and experience the world of work.

Industrial Cadets is an industry-led quality benchmark for STEM educational programmes to build pathways through education to employment. There are five levels of Industrial Cadets:



Challenger



Bronze



Silver



Gold



Platinum

### EDT Experiences

Ages 7 - 18



EDT experiences show young people how STEM is relevant, interesting and can lead to a range of rewarding careers. Through EDT experiences including Industrial Cadets Virtual Routes Into STEM, Insight into University and Virtual Work Experience, young people work on hands-on challenges and interact with STEM professionals and educators.

### EDT Projects

Ages 13 - 17



EDT Industrial Cadets Gold and Bronze projects engage young people in real-life STEM challenges, mentored by industry professionals. Students develop core STEM and employability skills including project management, communication, team-working, time management, presentation, report writing and more.

### EDT Placements

Ages 17+



Year in Industry placements are for post A-Level/ Higher/ Advanced Higher or equivalent school leavers and undergraduate students looking for professional development within the STEM industry. Students complete a 10 to 12-month paid work placement within their intended career sector. Placements are available for all areas of STEM as well as business and finance.

Alongside EDT's Industrial Cadets accredited programmes, we also work with companies to accredit their own educational outreach activities. In 2021/22 academic year, we worked with 36 partners and accredited 67 new programmes enabling thousands more students to achieve their Industrial Cadets awards.

# OUR IMPACT

## DIVERSITY & INCLUSION

Young people are at the heart of all we do. We value diversity and strive to offer equal access and inclusive opportunities for all young people.

**58%**

of students taking part in EDT's Industrial Cadets Bronze Project were female

**49%**

of students taking part in EDT's Industrial Cadets Silver Insight into University were from ethnic minority groups

**40%**

of students who took part in EDT's Industrial Cadets Year in Industry Placements were First in Family

**22.5%**

of school children in the UK are eligible for free school meals

(\*Source: Department for Education, June 2022).

**33%**

of schools taking part in EDT's Industrial Cadets Challenger Experiences had above the national average of students on free school meals



# OUR IMPACT

## INSPIRING YOUNG PEOPLE

In collaboration with employers and partners, we have delivered impact for young people within schools, colleges and universities across the UK.



This academic year, we delivered over 45,000 experiences across the UK.

### Quotes from our students

*"Thanks for the brilliant experience of a lifetime, it has inspired me and touched me and made me unlock my inner creativity".*

*"It's made me aware of how important STEM careers are for the world and made me want a career that positively influences the world".*

*"Hearing from different professionals and apprentices currently in the field is kind of inspiring that STEM isn't really just a dream but actually realistically achievable and we can follow different steps to become one of them".*

*"Really enjoyed learning more about the industry from people just starting out and people who have been in the industry for years."*

99%

of students agreed they improved their skills and knowledge after taking part in Industrial Cadets Bronze Routes into STEM

97%

of students are likely to study a STEM subject at university after participating in Industrial Cadets Silver Insight into University

89%

of students taking part in Industrial Cadets Gold Project rated it as Excellent or Very Good

80%

of students taking part in Industrial Cadets Placements went on to apply for their placement company's graduate scheme



# OUR IMPACT

## INSPIRING YOUNG PEOPLE



45,000

Over 45,000 Industrial Cadets experiences were delivered overall in 2021/22 Academic Year

50%

Of students participating in Industrial Cadets Bronze Routes into STEM programmes said they wanted to continue their Industrial Cadets journey

92%

Of students feel the skills & knowledge they gained from Industrial Cadets Silver Virtual Insight into University programme will have a positive impact on their future

99%

of students said they will use their Industrial Cadets Gold Project experience to strengthen their application to their post 18 further education

### Quotes from our students

***"I really enjoyed partaking in this course. It definitely helped me to have a much better understanding of STEM at university and has secured my decision in going down the route of STEM in my future career. It was most useful to join the live sessions as each session individually provided a lot of newfound information that is usually not available online. Each of the guests on the sessions used their expertise to provide us with knowledge of different aspects of university and careers in STEM."***

***"It was very helpful since it was not just reading bunch of information but we were actually getting involved in the project. By learning more independently, the quality of the knowledge I gained and the understating of the concept was much greater."***

***"I really enjoyed completing the course! It helped me to practice my independent study and research skills, which I feel is good preparation for university. Furthermore, the knowledge I gained about the university lifestyle and workload has made me feel less stressed and has given me helpful insight into life as a student and studying as a student. Most importantly though, I learnt a lot from this course, not just factual information but also about myself and my learning style."***



# CASE STUDIES

## CORPORATE PARTNERSHIPS

We work in collaboration with our corporate partners to design and develop bespoke programmes aligned to their strategic priorities.



GSK have supported EDT's Industrial Cadets programmes for a number of years, alongside introducing new bespoke offerings that we have developed in collaboration. In the 2021/22 academic year GSK were able to offer students an opportunity at every level of the Industrial Cadets Pathway, becoming the first corporate partner to support young people in this way.



All GSK Industrial Cadets Placement students have the opportunity to achieve an Industrial Cadets Platinum/Platinum Leader award. Last year we had a record number of 165 students graduating at this level. Through GSK's support of other Industrial Cadets programmes, Placement students gain the opportunity to volunteer which enables them to support and inspire younger students starting on their journey to a future STEM career.

97%

of students feel that they have improved their skills & knowledge by taking part in the Industrial Cadets Bronze Project

99%

of students will use their experience to strengthen their application to university, apprenticeship programmes or other post-18 applications

86%

of Platinum/Platinum Leader students said they were planning to apply to the GSK Graduate scheme



***"My Industrial Cadets experience was amazing I had so much fun. It really helped my confidence grow and encouraged me to carry on chasing my dreams. Furthermore, I made some new friends who helped me when I was struggling and who reminded me to keep going." - Student***

***"It has been wonderful how EDT has managed to help the school build connections with industry. The mentors have been very approachable and knowledgeable and have supported the students to complete the project." - Teacher***

524

students achieved their Bronze Industrial Cadets Award

60%

of Platinum Leader students would like to be kept informed of volunteering opportunities by EDT

# CASE STUDIES

## CORPORATE PARTNERSHIPS



We partnered with Avantor Foundation to deliver an Industrial Cadets Virtual Work Experience which was delivered at the end of July 2022 to young people aged 14-18 years old.

The experience was available for over **110 motivated students** to broaden their knowledge of Avantor and the pathways available to them after finishing school, showcasing future career opportunities and giving them the opportunity to interact with industry professionals.

**98%**

of students agreed they learnt more about Avantor from taking part in the week and found it valuable

**94%**

of students rated their experience 'Good', 'Very good' or 'Excellent'

**100%**

of students felt their Industrial Cadets experience inspired them to see a future in STEM

We also ran the Avantor Insight into STEM careers workshop 22 times over the 2021-2022 academic year for students in Year 9 -11 in England. Students broadened their knowledge of STEM careers and the essential skills they may need.

**2115**

students achieved their Industrial Cadets Challenger Award

**100%**

of teachers agree or strongly agree that the content was beneficial and relevant to their students

*"Thank you so much for such a fun activity, I've learnt a lot of new skills and now I am quite interested in STEM - and I want to do more activities!" - Student*

*"This was an excellent, well-organised day promoting STEM which the children thoroughly enjoyed. Thank you" - Teacher*

# CASE STUDIES

## TRUSTS & FOUNDATIONS

Our partnerships with grantmakers and philanthropists help us to expand our programmes, inspiring young people from under-represented groups to see themselves in STEM.

Core funding from Garfield Weston Foundation is enabling EDT to provide more young people, from diverse backgrounds, with high-quality STEM experiences through the Industrial Cadets skills and competency framework.

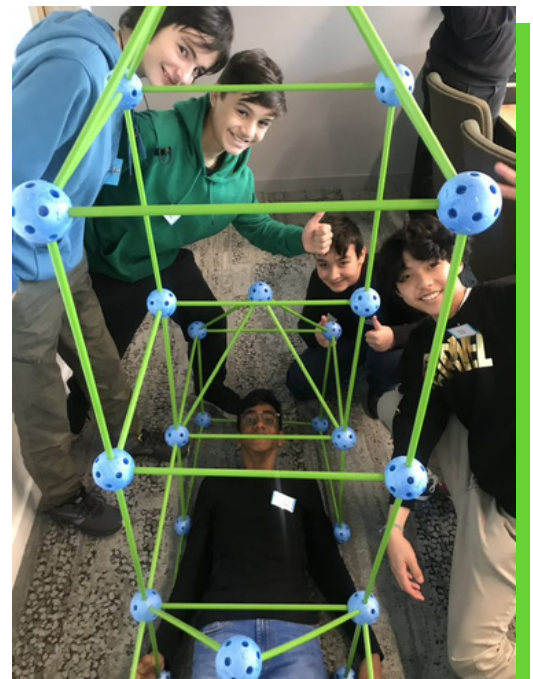
Their support has meant that we've been able to expand the network of schools, students, employers and volunteers who are part of the Industrial Cadets community.

Core funding has been hugely important in enabling us to invest in the development of Industrial Cadets and to leverage other funding and partnerships.

As well as building STEM knowledge and aspirations, Industrial Cadets accredited activities and awards help young people to develop their skills for life, work and wellbeing. Young people who participate say that their experience has helped them with teamwork, communication, problem-solving and confidence.

***"I have really appreciated the chance to take part in Industrial Cadets. It has been such an amazing experience and I feel it has really helped me to grow as a person. When I first started, I remember being so confused, thinking was this really for me? But throughout the months I have learnt so much, and I feel so much more confident when taking part in anything involving STEM."***

**Industrial Cadets participant 2021/2022**





# CASE STUDIES

## TRUSTS & FOUNDATIONS



Cadent Foundation awarded us with a grant to educate young people on the importance of STEM in solving environmental challenges, empowering them to use their skills to develop climate solutions.

The funding was used over two years (2020-2022) to deliver Industrial Cadets Bronze projects with Year 8 and 9 pupils, predominantly in areas with above-average levels of deprivation and youth unemployment.

With support from a mentor, the pupils use fun and educational activities to develop environmental solutions to key issues such as waste management and recycling, energy use and designing buildings for climate change. The programme also showcases the career pathways available including apprenticeships and graduate opportunities.

**216 students, working in 38 teams, from 21 different schools** took part in the projects, proposing environmental solutions to a challenge within their school or community, each gaining an Industrial Cadets Bronze Award.



***"In a year when young people have faced multiple activity cancellations the opportunity to work on an environmental project supported by mentoring from STEM professionals was a much-needed and positive experience for young people. As well as developing their knowledge of STEM, the students achieved an Industrial Cadets Bronze Award and developed key life and employability skills such as teamwork, communication, problem-solving, project management, innovation, ICT and numeracy skills."***

**Julie Feest, Chief Executive Officer of EDT.**

# CASE STUDIES

## EDUCATION

We delivered programmes to different schools to help students reach their potential in the STEM field.



Hannah Burns is an S3 student at Woodfarm High School in Scotland. She participated in an Industrial Cadets Bronze Project as part of a team with five other girls from her year group during the pandemic and took part in a Challenger event in October 2022.

Before taking part in the programme, Hannah had a general understanding of STEM. However, after taking part, she gained more knowledge of what studying STEM courses entails. Hannah's favourite subjects are Physics, Chemistry and Technology.

We asked Hannah what skills she developed during her experience and she said: *"I developed a lot of skills, especially communication and teamwork."*

*"These were especially important when doing the project, so we knew what the other team members were doing and avoided two people doing the same thing. It helped us make progress with the project."*

Hannah did some of her project remotely due to the pandemic, so these skills were vital for her success. She also acknowledged that these skills are really important as they are needed in any future career.

The programme also helped Hannah to have a wider understanding of different STEM careers. Hannah said she didn't know that certain jobs existed, especially in construction (the project Hannah did was on built environment), so the project broadened her knowledge of other careers.

Hannah enjoyed the project in general but especially liked the model-making aspect, as she likes doing things with her hands and has always liked cars. She watches Top Gear with her dad and has gone to car events with him.

Hannah is currently studying Product Design & Manufacture and Art. In the future, she hopes to study Automotive Design at Coventry University.

# INSPIRING VOLUNTEERS

Through our programmes, we inspire and encourage our alumni to become volunteers and continue their involvement with EDT, enabling them to support other Industrial Cadets on their STEM educational journey.



Fatima Sajid (pictured) completed her Year in Industry placement in summer 2021 at Avanti West Coast Trains. Fatima recently volunteered to mentor an Industrial Cadets Bronze team, which she found very rewarding.

*Fatima said: "I had a fantastic time being an Industry mentor for a school team for their Industrial Cadets Bronze Award, the students had many creative ideas and you could see them develop core skills as the project went on."*

*It was very rewarding to see all the students' hard work be recognised through awards at their celebration event which wrapped up their year. I was involved in running a stand and being part of a Q&A panel during this celebration. It was brilliant as I could actually make an impact on the next steps some of the students would take from undertaking their Industrial Cadets Gold Award in the future to completing a Year in Industry!"*

***'EDT provided additional support to my placement which enhanced the value of the placement. By running Masterclasses, providing external mentors and Industrial Cadets awards it provided extra opportunities to learn and gain extra value from my Year in Industry' -  
Year in Industry Placement Student***

***'My mentor was the best part of my Year in Industry Placement. He gave such great advice and made me feel really supported. It was lovely having someone completely separate from the company' - Year in Industry Placement Student***





# THANK YOU!

You help us give young people the tools they need to build bright STEM futures.

arm

ARUP

ADS

avantor  
foundation



BAE SYSTEMS

Cadent  
Foundation

W  
Garfield Weston  
FOUNDATION

GFG  
FOUNDATION

gsk

JCB

LEONARDO

M  
MOTT  
MACDONALD

NetworkRail

Her Majesty The Queen's  
PLATINUM JUBILEE PAGEANT  
1952 - 2022

ROLLS  
ROYCE

UKRI  
Science and  
Technology  
Facilities Council

SCOTTISHPOWER

Foundation  
SCOTTISHPOWER

Sea  
green  
WIND ENERGY

sse | For a better  
world of energy

UK SPACE  
AGENCY

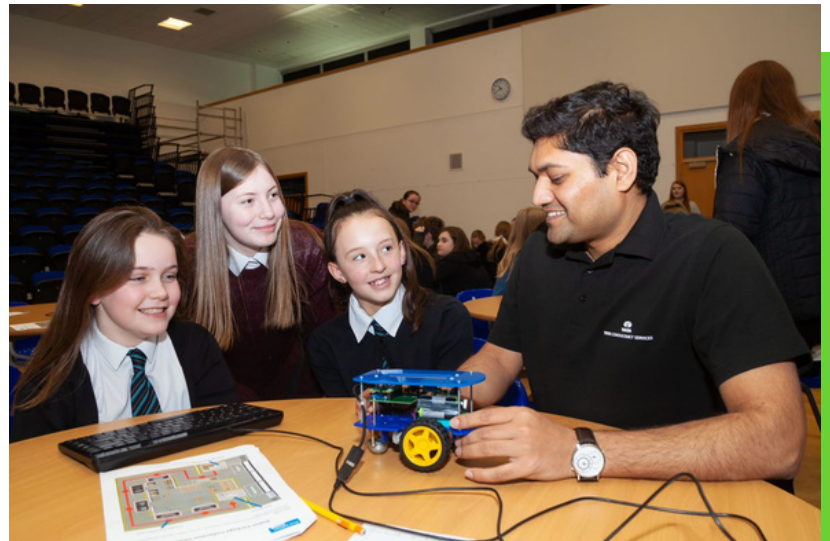
United  
Way

Viridor

## Address:

Engineering  
Development Trust  
(EDT), Weltech Centre,  
Ridgeway, Welwyn  
Garden City,  
Hertfordshire AL7 2AA

EDT (Engineering  
Development Trust) is a  
registered charity in  
England and Wales  
(1156066) and in Scotland  
(SC039635) and is a  
company limited by  
guarantee (number  
8879288).



Follow us on social media



Email: [info@etrust.org.uk](mailto:info@etrust.org.uk)

Industrial Cadets

EDT

Industrial  
Cadets

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