



Impact report

2021/22 academic year

What is CREST?

CREST is the British Science Association's flagship education programme, providing enrichment activities to inspire, engage and connect young people aged 5-19 across the UK with science, technology, engineering and maths (STEM).

How does the CREST Awards scheme work?

The CREST Awards scheme inspires young people to think and behave like scientists and engineers. It can be done by any child or young person aged 5-19, regardless of ability.

CREST empowers young people to investigate issues they care about, helping them see how science is relevant to their everyday lives and futures, and raising their STEM aspirations at school and beyond – with the benefits greatest for young people from minoritised communities

The scheme provides teachers and home educators with simple and adaptable activities linked to the national curriculum for a range of ages, group sizes and abilities – from off-the-shelf one-hour challenges to large-scale student-led projects of 70+ hours' work.



“The CREST Awards provide a valuable insight into what science is really like, pupils have to act like a real scientist as they research and explore their projects. It is a fantastic way to enjoy science and, at the same time, develop many important skills including problem solving, team working, practical thinking, communication and presentation skills.”

Charlotte Dewhurst | Science teacher | Saint Paul's Catholic High School, Greater Manchester

CREST Award levels



Star

Ages 5-7
8 x 1 hour challenges



SuperStar

Ages 7-11
8 x 1 hour challenges



Discovery

Ages 10-14
5 hours



Bronze

Age 11+
10 hours



Silver

Age 14+
30 hours



Gold

Age 16+
70 hours

PRIMARY

SECONDARY

Once complete, projects are assessed by teachers, home educators or experts from the STEM and education sectors, and each student is awarded a personalised certificate.

The CREST Awards scheme is cross-curricular and nationally recognised for student-led project work in the STEM subjects, highly valued by universities and employers alike.

CREST for young people who are underrepresented in STEM

The British Science Association's (BSA) vision is of a future where science is more relevant, representative and connected to society. We recognise that there are often substantial barriers schools face when trying to support students who are most often underrepresented in science, who include:

- girls
- young people from lower socioeconomic backgrounds
- young people from ethnic minorities
- non-binary young people
- young people with special educational needs
- students attending schools in rural areas.

With support from UK Research and Innovation (UKRI), the BSA provides a range of free initiatives and resources to enable schools in challenging circumstances¹ to participate in CREST, including our 1,500 member-strong teacher network, buddy scheme, grant programmes and partner project opportunities.

George's story

George, a 14-year-old autistic student at Lighthouse School in Leeds, achieved a Silver CREST Award for his invention of an automated biscuit-dunking machine, built from Lego.

The machine – which was inspired by experiments in class to find the best biscuit to dunk in a cup of tea – included a cupholder, extendable arm with a rubber claw, two motors, a main data hub and buttons to give the machine exact instructions.

George plans to follow his aptitude for STEM into a career in cyber security.

“(This project) has given me more confidence, as it is physical proof that you can achieve something.”

George | Taking part in an interview for ITV News Yorkshire

“The CREST Awards gave George a springboard to explore his areas of interest and independently showcase his skills and knowledge.”

Caroline Maston | George's science teacher

George with his invention



¹Criteria: At least 30% of pupils are eligible for pupil premium (or equivalent); at least 30% of pupils are from ethnic minority backgrounds and/or located in a designated rural postcode

The impact of CREST in 2021/22

In the 2021/22 academic year, CREST participation rates soared as students and teachers across the UK returned to school full-time after two years of partial school closures due to the COVID-19 pandemic.

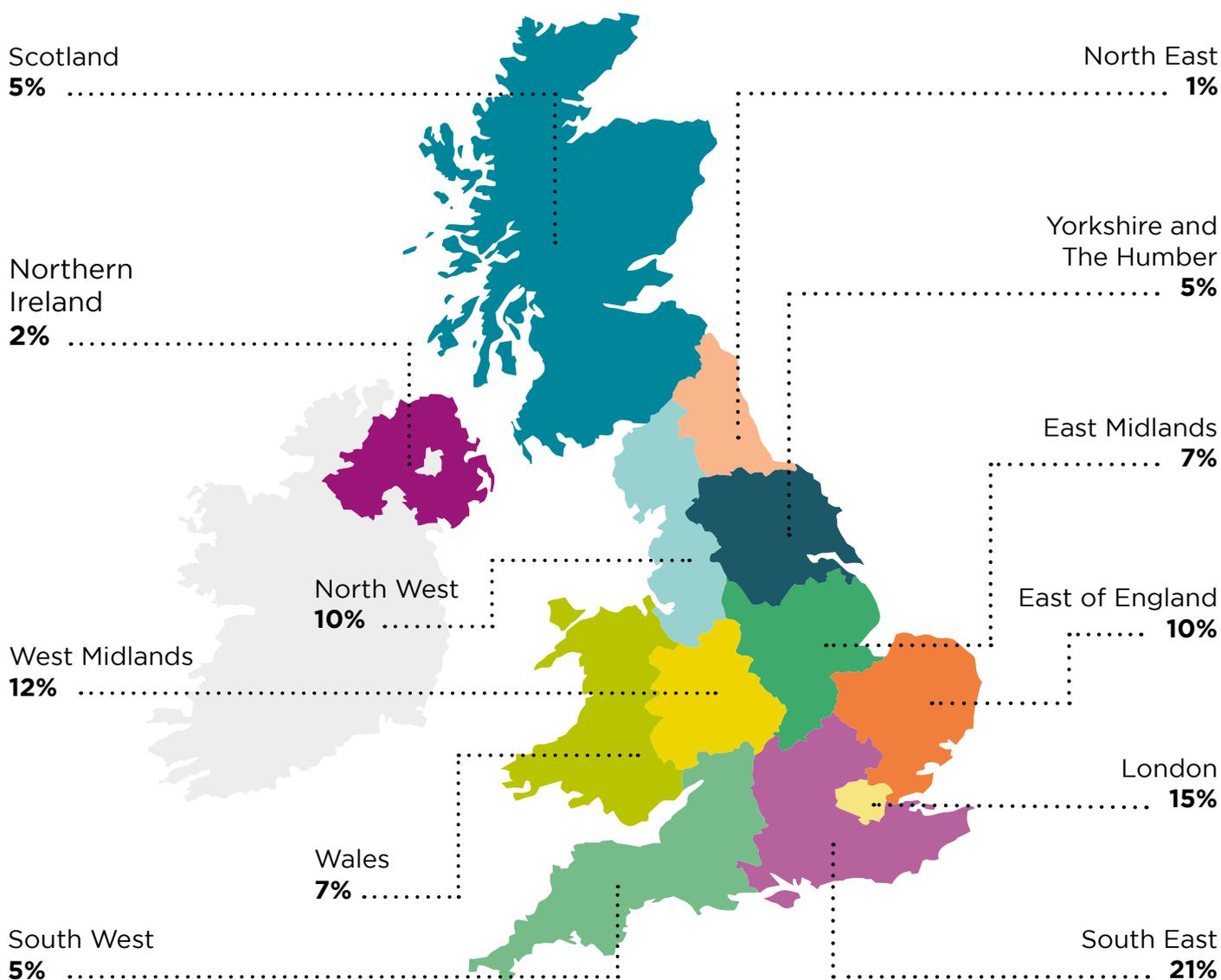
We received more than 56,000 CREST Award submissions – double the previous academic year – with students spending more than half a million hours on inspiring STEM activities and projects.

Encouragingly, this activity was particularly focused on students who experienced the greatest learning loss during the pandemic², with 3 in 5 schools that ran CREST supporting high proportions of students from groups underrepresented in science.

We believe our reach for the academic year extends well beyond our submission figures, as our activities are freely available to all and we saw 100,000 visits to our online CREST resources library.

CREST is UK-wide

Percentage of CREST Award submissions in 2021/22 from each UK region



² Ofqual (2021) [Learning during the pandemic: quantifying lost learning](#)

At a glance

Participation in CREST Awards in 2021/22



56,255

students submitted
CREST Awards



1,129

UK schools took
part in CREST³



518,095

hours spent by
students on STEM
projects and activities

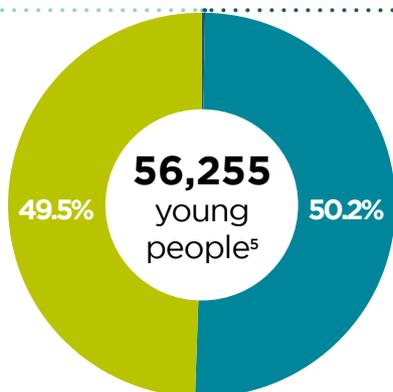


3 in 5

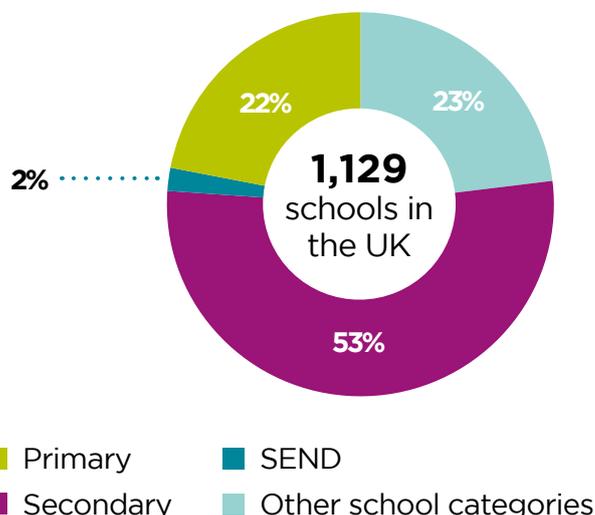
CREST schools
are in challenging
circumstances⁴

Who is taking part in the CREST Awards scheme?

0.1% 0.1%



■ Boys
 ■ Girls
 ■ Non-binary
■ Prefer to self-describe



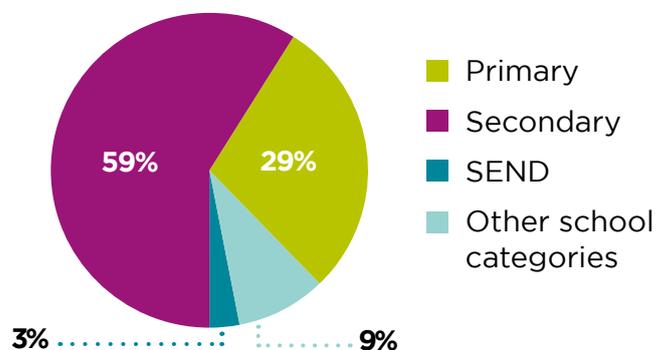
■ Primary
 ■ SEND
■ Secondary
 ■ Other school categories



3 in 5

schools running CREST are in
challenging circumstances

Of these schools in challenging
circumstances:



³ 1,067 school in England and 62 schools in Wales. Schools in Scotland and Northern Ireland also participated but data was not available at the time of creating the report. Please note: non-school education settings, such as libraries, councils, home educators or youth groups, are not included.

⁴ Based on a five-year average from 2018-2022

⁵ Does not include data for pupils whose gender is not known (n=4,948) or who preferred not to say (n=21,769)

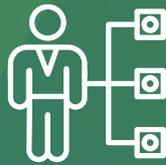
Who benefits? CREST helps young people:



Enhance research, communication and teamworking skills



Build independence and resilience



Gain employability skills



Improve GCSE grades



Gain confidence



Develop their STEM identities

What's the challenge?

CREST's impact in 2021/22

Children and young people

By the age of 7, children's stereotypical views of scientists as male, white and highly intelligent are formed⁶. By the age of 11, only 1 in 6 (17%) children aspire to be a scientist⁷.



28,541 primary children aged 5-11 completed CREST Star and SuperStar projects, igniting a passion for science and challenging stereotypes of who scientists are and what they do.

The disadvantage gap in GCSE grades is the widest it has been in a decade⁸.



Students who complete Silver CREST Awards see an improvement of half a grade in GCSE science, rising to two-thirds of a grade for those eligible for free school meals.

Fewer students chose to study maths, chemistry and physics A levels in 2022 compared to 2021⁹.



Students who complete Silver CREST Awards are 21% more likely to study STEM subjects at AS level, rising to 38% for students eligible for free school meals.

Teachers

Hands-on practical learning is fundamental to science teaching but there is a large variation in the quantity and quality of practical science work in schools¹⁰.



CREST provides practical science activities for students of all ages and abilities across the UK and is linked to the national curriculum, so can be run in lessons.

Schools in challenging circumstances experience greater financial and resource barriers to delivering science enrichment activities for students underrepresented in science.



CREST provides free resources for all UK schools, plus additional support for schools who need it most, including a teacher support network, buddy scheme and grants.

Employers

STEM skills are vital to the UK economy for growth, development and emerging markets but the UK is facing a STEM skills shortage¹¹.



CREST enables students to see themselves as scientists and engineers, inspiring them to pursue further STEM study and careers.

Only 27% of the UK's STEM workforce are women¹².



50% of CREST participants are girls.

⁶ University of Northumbria (2021) [Scientist of the week: evaluating effects of a teacher-led STEM intervention to reduce stereotypical views of scientists in young children](#)

⁷ King's College London (2013) [ASPIRES: Young people's science and career aspirations, age 10-14](#)

⁸ Department for Education (2022) [Key stage 4 performance](#)

⁹ CaSE (2022) [A Level and GCSE results analysis](#)

¹⁰ Ofsted (2023) [Finding the optimum: the science subject report](#)

¹¹ House of Lords Science and Technology Committee (2022) [Letter from Baroness Brown of Cambridge](#)

¹² APPG on Diversity & Inclusion in STEM (2021) [Equity in the STEM workforce](#)

We couldn't do it without you

Together with thousands of dedicated teachers, home educators, regional partners and our generous funders, we enabled more than 56,000 children and young people across the UK to achieve a CREST Award in the 2021/22 academic year.

From racing rockets and investigating whether dropped toast always lands butter-side down, to George's biscuit dunking machine – we've ignited students' passion for science, broadened their STEM horizons and helped them gain the confidence and skills they need to flourish at school and beyond.

With the UK facing a STEM skills shortage, CREST can equip young people with essential skills for employment and inspire them to pursue careers in STEM.

Help us inspire the innovators of the future

CREST is supported through statutory funding, including grants from UKRI and the Welsh Government, as well as a range of corporate partners and Trusts and Foundations, including Mewburn Ellis, Urenco and the NCR Foundation.

We are actively looking for new partners across a range of industry sectors to inspire, engage and connect more young people with STEM, particularly those who are most typically underrepresented.

By supporting CREST, you will:

- be instrumental in inspiring tomorrow's scientists, engineers and technologists
- have the opportunity to co-develop activities relevant to your field
- be affiliated with a nationally recognised STEM programme.



Mewburn Ellis

Making science accessible for all young people

As a national CREST Awards partner, Mewburn Ellis – one of Europe's leading intellectual property (IP) firms – is helping more young people from all backgrounds get into science.

In 2021/22, Mewburn Ellis provided funding for up to 40 schools serving disadvantaged students, in each of its four UK office locations, to invest in the resources needed to run CREST. As a result, 1,000 students were able to complete their CREST Awards for free.

“We're immensely proud to be working with the British Science Association. Our vision is to enable more young people to get into science no matter what their background or circumstances. As a firm we now have a strong focus on diversity and inclusion, but key to a really diverse IP industry will be for a broader range of candidates to come into the jobs market. This has to start with schools and providing greater opportunities and we want to invest in making this a reality.”

Richard Clegg | Managing Partner of Mewburn Ellis

Get in touch

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