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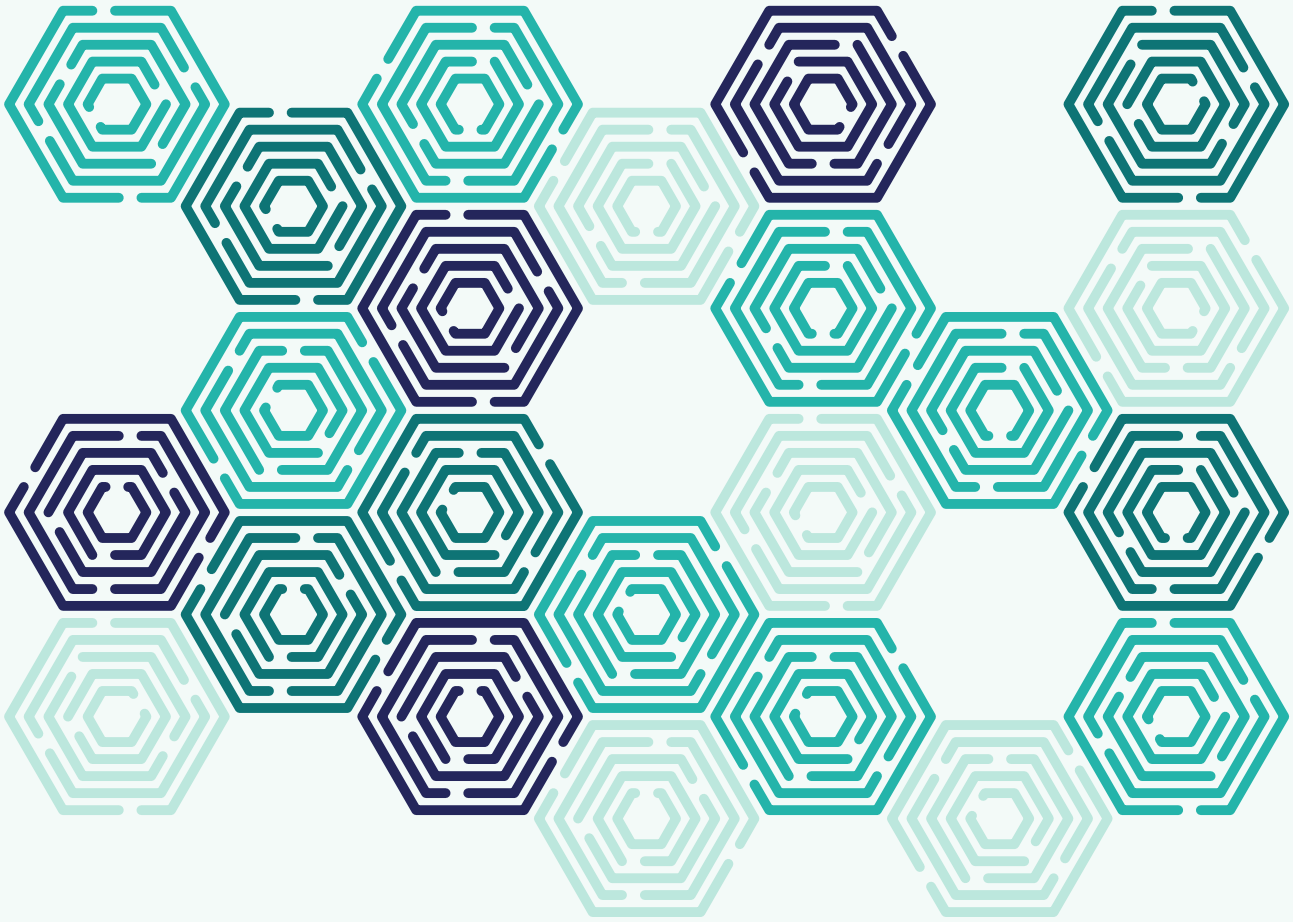

CLIMATE SCHOOLS PROGRAMME 2024/25: EVALUATION REPORT

Results from the evaluation of 2024/25 Climate Schools Programme

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Contents

Executive summary

A total of **386 schools** registered for Climate Schools Programme, with **49%** of these schools meeting EngineeringUK's priority school criteria.[1] Climate Schools Programme aims to inspire students to consider careers in engineering and technology by making the link between these industries and their role in tackling climate change in curriculum linked resources which teachers can adapt to use in their schools.

There were **25 Climate Schools Programme resources available in 2024/25**. These resources included lesson plans for geography, English and science, alongside science practicals, Climate Action Club resources[2], and supplementary materials. To support schools to deliver these science practicals, EngineeringUK provided **6 schools with a kit box** which contained equipment and materials needed to deliver the science practicals.

This evaluation draws from:

- **student survey** responses from **333 students** across **8 schools**
- **teacher-led student discussion activity** responses from **14 group discussions** across **7 schools**
- **teacher survey** responses from **25 teachers** across **24 schools**
- **teacher interviews** from **7 teachers** across **7 schools**

The student survey and teacher-led discussion activity findings explore Climate Schools Programme's impact on students' enjoyment, knowledge and hopefulness around climate change, alongside their knowledge, motivation, and interest in engineering and technology careers. The evaluation also examined differences in experience across delivery and key demographic groups, including delivery type, number of resources delivered, gender, ethnicity, free school meal eligibility, disability status, year group and prior STEM engagement.

The teacher survey and interview findings explored teachers' experience of Climate Schools Programme, their views on students' experience, kit boxes (if applicable), teacher confidence and knowledge around engineering and technology careers and climate change, and future STEM engagement plans.

Key Findings

Climate Schools Programme engages young people in engineering and technology, with evidence that it supports EngineeringUK's strategic mission to enable more young people from all backgrounds to be inspired, informed and progress into engineering and technology.

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[1] EngineeringUK's priority school approach identifies schools with high proportions of students from underrepresented groups in engineering. The aim is to target programs and support to these schools to increase diversity in the engineering and technology workforce. For more detail, see https://www.tomorrowsengineers.org.uk/improving-practice/resources/engineeringuk-priority-schools-criteria/

[2] Resources for schools to use to run a club for students to work on engineering or technology-based projects which take action to reduce a school's and/or a community's contribution to climate change. For more information, see https://eukeducation.org.uk/our-programmes/climate-action-club/

Students

Climate Schools Programme performed well in the evaluation with young people, with positive responses to questions from all demographic groups.

Enjoyment

There were high levels of enjoyment, with **63%** of students **enjoying Climate Schools Programme**, which is positive as research has shown that while students appreciate that learning about climate change and sustainability is important, they do not necessarily enjoy it as they usually focus on issues of climate change rather than solutions.[3] There were no significant delivery or demographic differences for enjoyment. Prior STEM engagement was the only predictor of enjoyment, with students with high prior STEM engagement responding more positively to enjoying Climate Schools Programme (74%). However, students with low prior STEM engagement still responded positively to enjoying Climate Schools Programme (57%).

Engineering and technology outcomes

Student survey findings suggest there was a positive impact on engineering and technology outcomes for students, with:

- **67%** reporting **increased knowledge** of the different types of **things engineers do** in their jobs
- **67%** reporting increased knowledge **of the role engineers play in finding solutions to climate change**
- **69%** reporting feeling more **hopeful about what we can do to tackle climate change**
- **52%** being **motivated** to find out more about **engineering or technology jobs**
- **56%** reporting **increased interest** in **engineering or technology jobs**

Delivery differences

Students were positive about the impact of Climate Schools Programme regardless of whether they participated in a single lesson or resource, or multiple resources. There was one significant difference in **delivery type** (lesson vs practical vs both), with students who took part in a practical (62%) saying they were more interested in a future technology career after Climate Schools Programme than students who did only the lesson (38%) or both (47%).

Prior STEM engagement

While gaps were seen in prior STEM engagement in 6 of the 9 outcomes, students with low prior STEM engagement responded positively across all outcome areas, suggesting Climate Schools Programme effectively reaches less engaged groups. For example, 64% of students with low prior STEM engagement said they learned about the role of engineers in finding solutions to climate change, meaning that the message didn't only reach students already interested in this subject

[3] Climate Change and Sustainability Education: A survey of students in England, 2024. UCL. https://discovery.ucl.ac.uk/id/eprint/10195286/

area. This emphasises the importance of outreach organisations offering a variety of activities and resources, including teacher-led resources to reach students who might not otherwise engage in STEM activities.

Year group

No significant differences were reported between different year groups, suggesting that the resources are impactful for year 7 to year 10 students.

Demographic differences

Notably, there were **no significant gender differences** for the outcomes. In other words, girls and boys reported similar positive experiences across the programme. This is a positive finding, as it does not mirror findings from national levels[4] nor other EngineeringUK evaluation findings, as boys typically respond more positively to outcomes linked to engineering and technology. While this finding is positive, it should be noted we can't say for certain what engineering and technology content teachers decided to keep in when delivering the resources, and as the sample took part in only science-based resources, teachers may have delivered more science content to students, rather than engineering and technology content. We know from SET[4], that girls tend to be more interested in science than in engineering or technology, which adds a layer of complexity when interpreting the current gender findings.

Positively, there were also no significant differences related **to students' free school meal** or **disability status**. There was only one significant difference for **ethnicity**, with students from UK minority ethnic groups responding more positively to feeling more hopeful about climate change following the programme.[5]

Teachers

Like with the students, Climate Schools Programme performed well in the evaluation with teachers. Interviewed and surveyed teachers reported positively on their **experience** of Climate Schools Programme, as well as their students' experiences of the resources**.** Particularly, interviewed teachers spoke to how the resources helped to engage their students and make them more aware of engineering and technology careers, and surveyed teachers said Climate Schools Programme was **accessible**, **linked to the curriculum**, and highlighted a **wide variety of careers in engineering and technology**.

Additionally, interviewed and surveyed teachers felt Climate Schools Programme highlighted **solutions to climate change** and other environmental problems, and made teachers feel **more confident and knowledgeable when speaking to students about climate change**. They also responded positively around Climate Schools Programme improving their **knowledge** and

[4] Science Education Tracker 2023 (Wave 3). EngineeringUK and The Royal Society. www.engineeringuk.com/set
[5] As noted in the report, this should be interpreted with caution due to the smaller sample size of students from UK minority ethnic backgrounds for the outcome

confidence about **engineering and technology careers** and were more likely to **suggest** to a **student** they **consider a career in these areas**.

Teachers who received a **kit box** provided very positive feedback on these, saying they would not have been able to deliver the practical lessons without them, and how the kit boxes gave students a better experience of the practical lesson than they otherwise would have.

Recommendations

- **engage with SLT to embed the Climate Schools Programme across schools** to ensure multiple touch points for students, and to maintain interest with less engaged students
- **continue to support schools to leverage partnerships and incorporate role models** to support students visualise pathways and generate additional interest in these jobs
- **continue to embed environmental sustainability solutions and careers messaging** across other EngineeringUK resources and activities for schools using learnings from this evaluation and other research[6]
- **EngineeringUK to evaluate Climate Schools Programme with a larger sample who take part in more Climate Schools Programme resources** to explore which factors are the key drivers for student outcomes and establish robust evidence of the programme's impact
- **continue to provide schools with kit boxes to deliver practicals as part of Climate Schools Programme** to encourage and support schools to deliver more practical work as good quality practical work promotes student engagement and interest in science[7]
- **EngineeringUK to review Climate Schools Programme resources and, if possible, include more practical lessons** based on positive evaluation findings around practical lessons and student engagement, which may also help to maintain interest generated among less engaged students
- **use evaluation findings to develop additional programmes at EngineeringUK**, for example using the positive findings about practical lessons to develop more workshop-style programmes
- **continue to promote the programme to teachers** to reach those who may be less informed about engineering and technology careers so the resources can support them to be more knowledgeable and confident in these areas
- **provide more continuing professional development resources for teachers** around the importance of including careers information when delivering the resources to students and how to tackle climate denialism in the classroom

[6] Incorporating environmental sustainability content into outreach programmes 2025. EngineeringUK. https://www.engineeringuk.com/research-and-insights/our-research-and-evaluation-reports/incorporating-environmental-sustainability-content-into-outreach-programmes/
[7] Science Education Tracker 2023 (Wave 3). EngineeringUK and The Royal Society. www.engineeringuk.com/set

Introduction

Climate Schools Programme aims to inspire students to consider careers in engineering and technology by making the link between these industries and their role in tackling climate change in curriculum linked resources which teachers can adapt to use in their schools.

A total of 386 schools registered for Climate Schools Programme this year, and 49% of these schools met EngineeringUK's priority school criteria.[8] We were able to track downloads of 135 schools[9], and these 135 schools planned to share the resources with 12,083 students.

There were 25 Climate Schools Programme resources available for teachers to download in 2024/25. These resources included lesson plans for geography, English and science, alongside science practicals, resources to run a Climate Action Club[10], and supplementary materials. Themes reoccurring throughout all the resources include tackling climate change, exploring engineering and technology careers, and building skills needed for these careers. You can explore all of Climate Schools Programme resources available here.

Between 2016 and 2020, there has been a sharp decline in interactive forms of practical sessions across students, which may be due to a variety of reasons such as the Covid-19 pandemic and a shift towards using more digital technology. We know from previous research, however, that good quality practical work promotes both student engagement and interest in science.[11] The science practicals included in Climate Schools Programme include 3 interactive forms of practical sessions wherein students experience building a solar oven, wind turbine and/or electromagnetic motor.

This year, EngineeringUK trialled an approach encouraging schools to take part in science practical lessons, by providing a kit box to 6 chosen schools. These kit boxes contained equipment and materials needed for schools to deliver all 3 science practicals with 8 classes at their school.

We used EngineeringUK's Impact Framework[12] to build a Theory of Change and identify short-term outcomes for Climate Schools Programme, which centre around the COM-B model:

- making sure young people **enjoy themselves** to get their attention and engage them in meaningful activities
- building their **capabilities**, so young people feel that they have the skills to pursue a job in engineering and technology and feel confident to do so
- presenting them with new **opportunities** to increase their knowledge of engineering and technology jobs and what people working in these areas do

[8] EngineeringUK's priority school approach identifies schools with high proportions of students from underrepresented groups in engineering. The aim is to target programs and support to these schools to increase diversity in the engineering and technology workforce. For more detail, see https://www.tomorrowsengineers.org.uk/improving-practice/resources/engineeringuk-priority-schools-criteria/

[9] We were able to track school downloads mid-way through the 2024/25 year

[10] Resources for schools to use to run a club for students to work on engineering or technology-based projects which take action to reduce a school's and/or a community's contribution to climate change. For more information, see https://eukeducation.org.uk/our-programmes/climate-action-club/

[11] Science Education Tracker 2023 (Wave 3). EngineeringUK and The Royal Society. www.engineeringuk.com/set

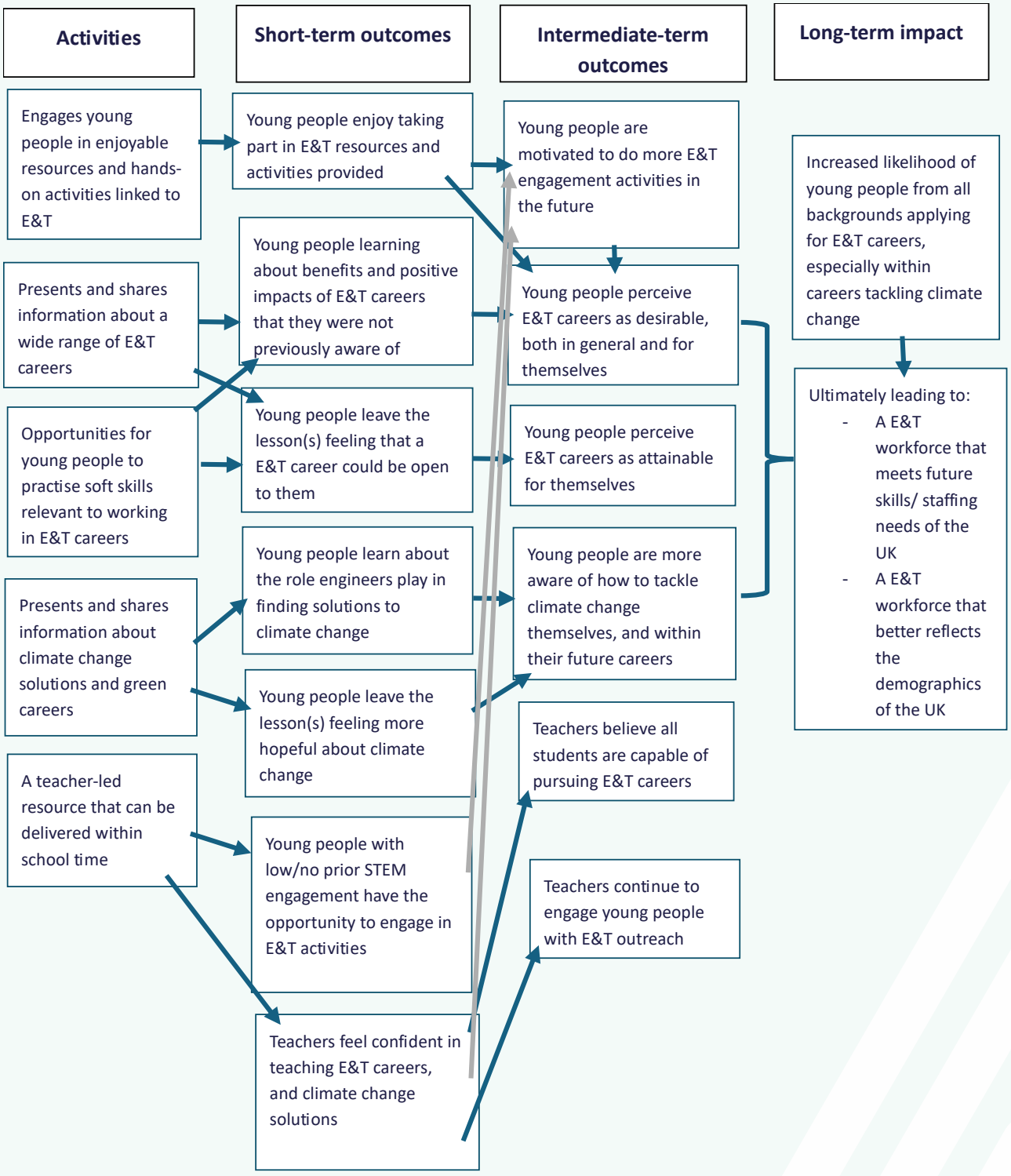
[12] Impact framework 2021. EngineeringUK. www.engineeringuk.com/research-and-insights/our-research-and-evaluation-reports/impact-framework/

- **motivating them**: getting young people interested in engineering and technology activities and finding out more about engineering and technology jobs, as well as feeling interested in these and that these careers would suit someone like them.

Based on previous research related to students' career pathways (for example, the Science Education Tracker[13]), our Theory of Change assumes that influencing students' capabilities, opportunities and motivation will contribute to the long-term goal of helping young people make an informed choice about pursuing a career in engineering and technology, and subsequently more will choose to do so (Figure 1).

[13] Science Education Tracker 2023 (Wave 3). EngineeringUK and The Royal Society. www.engineeringuk.com/set

Figure 1: Theory of Change for Climate Schools Programme



Note: E&T careers= engineering and technology careers

Both the COM-B and Theory of Change models, however, acknowledge there are individual differences in how a given activity contributes to a certain outcome. Therefore, an important component of the evaluation is exploring whether Climate Schools Programme was experienced differently for different groups of students.

Method

In 2024/25, we evaluated Climate Schools Programme via 4 strands of data collection:

1. student feedback surveys
2. teacher-led discussion activities for students
3. teacher feedback surveys
4. teacher interviews

Student feedback survey

The student survey was available in both an online and paper format to encourage participation from as many schools as possible and was provided to teachers interested in including their students in the evaluation. Teachers handed out the surveys at the end of the final lesson or practical, as some teachers used more than one of the resources available. This is the first year we collected student data for Climate Schools Programme, so we cannot compare our findings to previous years.

The survey took roughly 5 minutes to complete. Most questions related to the target outcome variables were a Likert scale structure, meaning students responded on a 5-point scale, with one being a highly negative response and 5 being highly positive. These questions included a 'don't know' response option. Students were also asked about their previous engagement with STEM activities outside of the classroom, and their demographic background.

How we asked young people about engineering and technology

Based on insights from cognitive testing and piloting a variety of question formats at another of EngineeringUK's events in 2024 (The Big Bang Fair), we asked students about engineering and technology in separate questions. Analysis of these outcomes is presented in two ways: (i) how students responded to the individual questions, and (ii) total scores reflecting how they responded across both. For example, if students said Climate Schools Programme made them more interested in a job in engineering but not in technology, their total score across the 2 questions would be one. If they responded positively to both questions, it would be 2. We applied this approach to the following outcome measures student motivation and interest.

Analytic approach

We present descriptive statistics (frequencies and percentages) for each of the student outcomes (Appendix 1). Students who selected the 'don't know' option were included in these calculations to ensure the accuracy of the percentages. We excluded missing responses from the analysis and a base sample for each outcome can also be found in Appendix 1.

To explore the impact of Climate Schools Programme on the outcome measures, we considered how students' responses differed based on:

- delivery type (whether a student took part in lessons, practicals, or both)
- how many lessons or practicals students took part in overall

- students' year group
- students' prior STEM engagement

Beyond these differences in delivery, we also explored whether there were additional differences related to gender, ethnicity, disability status and eligibility for free school meals (FSMs).

We used multiple regression analyses to identify statistically significant differences between these groups. This approach allowed us to look at the relative influence of each variable compared to one another. The percentages presented based on these analyses exclude students who selected 'don't know', to make the outcome measures continuous. A breakdown of percentages per group, per outcome can be found in Appendix 2 (delivery type, number of resources, year group, prior STEM engagement) and Appendix 3 (demographics).

We asked students one open-ended question in the student feedback survey around what they enjoyed the most about Climate Schools Programme. Responses were analysed using an inductive thematic approach, looking both at the breadth and coverage of the themes uncovered.

Sample description

A total of 333 students from 8 unique schools completed the student survey with 301 completing the online version of the survey, and 32 completing the paper version. As we were unable to make questions in the paper survey compulsory for students to complete, there were some questions with missing responses. These have been removed from the analysis.

At a school level, half (4) were EngineeringUK priority schools, with 3 of these being Special Education Need (SEN) schools. Overall, 28% of the student sample were from an EngineeringUK priority school, with most of these being from a SEN school with above average proportions of students eligible for FSMs (78%). The remaining 22% in the priority school sample were from a school with above average proportions of students eligible for FSMs and from a UK minority ethnic background.

Out of the 25 Climate Schools Programme resources available to schools, the sample took part in 7 of the science resources (only 28% of the resources available), subsequently limiting our evaluation to these resources. The science practicals were the most common resource students took part in. More than half of the sample (54%) took part in the wind turbine practical, nearly half took part in the solar oven practical (47%), and 37% took part in the electromagnetic motor practical. The science lesson most frequently delivered was the science introduction lesson, with 39% of the sample taking part in this lesson (see Table 1).

Table 1: Percentage of sample who have taken part in each Climate Schools Programme resources

Climate Schools Programme resource	% of sample taken part in resource
Lesson: science introduction	39%
Lesson: science 1B electricity generation	38%
Lesson: science 1B green transport	5%
Lesson: science 1B green heating	5%
Practical: wind turbine	54%
Practical: solar oven	47%
Practical: electromagnetic motor	37%

Out of the student sample, over half took part in a science practical(s) only (56%), over a third took part in a science lesson(s) only (39%), and 5% took part in both practical(s) and lesson(s). With regards to the number of resources a student has taken part in, a third of students (32%) took part in one resource, another third took part in 2 resources (30%), and 37% took part in 3 or more resources. As such, we included the following variables in the multiple regressions to account for possible differences in programme delivery, while also exploring the impact of Climate Schools Programme across different student groups:

- delivery type (whether a student took part in lessons, practicals, or both)
- the number of resources a student had taken part in (whether a student took part in 1, 2 or 3 resources, regardless of delivery type)

We suspect the fact this sample is only made up of students who took part in the science resources is because the kit boxes provided to 6 schools (to support in the delivery of science practicals) required them to take part in the evaluation. All 6 kit box schools completed the student survey, and in total, 61% of the sample were students from kit box schools. Additionally, all of the students who took part in a practical in the sample were from a kit box school. Therefore, there is no variance between students who received a practical with or without a kit box, so this was not included as a variable in the regressions.

In terms of student demographics:

- 44% of survey respondents were female, 54% were male, 1% identified as non-binary, and 1% as questioning
- 4% of students were Asian, 5% Black, 7% from mixed ethnic backgrounds, 3% from other ethnic backgrounds, and the remaining 81% were white
- 30% of students said that they had a disability or special educational need
- 26% were eligible for FSMs

- 13% were in year 7, 50% in year 8, 19% in year 9, 17% in year 10, and 1% in year 11[14]

As not all students chose to answer every question, the percentages above exclude those saying don't know, prefer not to say, and that were missing.

Students were asked about the different types of STEM activities they had done outside of school before taking part in Climate Schools Programme. Students could tick multiple activities from a list, giving a sense of their overall engagement with STEM before taking part in Climate Schools Programme.

In general, students tended to have done at least one STEM activity outside of school in the last 12 months (Table 2). More than half of students said that they had engaged with STEM outside of school by seeing or reading something about science online (e.g. Instagram, TikTok, YouTube, news websites) (59%). The next most popular activities were watching a programme about science (46%), visiting a science museum or display (33%), and reading about science in a book, newspaper or magazine (32%).

[14] The students from year 10 and 11 were combined for the purposes of testing significance with year group

Table 2: Frequencies and percentages of students' STEM activities in the last 12 months

Activity	Frequency	% of total sample
Saw or read something about science online (e.g. Instagram, TikTok, YouTube, news websites)	198	59%
Watched a programme or documentary about science on TV or streaming site	153	46%
Visited a science museum or display	110	33%
Read about science in a book, newspaper, or magazine	106	32%
Created your own computer game, blog, website or animation	70	21%
Went to a science, technology, engineering or maths fair	57	17%
Attended a science, technology, engineering or maths club	47	14%
Attended an online science talk, webinar or an online museum activity about science	42	13%
Listened to a podcast or radio programme about science	35	11%
None of the above	54	16%

1 in 6 students said they had not done any STEM activities outside of school in the last 12 months (16%).

In comparison, of the 1,547 students who completed a feedback survey at EngineeringUK's Big Bang Fair 2025, only 8% said they had not done any STEM activities outside of school in the last 12 months. This suggests offering activities that schools can deliver in their own education institution, rather than travel to, reaches more students who have no prior STEM engagement. This supports the rationale for Climate Schools Programme being a resource teachers can deliver in their own classroom, as seen in the Theory of Change (Figure 1).

To account for possible effects of prior STEM engagement, we split students into 2 groups, those who had done 0 to 2 activities outside of school in the 12 months prior ('low prior STEM engagement') and another who had done 3 or more activities ('high prior STEM engagement'). The split between the 2 groups was almost even, with 56% having low prior STEM engagement and 44% classed as having high prior STEM engagement.

This binary variable was included in the multiple regressions to take young people's pre-existing interest in STEM into account while exploring the impact of Climate Schools Programme across different groups of students.

Teacher-led discussion activity

We piloted a new data collection method at EngineeringUK this year whereby we asked teachers to facilitate a discussion with students after delivering Climate Schools Programme resource(s). We provided discussion questions and prompts for teachers to use with their students. Like the student surveys, the teachers led these discussions after the final resource was delivered. Teachers were then asked to summarise the overall themes from the discussions and sent these to us. There were 2 open-ended questions teachers were asked to use to facilitate these discussions with students:

1. What did you learn in the lesson about engineering and climate change?

Prompts:

- what did you enjoy learning about in the lesson?
- what was the most surprising or interesting thing you learned in the lesson and why?
- can you give an example of some of the things engineers do to help the environment that stood out to you?

2. How did learning about the ways engineers are helping the environment make you feel?

Prompts:

- did this lesson change the way you feel about tackling climate change? Why or why not?
- before the lesson, how did you feel about the future of the planet? Has that changed?
- what did you learn today that makes you believe we can improve the planet's future?

Analytic approach

Responses were analysed using an inductive thematic approach, looking both at the breadth and coverage of the themes uncovered.

Sample description

There were 14 discussion activities submitted by 8 teachers from 7 unique schools. Two schools completed the activity with 4 different classes, one school completed the activity with 2 classes, and 4 schools completed it with one class.

Six of the teachers delivered more than one resource. The wind turbine practical was delivered 10 times making it the most delivered resource, followed by the solar oven practical and electromagnetic motor practical being delivered 8 times each. It is worth noting that as all teachers delivered a science resource, these findings cannot be generalised across all Climate Schools Programme resources for geography and English teachers. See Table 3 for a breakdown of the number of resources delivered.

Table 3: Number of teachers who delivered a specific Climate Schools Programme resource

Climate Schools Programme resource	No of teachers who delivered the resource
Lesson: science introduction	4
Lesson: science 1A green energy transition	3
Lesson: science 1B electricity generation	7
Lesson: science 1B green transport	4
Lesson: science 1B green heating	4
Practical: wind turbine	10
Practical: solar oven	8
Practical: electromagnetic motor	8

The teacher feedback survey

The teacher feedback survey was available online and emailed to teachers who downloaded a Climate Schools Programme resource.

The survey took roughly 10 minutes to complete, and questions covered themes such as:

- teachers' motivation to take part and overall experience of Climate Schools Programme
- teachers' view on student engagement
- teachers' view on student impact
- teachers' view on students' feelings towards climate change
- teachers' own confidence in highlighting a variety of engineering and technology careers
- teachers' own confidence in discussing climate change with students
- teachers' view on the cross-curricular approach Climate Schools Programme takes
- teachers' experience of receiving and using a kit box (if applicable)

There were up to 5 open-ended questions in the survey that covered teacher experience, their opinions on whether Climate Schools Programme was beneficial for developing students' employability skills, and what they found useful about the kit box (if applicable). Comments were analysed using an inductive thematic approach, letting the responses guide the insights drawn.

Analytic approach

We present descriptive statistics (frequencies and percentages) for the close-ended questions in the survey. Teachers who selected the 'don't know' option were included in these calculations to ensure the accuracy of the percentages. For the open-ended questions, comments were analysed using an inductive thematic approach, letting the responses guide the insights drawn.

Sample description

The teacher feedback survey received 25 responses from 24 unique schools. Of these 25 teachers, there were:

- 14 science teachers
- 10 geography teachers
- 9 climate leads
- 6 career leaders
- 2 careers advisors
- 2 English teachers

Over half of the teachers (56%) had more than one role in their school, with nearly all (7 out of 8) of the career leads and careers advisors also being subject teachers. All 8 climate leads were also subject teachers, and 6 had a third role as a career lead or advisor. Six teachers taught at 5 of the schools which received a kit box.

At a school level, 24 unique schools completed the feedback survey (a 6% response rate for the total number of schools registered for the programme). Nearly half of the schools were priority schools (n = 10) and 5 of these were SEN schools. The other 5 priority schools were made up of:

- 2 schools with above average number of students receiving FSM and from UK minority ethnic backgrounds
- 2 schools with above average FSM
- 1 school was a single-sex girls' school with above average number of students receiving FSM and from UK minority ethnic backgrounds

Overall, 94 Climate School Programme resources were delivered by the 25 teachers. The most delivered resources were the science lessons, science practicals, and Climate Action Club resource. The most popular practical delivered amongst surveyed teachers was the wind turbine practical (n=9), followed by the Climate Action Club resource (n =8) (see Table 4).

Table 4: Number of respondents who delivered each Climate Schools Programme resource

Climate Schools Programme resource	No of times resource delivered
English taster session	2
Lesson: English introductory	1
Lesson: English 1A (persuasive language)	3
Lesson: English 1B (debate)	2
English (all) total	8
Geography taster session	1
Lesson: Geography introductory	1

Lesson: Geography 1A-part 1 (My20250/ Net Zero)	4
Lesson: Geography 1A-part 2 (My20250/ Net Zero)	3
Lesson: Geography 1B-part 1 (wind farm)	5
Lesson: Geography 1B-part 2 (wind farm)	3
Geography (all) total	17
Science taster session	3
Lesson: Science introductory	6
Lesson: Science 1A (green energy transition)	7
Lesson: Science 1B (green energy electricity generation)	7
Practical: Science 1B (wind turbine)	9
Lesson: Science 1B (green heating)	7
Practical: Science 1B (solar oven)	6
Lesson: Science 1B (green transport)	5
Practical: Science 1B (electromagnetic motor)	7
Science (all) total	57
Climate Action Club resources	8
UNDO carbon removal resources	1
Deep green resources	1
Green engineering and technology careers presentation	1
Women in green engineering and technology careers presentation	1
Jacobs assembly	0

The majority of teachers delivered more than one resource (21 teachers), and the average number of resources delivered was 3.

Teacher interviews

We conducted 30-minute long interviews with teachers online who had delivered at least one Climate Schools Programme resource, and explored:

- teachers' reasons for taking part in the programme
- students' experience (engagement, impact, feelings about climate change)
- teachers' expectations
- teacher confidence when discussing engineering and technology careers with students
- teacher confidence when discussing climate change with students
- teachers' views on the cross-curricular approach of Climate Schools Programme
- teachers' future plans
- use of kit boxes (if applicable)

Analytic approach

Interviews were analysed using an inductive thematic approach, letting the responses guide the insights drawn.

Sample description

We conducted 7 interviews with 7 teachers from 7 unique schools. Of these schools, 3 were priority schools (2 were SEN schools who also had above average FSM students).

All 7 teachers were science teachers, and one was also the environmental sustainability lead at their school. All teachers delivered the science resources, meaning the conclusions drawn from this analysis are only applicable to these resources. A total of 4 teachers were from schools which received kit boxes.

Out of the science resources, the practicals were the most delivered resource, with 4 teachers delivering all 3 practicals. The science introduction lesson was the most delivered science lesson and 5 of the 7 teachers delivered more than one resource (see Table 5).

Table 5: Number of interviewed teachers who delivered specific Climate Schools Programme resources

Climate Schools Programme resource	No of teachers delivering the resource
Lesson: science introduction	3
Lesson: science 1B electricity generation	2
Practical: wind turbine	4
Practical: solar oven	4
Practical: electromagnetic motor	4

Student findings

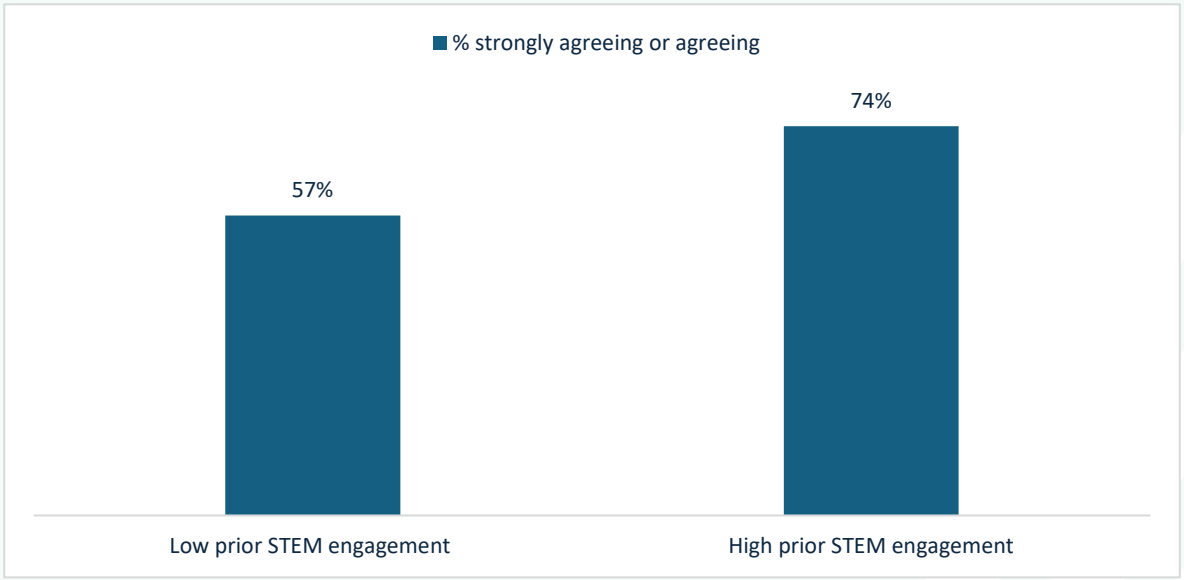
These findings have been grouped into outcomes, and significant differences between groups for these outcomes are highlighted. For a breakdown of significant and non-significant differences between groups for all outcomes, see Appendix 2 (delivery type, number of resources, year group, and prior STEM engagement) and Appendix 3 (demographics). The teacher-led discussion findings have been included throughout.

Did students enjoy Climate Schools Programme?

Positively, just under two thirds of students (63%) said that they enjoyed Climate Schools Programme (41% agreed and 22% strongly agreed). Only 11% actively disagreed with this statement, and 26% of the sample neither agreed nor disagreed, or didn't know if they enjoyed Climate Schools Programme.

This enjoyment was relatively consistent across groups. Students' level of prior STEM engagement was the only significant predictor of enjoyment, with high prior STEM engagement students[15] responding more positively, compared to students with low prior STEM engagement[16] (Figure 2). In other words, students already interested in STEM tended to enjoy Climate Schools Programme more, which echoes findings from EngineeringUK's other programme evaluations (including Big Bang at School 2024/25 and The Big Bang Fair 2025). However, over half of students (57%) in the low prior STEM engagement group still agreed they enjoyed the event (compared to 74% of students in the high prior STEM engagement group), which tells us the programme didn't just engage students who were already interested in STEM.

Figure 2: Significant differences between prior STEM engagement groups for enjoying Climate Schools Programme



[15] those who had been to 3 or more STEM-related activities outside of school in the last 12 months
[16] those who had taken part in 0-2 SEM-related activities outside of school in 12 months prior to taking part

We also asked what students enjoyed most about Climate Schools Programme and 286 students commented (including students who have made comments like 'not sure' and 'don't know'). There was a variety of responses, with the most common response being the practicals (21%) and learning about climate change (9%) (Table 6). It is positive to see students enjoyed the practical elements of the resources, as reported in the Science Education Tracker (2024), this was one of the greatest incentives to learning science at school among students in years 7 to 9.[17]

Table 6: Frequencies and percentages of what students enjoyed most about Climate Schools Programme

Theme/code	Frequency	% of respondents
Practicals (general)	59	21%
Learning about climate change	26	9%
Practical: solar oven	18	6%
Practical: wind turbine	16	6%
Learning new information	15	5%
Teamwork	15	5%
Making/building	13	5%
General fun/enjoyment/ interesting	12	4%
Learning about climate solutions	11	4%
Activities (general)	9	3%
Making posters	9	3%
Practical: electromagnetic motor	6	2%
Debating	5	2%
The teacher delivering	5	2%
Working independently	5	2%
Learning about the world	5	2%

These findings mirror those recorded in the teacher-led discussions, as students said they enjoyed the teamwork needed for the practicals, sharing ideas with peers, and the building and designing

[17] Science Education Tracker 2023 (Wave 3). EngineeringUK and The Royal Society. www.engineeringuk.com/set

elements of the practicals. Students also enjoyed seeing tangible results of their actions, for example, chocolate melting in the solar oven they made.

There were no significant gender differences in students' enjoyment, however, when we looked at the qualitative data to explore this further, girls seem to enjoy learning about climate change slightly more than boys. Of the 26 students who enjoyed learning about climate change 15 were girls (58%). This was especially the case when we looked at students who enjoyed learning about climate change solutions as 8 out of 11 were girls (73%), compared to 27% of boys:

"The presentation and learning about how to help the planet as it is something I care about"

– female student

"About what I have learnt about the earth and its climate and also what we are doing towards the earth and how to stop harming it"

– female student

On the other hand, of the students who reported enjoying learning new information and building/making, most were boys (12 out of 15 and 11 out of 13, respectively):

"Learning about the different forms of energy generation"

– male student

"Having to actually build it and then try and test it out i found that part really cool"

– male student

The fact that girls tended to enjoy the climate change aspects more than boys also supports findings at a national level.[18] These qualitative gender findings, however, should be interpreted with caution due to the small sample size, but nevertheless provides us with an idea of why we have not found the same significant gender differences we see in evaluations of our other programmes or reported at the national level.[18]

Did Climate Schools Programme improve students' knowledge of the different types of things engineers can do in their jobs?

Encouragingly, over two thirds of students strongly agreed or agreed Climate Schools Programme had shown them different types of things engineers do as part of their jobs (67%). Increased knowledge of what engineers do was consistent across delivery and demographic factors. For example, there were no significant differences in how students who participated in practicals, lessons or both responded to this question. Similarly, knowledge gains were similar across students regardless of their prior STEM engagement, gender, ethnicity, disability status or FSM eligibility.

[18] Science Education Tracker 2023 (Wave 3). EngineeringUK and The Royal Society. www.engineeringuk.com/set

The teacher-led discussions also showed students found it interesting to learn about the different job opportunities available to engineers. Teachers said students learned how engineers use problem-solving skills to find solutions and are designing greener power sources, such as solar power and wind energy.

Did Climate Schools Programme improve students' knowledge of the role engineers play in finding solutions to climate change and help them feel more hopeful about climate change?

Knowledge on the role engineers play in finding solutions to climate change

Two out of 3 students (67%) strongly agreed or agreed Climate Schools Programme has shown them the role engineers play in finding solutions to climate change. These findings were supported by the teacher-led discussions, with teachers summarising that students discussed gaining an understanding of how engineering can contribute to solving environmental problems. Students were impressed by the power generated by the wind turbines and solar ovens during the practicals. They were also more confident in their knowledge of how wind power can be used as an alternative power source.

Students' knowledge of engineers' role in finding solutions to climate change varied according to prior STEM engagement. Those with high prior STEM engagement responded more positively to this statement compared with students with low prior STEM engagement (79% and 64%, respectively). While this difference is statistically significant, the take-home message here is that nearly two thirds of students who had done few or no STEM activities outside of the classroom in the last 12 months said they had more knowledge on this (64%), which is very positive.

Feeling more hopeful about climate change

Nearly 7 out of 10 of students said Climate Schools Programme helped them to feel more hopeful about what we can do to tackle climate change (69%).[19]

Students' feelings of hopefulness about climate change following Climate Schools Programme varied with ethnicity, with students from UK minority ethnic groups responding more positively than students from white backgrounds (91% and 69%, respectively). Due to small numbers from an already reduced sample size for this question, findings specific to ethnicity should be interpreted with caution.

Again, these findings were supported by the teacher-led discussions, with many students expressing a sense of hope after the lessons with a belief climate change can be addressed through engineering and collective effort. Students could see there are careers taking steps towards combating climate change and felt reassured engineers will help to find a solution to non-renewable power sources:

[19] It should be noted that as the question was only added mid-way through the programme, this outcome had a reduced sample of 204 responses

"The planet is in danger, but the lessons have made me feel more hopeful for the future of our planet."

– student quote from teacher in teacher-led discussion activity

However, there were some mixed perspectives around climate change from the teacher-led discussion activity. Some students did not feel hopeful about the environment even after the programme, and one student didn't believe in climate change (which the teacher believed was heavily influenced by the students' home life). This finding suggests a resource should be created to support teachers on how to tackle climate denialism in the classroom while delivering a Climate Schools Programme resource.

Nevertheless, the resources did provide new insights for some students. For example, one student said they learnt about climate change in primary school and didn't feel hopeful, but from taking part in Climate Schools Programme, they now feel that something is being done about it:

"Kind of learnt a lot in primary school, we thought that it was in bad shape and that no one was doing anything but now I know from these lessons that something is being done"

– student quote shared by teacher in teacher-led discussion activity

Did Climate Schools Programme motivate students to want to do more engineering and technology activities and find out more about jobs in engineering and technology?

Of the 8 teachers whose classes completed the student surveys, 6 of them completed the teacher feedback survey and said that they shared careers information with students while delivering the resource. This provides an approximate indication that 68% of the student sample did receive careers information as part of the resources.

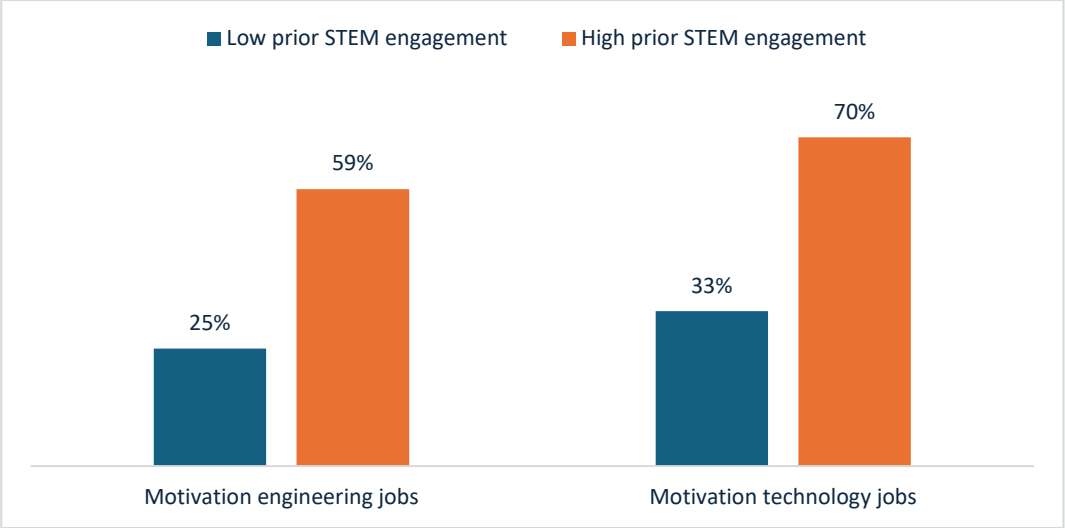
Just under half of the students agreed or strongly agreed that Climate Schools Programme made them want to:

- do more engineering and technology activities in the future (50%)
- find out more about jobs in engineering (39%)
- find out more about jobs in technology (49%)

Across the individual subject areas (of engineering and technology), just over half of the sample (52%) said Climate Schools Programme made them want to find out more about jobs in engineering or technology, including a third (36%) who wanted to find out more about jobs in both areas.

Again, students' motivation to find out more about engineering and technology jobs varied depending on their prior STEM engagement. Students with high prior STEM engagement responded more positively compared students with low prior STEM engagement (Figure 3).

Figure 3: Significant differences between prior STEM engagement groups for motivation to find out more about engineering and technology jobs



These are the largest percentage point (pp) differences between high and low prior STEM engagement groups, with a 37%pp difference for technology, and 34%pp difference for engineering. Findings from the SET[20] show that year 7 to 9 students with low prior STEM engagement are no more or less motivated than the overall student average, indicating that they could become motivated and have not yet written STEM off. This shows there is room to influence these students with low prior STEM engagement to become more motivated toward engineering and technology jobs.

Did Climate Schools Programme increase students' interest in engineering and technology jobs?

Nearly half of students said Climate Schools Programme made them more interested in a future job in engineering (44%) or technology (47%). Across the individual subject areas, 56% said Climate Schools Programme made them more interested in jobs in engineering or technology, and 34% were more interested in jobs in both areas.

Once again, there was a familiar pattern of significant differences between students with high and low prior interest in STEM, with high prior STEM engagement students responding more positively (62% and 69%) than students from low prior STEM engagement (36% and 39% respectively).

There was also a significant difference between students who took part in a lesson(s), practical(s), or both. Students who took part in practical(s) responded more positively to being interested in a future job that involves technology after Climate Schools Programme (62%), compared to students

[20] Science Education Tracker 2023 (Wave 3). EngineeringUK and The Royal Society. www.engineeringuk.com/set

who took part in both (47%), or just a lesson(s) (38%) (Figure 4). This demonstrates the value of practicals, and supports the recommendation to review Climate Schools Programme content to scope out whether there is space for more practicals in other resources (for example, English and geography).

Figure 4: Significant differences between delivery type groups for interest in a future job that involves technology

Teacher findings

What motivated teachers to take part in Climate Schools Programme?

Although teachers' motivations for participating in the programme varied, these can be summarised into 3 main themes. In essence, teachers used the Climate School Programme resources because they:

- wanted to engage students in engineering activities and give them the chance to do more practicals
- provide students with real-life examples of solutions to climate change and link these to careers
- deliver lessons that embed content related to environmental sustainability and fit into the curriculum

"The topic that we are doing with the year 8s is about climate change and I think it was a good idea to include some things not only like electricity and things like that in it, but also link it to careers and real-life examples, which I think is generally really important in sciences to link it to real life."

– interviewed teacher

What was teachers' experience of Climate Schools Programme?

Overall, teachers' experience of Climate Schools Programme was very positive. Nearly all teachers (24 out of 25, 96%) rated their experience as 'excellent' or 'good'. Teachers were asked what they liked about Climate Schools Programme, and key themes included:

- providing examples of real-life job roles in the resources
- having people from a range of backgrounds in the role examples in the resources
- being able to integrate climate information into curriculum lessons
- how the resources were engaging and relatable to students
- promoting a cross disciplinary approach on climate topics
- interactive for students and easy to follow for teachers

"I like the resources we have received, including lesson plans and the direct communication with the people who run the climate school programme. It is not just an online resource, it's interactive for both, teachers and pupils."

- surveyed teacher

As Climate Schools Programme was designed to be integrated into the school curriculum, it is positive to see teachers comment on this in their own words as well as 96% of them agreeing that the content links to the curriculum in the feedback survey. Five surveyed teachers also commented on how they were able to use the resources to link to their curriculum, which included through English lessons and integrating climate topics into STEM, arts and humanities.

What were teachers' views on student engagement?

Teachers' views on student engagement were also very positive. 24 out of 25 of the surveyed teachers (96%) strongly agreed or agreed that Climate Schools Programme was engaging for their students. In their written feedback, 5 teachers explicitly mentioned student engagement and spoke about how the resources encouraged creativity, and how examples in the resources were applicable to real life:

"I love hands on activities which keeps students creative and active, it also promotes cooperation and efficiency"

- surveyed teacher

"The practical sections were engaging and easy to follow. The students enjoyed them very much."

- surveyed teacher

Interviewed teachers also provided positive feedback on student engagement. All 7 interviewed teachers commented on how well students engaged, with one teacher commenting specifically on the effectiveness of the poster presentation element. Another spoke about how the resources were structured well, allowing students to engage easily. One teacher mentioned how students asked lots of questions around progressing into STEM careers:

"I have to say they were really engaging and they were asking loads of questions about how they can become like this and we talked about the opportunities for them having an apprenticeship"

– interviewed teacher

Teachers also commented on how the hands-on, visual element engaged students:

"And it was just brilliant, absolutely brilliant. And then with the practicals, the wind turbine practical again, I looked at it and thought, you know, is that going to last? Is that going to keep them engaged and I ended up having to tidy up the entire classroom because the students were so engaged. They just wanted to use every single minute of it"

– interviewed teacher

All 7 teachers interviewed agreed the resources met their expectations, with teachers commenting on student engagement, enjoyment and one teacher spoke to how the resources 'enthused the students about engineering'.

Additionally, one teacher from a SEN school spoke about how Climate Schools Programme engaged students who don't normally enjoy science lessons. This was supported by the teacher survey which found the majority of teachers (23, 92%) strongly agreed or agreed that Climate Schools Programme was accessible to students of all abilities. One teacher from a SEN school explicitly commented on this, saying they liked the way in which the resources were accessible:

"Every class was totally engaged the whole time, and for boys who don't really enjoy school, they've had lots of adversity, and they came into the classroom and they were engaged the whole time. They really enjoyed the practicals. They could engage and they went on to look, try and find out further things."

– interviewed teacher

Five interviewed teachers commented on gender differences they observed in student engagement when delivering the resources. Of these teachers, 2 felt girls engaged more and got more involved in the practicals, whereas one teacher felt boys were more confident when taking part in the practicals. A further teacher commented on the poster making section (in the science 1b electricity generation lesson) as particularly popular but engaged girls more than boys. The remaining 2 teachers felt there was no gender difference during their lessons. These insights from the interviewed teachers support our student findings showcasing that both boys and girls showed similar levels of overall engagement in Climate Schools Programme resources, though there were gender differences in which particular activities caught their attention (see page 15).

What were teachers' views on how Climate Schools Programme impacted students?

Overall, teachers' perceptions of how Climate Schools Programme impacted students aligned with students' self-reported impact on their knowledge, motivation and interest. Teachers also spoke about how the resources supported their students to learn more about climate change,

engineering and electricity generation. Additionally, the practical lessons allowed teachers to bring up topics with real-world applications, such as how wind turbines are made. The quote below illustrates how one teacher also asked their class to complete a task on Unifrog to understand the skills they had learned in the practicals:

"…that was brilliant. It blew their [the students] minds a little bit- that they had actually made a wind turbine or produced electricity today."

– interviewed teacher

Teachers also commented on the link Climate Schools Programme made for students with engineering and technology careers, with 5 of the interviewed teachers commenting on how students were able to get a better understanding of the job roles mentioned in the resources. A further 2 teachers spoke to how students were able to relate to the job examples provided as the jobs were based in the same area as their schools. This was echoed in the teacher survey findings, with nearly all teachers (n = 23, 92%) strongly agreeing or agreeing Climate Schools Programme highlighted a wide variety of careers in engineering and technology:

"Using real-life people to describe their job roles opened up pathways that my pupils had not thought about. Seeing engineering roles were accessible to all walks of life allows them to aim high."

– surveyed teacher

"Pupils have enjoyed the example of workers that were on slides. They could see that they can access jobs that they never dreamed at."

– survey teacher

Additionally, 21 out of the 25 surveyed teachers (84%) said they were able to share careers information with their students when delivering the resources, which suggests that teachers can be an effective mechanism for sharing careers content with students in-lesson. Additionally, teachers said Climate Schools Programme resources were beneficial for developing employability skills such as teamwork and critical thinking, providing additional evidence that our activities build students' skills.

What were teachers' views on students' feelings towards climate change

We added an interview question mid-way through the year about whether teachers got a sense of whether the resource(s) influenced how worried or hopeful students felt about climate change. Out of the 5 teachers that were asked this question, 2 said their students seemed more hopeful and inspired to help with climate change by going into engineering and technology careers. Another teacher said their students initially felt there was no point in learning about climate change, but as the lesson went on, they started thinking about how they can change it:

"I'd say that the majority of the kids, they were actually all like 'this makes sense, this is what we can do [to help climate change] and I could be an engineer, I could make this difference', and seeing the different engineers and the different lesson plans I think really helped with that"

- interviewed teacher

"There'll be jobs that they can be part of. And I think some of them felt really quite inspired by it"

- interviewed teacher

The teachers' views were supported by the teacher feedback survey, with nearly all teachers (24, 96%) strongly agreeing or agreeing Climate Schools Programme highlighted solutions to climate change and other environmental problems. Both of these support students' self-reported outcomes, with 67% saying Climate Schools Programme showed them the role engineers play in finding solutions to climate change and 69% saying it helped them feel more hopeful about what we can do to tackle climate change (see page 16).

As seen in the teacher-led discussion activity, however, students do still have mixed perspectives regarding climate change. One interviewed teacher commented on how their students had feelings of hopelessness around why they can't do more to help with climate change and half of the students weren't positive about the renewable job roles discussed in the lesson. Another interviewed teacher said they didn't get a sense of this from students and felt that this may be brought up in future lessons by the students. To understand this topic future, future evaluations could ask students and teachers what would make them feel more hopeful about tackling climate change.

Did Climate Schools Programme support teachers to feel more knowledgeable and confident when talking to students about climate change?

Alongside aiming to support young people to feel more hopeful about climate change, Climate Schools Programme aims to improve teachers' knowledge and confidence when speaking to students about solutions to climate change. Positively, 21 surveyed teachers said they were more knowledgeable (84%), and one teacher specifically mentioned this in the survey, highlighting they had learned about carbon capture:

"Good examples I also learnt about carbon capture in farming I had not previously come across this."

– surveyed teacher

23 teachers also said they were more confident in speaking to students about solutions to climate change (92%).

Did Climate Schools Programme support teachers to feel more knowledgeable and confident when talking to students about engineering and technology careers?

Beyond its impact on young people, Climate Schools Programme also aims to improve teachers' knowledge and confidence when discussing engineering and technology careers with students. In the teacher interviews, we asked how confident teachers felt when talking to students about these careers. Confidence levels were mixed with one teacher feeling very confident, 4 teachers feeling quite confident, and 2 teachers saying they didn't feel confident.

We then asked interviewed teachers which elements of Climate Schools Programme made them feel more or less confident about engineering and technology careers. Four teachers commented that delivering the resources linking to engineering and technology careers made them feel more confident in this area. Teachers also commented that having access to the resource notes made it easier to explain roles they were unfamiliar with, and another teacher spoke about how running through the resource beforehand made them feel more confident in this area:

"I thought it was very well structured. Links together really nicely and it does give you more information if you were maybe less experienced, there was plenty there for you to know what you're talking about and be able to pick that up and share those ideas"

- interviewed teacher

Surveyed teachers also felt Climate Schools Programme supported them in this area, with 19 teachers saying they were more knowledgeable about careers in engineering and technology (76%) and 20 teachers saying they were more confident in speaking to students about engineering and technology careers after taking part (80%). Additionally, 19 surveyed teachers said they were more likely to suggest students consider a career in engineering and technology after taking part in Climate Schools Programme (76%).

To support teachers' confidence in future when talking about engineering and technology careers with students, 2 interviewed teachers commented on having more continued professional development (CPD), and one teacher said to meet an engineer and/or support with organising a trip to visit an engineering site.

What are teachers' views on the cross-curricular approach Climate Schools Programme takes?

We asked teachers about their views on the cross-curricular components of Climate Schools Programme and both interview and survey findings suggested an appetite to use the resources for cross-curricular learning within schools. For example, 2 interviewed teachers had already shared the resources with their English and Geography department, and another is planning to incorporate it into a cross-curricular club. Similarly, just over half of surveyed teachers (52%) had already asked teachers in their own or other department(s)/role(s) to also deliver the resources and 12 (48%) said they are planning to do so.

When asking interviewed teachers how they would introduce the cross-curricular element of Climate Schools Programme, 2 spoke of a 'drop-down day', where a whole year group focused on a

particular theme throughout a day. Another teacher suggested having a project linked to climate change that students could work on across different lessons:

"Kids are very good at compartmentalising topic, you know, geography and history and all the rest of it. But if you can kind of make it a little bit across all of them, they kind of see how things overlap a little bit better"

- interviewed teacher

"I've looked at some of your other resources and I'm going to try as we're looking at what to do as a whole on the curriculum next year. I want to try and embed some of them into the science curriculum and use it quite regularly"

–interviewed teacher

What were teachers' experiences of receiving and using the kit boxes?

We received feedback from all 6 schools that received a kit box. Six teachers from 5 of the schools completed the feedback survey and 4 teachers from 4 of the schools took part in interviews.

Teachers' feedback on the kit boxes was very positive, with 5 of out 6 surveyed teachers strongly agreeing or agreeing their school would not have been able to deliver the practical lessons without them. This was also supported by the interviews, with 2 teachers saying they wouldn't have been able to deliver the practicals without the kit box, and the remaining 2 saying it would have been harder to deliver the practicals without them due to budget limitations in particular.

"You could just open it and start the lesson. Which was amazing because I didn't have to get permission from the technician to do it, which was amazing because end of the year is very difficult for the technician. Then it was easy for me."

– interviewed teacher

"It would have been a lot harder for me to do it [the lesson without the kit box] because I would have had to have gone and tried to get money out the science budget to buy the equipment in. So for me it made a huge difference"

–interviewed teacher

Similarly, interviewed teachers commented on how easy it was to receive a kit box, how easy it was to use, and how it took pressure off having to source the equipment themselves. In the teacher feedback survey, all 6 teachers strongly agreed or agreed the kit box meant their students had a better experience of the practical lesson than they otherwise would have.

All written survey feedback mentioning the kit boxes was positive. Teachers commented on how the kit boxes:

- reduced time and pressure of planning practicals
- enabled more students to take part
- improved engagement in the students

"The kit boxes meant that I did not have to try and source some of the equipment such as motors or corks for the wind turbine challenge, or boxes for the solar oven - this took a lot of stress and time pressures off me and it meant I was able to trial the lessons with more classes and now I am hoping to roll out the wind turbine practical through all of our classes (11 of them) and the equipment makes that possible."

– surveyed teacher

A further teacher also discussed on how the kit box will allow them to reuse and continue to deliver Climate Schools Programme practicals throughout the school year.

Overall, these findings are very positive and illustrate how providing schools with kit boxes can support them to deliver a practical. As we know, good quality practical work promotes the engagement and interest of students in science[21] and our aforementioned results suggest resources (like kit boxes) should continue to be provided to schools to encourage them to deliver practical lessons.

Conclusion

The 2024/25 Climate Schools Programme has demonstrated a strong and positive impact on both students and teachers (see Table 7 and 8 for summaries of the outcomes for each audience). Across a diverse sample, students reported high levels of enjoyment (63%) which is positive as research has shown that while students appreciate that learning about climate change and sustainability is important, they do not necessarily enjoy it as they usually focus on issues of climate change rather than solutions.[22] There were also significant gains in students' knowledge about engineering roles and their contribution to tackling climate change (67%). Importantly, nearly 7 in 10 students (69%) felt more hopeful about addressing climate change after taking part, countering the common narrative that climate education often leaves young people feeling anxious rather than empowered.

The programme also influenced career-related outcomes, with 52% of students saying that their Climate Schools Programme lesson or practical made them want to find out more about engineering and technology jobs. 56% of students also reported that their interest in these jobs had increased after taking part in Climate Schools Programme.

While students with higher prior STEM engagement showed the strongest responses, those with low prior STEM engagement also mainly reported positive outcomes, which highlights the programme's potential to reach less engaged groups. These findings mirror those reported in our evaluations of other EngineeringUK programmes as well as at the national level.[21] There were, however, substantial significant differences between high and low prior STEM engagement groups for students' motivation and interest in engineering and technology jobs. However, findings from

[21] Science Education Tracker 2023 (Wave 3). EngineeringUK and The Royal Society. www.engineeringuk.com/set
[22] Climate Change and Sustainability Education: A survey of students in England, 2024. UCL. https://discovery.ucl.ac.uk/id/eprint/10195286/

the SET[23] suggest there is room to influence these low prior STEM engagement students to become more motivated toward engineering and technology jobs.

Practical activities were particularly impactful, with students tending to mention these as what they enjoyed most about the programme. Additionally, students who participated in hands-on sessions showed greater interest in technology careers than those who only engaged in a lesson.

Teachers echoed these positive findings, rating the resources highly for curriculum alignment, accessibility, and engagement. Nearly all teachers agreed the programme highlighted solutions to climate change and a wide variety of engineering and technology careers. Furthermore, 80% felt more confident discussing these careers with students, and 92% felt more confident addressing climate change. Findings also show that teachers can be an effective mechanism for sharing careers content with students in-lesson, and evidence that the resources built students' skills. The kit boxes were a critical enabler for practical delivery, removing logistical barriers and enhancing student engagement.

Taken together, these findings confirm that Climate Schools Programme is an effective model for integrating climate and careers education into the curriculum, inspiring young people, and equipping teachers with the confidence and tools to deliver impactful lessons. Future iterations should build on these strengths while addressing gaps in evaluation coverage and exploring strategies to maintain the engagement generated amongst students with lower prior STEM exposure.

Table 7: Summary of student outcomes

Outcome measure	**% strongly agreeing/ agreeing**
Enjoyed Climate Schools Programme	63%
Motivation to do more engineering and technology activities in the future	50%
Shown the different types of things engineers can do in their jobs	67%
Shown the role engineers play in finding solutions to climate change	67%
Helped to feel more hopeful about what we can do to tackle climate change	69%
Motivation to find out more about engineering jobs	39%
Motivation to find out more about jobs in technology	49%
	% more interested
Interested in having a future job that involves engineering	44%
Interested in having a future job that involves technology	47%

Table 8: Summary of teacher survey outcomes

Teacher survey outcome	% of teachers strongly agreeing or agreeing
Climate Schools Programme was…	
Engaging for my students	96%
Had links to the curriculum	96%
Was accessible to students of all abilities	92%
Highlighted a wide variety of careers in engineering, science and technology	92%
Highlighted solutions to climate change and other environmental problems	96%
After taking part in Climate Schools Programme teachers were…	
More knowledgeable about careers in engineering and technology	76%
More confident in speaking to students about careers in engineering and technology	80%
More likely to suggest to a student that they consider a career in engineering and technology	76%
More knowledgeable about speaking to students around climate change	84%
More confident about speaking to students around climate change	92%

Demographic differences in student experiences

Encouragingly, there were no significant differences in the impact of Climate Schools Programme related to students' FSM or disability status, and only one significant difference for ethnicity whereby students from UK minority ethnic groups responded more positively compared to students from white backgrounds regarding feeling more hopeful about climate change following the programme.[23]

There were also no significant gender differences in any of the student outcomes, suggesting that Climate Schools Programme was similarly engaging for both boys and girls alike. This result is

[23] As noted in the report, this should be interpreted with caution due to the smaller sample size of students from UK minority ethnic backgrounds for the outcome

particularly positive given the gender differences in young people's interest and confidence in pursuing careers in engineering and technology reported at the national level (SET, 2024[24]) and in other EngineeringUK programme evaluations. While Climate Schools Programme was designed to engage both girls and boys, there was some suggestion from the teacher interviews that different elements of the programme worked differently when sparking interest in these two groups. However, the small sample size and having only a small amount of information about what content students were exposed to means that we cannot interpret these findings further. Future evaluations should explore the mechanisms that underpin these subtle differences in which content engaged girls and boys.

Finally, the student survey sample only included students who participated in the science resources, and we know from SET[24], that girls tend to be more interested in science than in engineering or technology, which adds a layer of complexity when interpreting the current gender findings. As this was the first year we collected student data for Climate Schools Programme, we cannot compare to any previous benchmarking data. Future evaluations should continue to explore these outcomes across different groups with a larger sample of students who have taken part in a range of Climate School Programme resources.

Key takeaways from teacher experiences

Similarly to students, teachers were very positive about their experience of Climate Schools Programme. Teachers reported high student engagement, the impact of hands-on activities and practicals, and the accessibility of the resources for all abilities.

The key elements teachers thought were particularly impactful for students included:

- the link to engineering and technology careers in the resources
- how the resources highlighted solutions to climate change and other environmental problems
- how the resources increased teachers' confidence when discussing this with students after delivering Climate Schools Programme (Table 8)

As we know, good quality practical work promotes the engagement and interest of students in science.[24] This, along with teachers' extremely positive responses about the kit boxes, suggests kit boxes should continue to be provided schools to support them to deliver practicals. In future evaluations we could explore whether the benefits of the kit boxes noted by teachers extend to additionally benefit the students.

[24] Science Education Tracker 2023 (Wave 3). EngineeringUK and The Royal Society. www.engineeringuk.com/set

Recommendations

Engage with SLT to embed the Climate Schools Programme across schools

Work with teachers and members of schools' senior leadership team to embed Climate Schools Programme resources across the 3 subjects and encourage sharing resources between departments. This will help maintain the interest generated amongst students, particularly those not previously engaged in STEM, by providing repeated touchpoints. EngineeringUK is trialling such an approach in the 2025/26 Climate Schools Programme.

Continue to support schools to leverage partnerships and incorporate role models

Connect schools with STEM ambassadors, industry professionals and career platforms to provide authentic insights into engineering and technology careers. Meeting professionals or visiting workplaces will help students visualise pathways and generate additional interest in these jobs.

Continue to embed environmental sustainability and careers messaging across other EngineeringUK resources and activities for schools

The connection between student engagement, impact and solutions-focused content related to climate change described in this evaluation echo those reported previously.[25] We should continue to embed what we have learned here in our other activities and resources.

Continue to evaluate Climate Schools Programme with a larger, representative sample

Recruiting more schools who have delivered a variety of resources (not just science) should be a priority for future evaluations. Having a larger sample for the student surveys will allow us to explore which factors are the key drivers for student outcomes and establish robust evidence of the programme's impact

Provide schools with kit boxes to deliver practicals as part of Climate Schools Programme

Preliminary findings show kit boxes supported the schools to deliver the practicals so kit boxes should be provided to more schools in future. This is also learning for EngineeringUK's other programmes and the wider outreach sector to support schools with the provision of equipment needed to encourage more participation from schools.

[25] Incorporating environmental sustainability content into outreach programmes 2025. EngineeringUK. https://www.engineeringuk.com/research-and-insights/our-research-and-evaluation-reports/incorporating-environmental-sustainability-content-into-outreach-programmes/

Review Climate Schools Programme resources to see if it's possible to include more practical lessons

As practical activities were particularly impactful, with students enjoying these and those who participated in hands-on sessions showing greater interest in technology careers, more practical lessons should be added to the Climate Schools Programme resources. The resources should be reviewed to understand if and how these practical lessons could be added to other resources (for example, English and geography resources). If added, kit boxes could be provided to support schools to deliver these new practical lessons.

Develop additional workshop-style programmes at EngineeringUK

Preliminary findings can be used to guide creation of other programmes. For example, the positive findings about practical lessons could be used to develop more workshop-style programmes at EngineeringUK to integrate practical activities to enhance student engagement and learning.

Continue to promote the programme to reach teachers who are less informed about engineering and technology careers

Preliminary findings indicate that the Climate Schools Programme has helped teachers feel more confident and informed about engineering and technology careers. These evaluation findings can be used promote the programme to teachers who may lack confidence in these areas, to show them the influence Climate Schools Programme could have on their students and themselves.

Create CPD for teachers around the importance of providing careers information and how to tackle climate denialism

Not all teachers included careers information when delivering the resources, and teachers also noted that some students displayed climate denialism. Therefore, continual professional development materials should be created for teachers, including topics such as why delivering the careers information in the resources is important, and how to tackle climate denialism in the classroom.

Appendices

Appendix 1: Summary of outcome measures across the whole sample

Outcome measure	% strongly agreeing/ agreeing	Base sample*
Enjoyed Climate Schools Programme	63%	333
Motivation to do more engineering and technology activities in the future	50%	315
Shown engineers do	67%	315
Shown engineers solutions to climate change	67%	315
Hopeful climate change	69%	204
Motivation engineering jobs	39%	315
Motivation technology jobs	49%	315
	% more interested	**Base sample***
Interest engineering jobs	44%	332
Interest technology jobs	47%	330

*sample excludes missing responses

Appendix 2: Delivery variables, year group, and prior STEM engagement differences across outcome measures for young people

Outcome measure	Lesson	Practical	Both	Base	1 resource	2 resources	3 resources	Base	Y7	Y8	Y9	Y10 & Y11	Base	Low	High	Base
Enjoyed Climate Schools Programme	48%	75%	72%	322	69%	43%	78%	322	73%	55%	77%	71%	321	57%	74%	322
Motivation to do more engineering and technology activities	28%	65%	71%	302	66%	18%	69%	302	58%	38%	67%	83%	301	41%	64%	302
Shown engineers do	54%	78%	65%	305	76%	51%	78%	305	71%	60%	82%	79%	304	64%	74%	305
Shown engineers solutions to climate change	52%	81%	77%	300	85%	47%	79%	300	83%	60%	77%	91%	299	64%	79%	300
Hopeful climate change	72%	75%	73%	194	71%	90%	72%	194	77%	71%	72%	76%	193	67%	79%	194
Motivation engineering jobs	19%	52%	59%	304	48%	11%	60%	304	44%	27%	58%	66%	303	25%	59%	304
Motivation technology jobs	33%	58%	77%	304	58%	25%	66%	304	48%	40%	66%	71%	303	33%	70%	304
Interest engineering jobs	31%	59%	43%	307	57%	23%	59%	307	49%	37%	61%	60%	306	36%	62%	307
Interest technology jobs	38%	62%	47%	300	55%	31%	66%	300	51%	38%	71%	70%	299	39%	69%	300

Note. Shaded cells indicate statistically significant differences at the $p < .05$ level.

Appendix 3: Summary of demographic differences across outcome measures for young people

Outcome measure	Female	Male	Base	UK minority ethnic	White	Base	No FSM	FSM	Base	Disabled	Non- disabled	Base
Enjoyed Climate Schools Programme	62%	69%	304	61%	66%	303	60%	74%	319	78%	60%	319
Motivation to do more engineering and technology activities in the future	43%	60%	284	53%	52%	285	42%	74%	299	70%	42%	300
Shown engineers do	70%	70%	289	69%	68%	286	64%	79%	302	75%	71%	304
Shown engineers solutions to climate change	66%	75%	284	72%	71%	281	67%	81%	297	79%	71%	299
Hopeful climate change	80%	68%	186	91%	69%	179	70%	77%	192	77%	76%	193
Motivation engineering jobs	31%	49%	287	53%	39%	285	28%	67%	301	60%	31%	302
Motivation technology jobs	43%	57%	287	61%	48%	284	40%	69%	301	66%	43%	287
Interest engineering jobs	41%	52%	291	60%	45%	290	38%	64%	304	64%	44%	304

Note. Shaded cells indicate statistically significant differences at the $p < .05$ level.