

Research into the Royal Society's Partnership Seed Grant

Sheffield Hallam University, Tomorrow's Climate Scientists

June 2026

Author: Lee Jowett

FUNDED BY A PARTNERSHIP GRANT FROM

THE ROYAL SOCIETY

Summary

While some primary schools deliver engaging climate education, many teachers lack confidence and support in connecting the topic with university expertise or children's local contexts.

Tomorrow's Climate Scientists set out to bridge this gap by connecting 25 South Yorkshire primary schools with university-based STEM professionals to deliver authentic climate and sustainability investigations rooted in local contexts. Funded by the Royal Society through a Partnership Grant Seed Award, the project ran across two cohorts between September 2024 and March 2026.

The evidence from our research shows significant impact across all participants. Children demonstrated remarkable curiosity and engagement when investigating topics relevant to their own communities - measuring air quality on their own roads, mapping invertebrates in school grounds, looking at flood risk affecting their neighbourhoods. This learning extended beyond the classroom, with children taking scientific ideas and vocabulary home to parents and siblings.

Teachers reported substantial growth in both subject knowledge and confidence, with many describing the pedagogical approach as transformative for how they deliver climate education. Several are now embedding investigative learning across their curriculum and planning to scale the approach to other year groups. The quality of partnerships between teachers and STEM professionals proved central to this impact, with the best partnerships characterised by mutual respect, flexibility, and recognition that both parties brought distinct expertise.

For STEM professionals, particularly early-career researchers, the project offered valuable development in science communication and public engagement. More established researchers reflected on being challenged to reconsider what primary-age children already know and can achieve.

Three schools have already applied for full Royal Society Partnership Grants, with others actively considering it. One researcher secured funding for a longitudinal follow-up study. The investigative methods developed during the project are spreading beyond the original network - from lichen monitoring approaches shared in Doncaster to video documentation practices adopted into researchers' wider work, and children's influence on school policy is creating lasting environmental changes, from opening windows to installing plants and increasing outdoor greenery.

The project demonstrates that when university expertise, teacher pedagogy, and children's curiosity align around locally meaningful science, the results extend far beyond the formal boundaries of a single initiative.

"The fact that they're making an effort to connect academics with primary schools is really lovely. And on the most important topic that humans have ever faced - it's a surprise that we needed to do that. But we did." **Researcher**

Acknowledgements

A huge thank you goes to the teachers and STEM professionals who volunteered their time and expertise to ensure this project ran successfully.

Research Team

Project Lead: [Lee Jowett, Climate Change and Sustainability Research Fellow](#), Sheffield Hallam University

Team: Delivery: Joelle Halliday, Senior Research Fellow, Andy Bullough, Senior Research Fellow, and [Stuart Bevins, Principal Research Fellow](#). Data collection: [Panagiota Blouchou](#), Research Fellow.

Partners: Royal Society (funders), University of Sheffield, Solar for Schools, National Education Nature Park, Energy Heroes, and Climate Ambassadors.

Background and aims

Background

Teachers in primary schools often lack confidence in their knowledge of climate science. Research exploring environmental educators' perspectives across Canada and the UK found tensions in how teachers balance raising awareness of environmental problems with avoiding overwhelming students, suggesting many feel ill-equipped to navigate these conversations effectively (Edwards et al., 2024).

At the same time, some primary-school-aged children are experiencing worry about climate change. A study of children in East London found that approximately half worried about and were aware of global warming, with correlations between worry and knowledge, and between worry and taking action (Hensler et al., 2025).

One way of addressing both teacher confidence and children's concerns is through embedding climate action in the curriculum. Research shows that when young people understand climate change and are given practical opportunities to take action, this strengthens their engagement and agency rather than deepening anxiety (British Council, 2026).

At the same time, universities in cities like Sheffield (and South Yorkshire region) hold significant STEM research capacity that rarely connects with primary schools on their doorstep. The British Science Association's evidence (British Science Association, 2022) shows that South Yorkshire has high STEM research funding (top 10 grant and income generation, ranked by local authority) through universities and industry. However, there is low cultural domain (made up of indicators including Science Week Community Grant recipients, STEM hubs and museums with science elements). Therefore, Sheffield (and South Yorkshire) is a priority area for linking children and young people with STEM researchers.

Aims

Tomorrow's Climate Scientists set out to bridge this gap by connecting 25 South Yorkshire primary schools with 26 university-based STEM professionals to deliver authentic climate and sustainability investigations rooted in local contexts. The project had four core aims:

1. To engage children in authentic scientific enquiry linked to their local environment, with the potential to channel climate concern into tangible understanding and action
2. To build teachers' confidence and subject knowledge in climate science and investigative pedagogy, recognising that educator development is essential to sustainable change
3. To support STEM professionals in developing their science communication and public engagement skills, particularly early-career researchers who often lack structured opportunities for this development
4. To create lasting connections between schools and universities that could be sustained through future funding, embedding climate science at the heart of university-school partnerships in South Yorkshire

Funded by the Royal Society through a Partnership Grant Seed Award, the project ran across two cohorts between September 2024 and March 2026.

How the project worked

Two cohorts

The project was designed to recruit 25 school and STEM professional pairs in a single cohort. In practice, the first cohort of 19 pairs launched in early 2025, with a second cohort of six pairs following in early 2026. Both cohorts completed their work within the Royal Society timeline, with final celebration events in spring 2026. Running two cohorts meant we could learn from the first group and refine support for the second. It also ensured we reached our full target of 25 schools, despite the inevitable challenges of recruitment across two school years.

TOMORROW'S CLIMATE SCIENTISTS
Royal Society Partnership Programme

A programme funded by the Royal Society

Work with a primary school in South Yorkshire to investigate an age-appropriate theme of climate change and sustainability

Audience: Researchers and Lecturers (including PhD students) in Sheffield Hallam University and University of Sheffield who have an interest in climate change and sustainability

Research topics: Air quality, energy generation, energy efficiency, flood management and biodiversity (you do not need to be an expert in any of these topics to participate)

Programme outline
February-March 2025

- CPD researcher training – 1-hour online training and 2-hour virtual workshop (delivered by the Climate Ambassadors programme)
- CPD with your allocated teacher – 1 day face to face training and planning at Sheffield Hallam University

April-July 2025 (dates to be agreed between pair)

- 3 in school activities with your teacher partner/students (up to 2 hours)
- 2 virtual activities with your teacher partner/students (up to an hour)
- Ongoing support, as required from a mentor at SHU

Autumn 2025

- Information session to apply for further funding

Researcher commitments

- Researcher to attend online and face to face training sessions
- Participate in 5 activities with their teacher partner
- Meet with a mentor mid-programme
- Engage with surveys and evaluation of the programme

• Researchers will be asked to select preferred training dates and a preferred research topic on signing up.

• Researchers will be able to claim up to £75 for travel expenses, however we are unable to fund academic time. You will need to sign up to become a Climate Ambassador and complete a DBS check.

• Further funding is available to apply for a Partnership Grant from the Royal Society once you have completed this programme.

Sign up using this [link](#) or QR code by **Friday 31 Jan 2025**

CLIMATE ACTION

CPD

SIGNPOSTING

ASSISTANCE
HELP
SUPPORT
GUIDANCE
ADVICE

Working with partners

CLIMATE AMBASSADORS

National Education Nature Park

ENERGY
Herbes

solar for schools

FUNDED BY A PARTNERSHIP GRANT FROM
THE ROYAL SOCIETY

Figure 1. Example promotional materials provided to schools and researchers

Training and support

Teachers attended an initial online briefing setting out expectations and requirements. All teachers and STEM professionals then attended a full-day training event at the start of the project.

The morning covered climate science, climate pedagogy based on the research informed climate education (RICE) framework developed at Sheffield Hallam, and policy context. The afternoon gave participants a chance to explore the investigation kits and equipment, meet

their school partner, and begin planning their project. Most participants described this day as a highlight, for both the knowledge and the sense of connection it created between schools.

The research team at Sheffield Hallam University provided ongoing mentoring and support throughout, including access to investigation kits and equipment, guidance on the scientific process, and help with logistics. Several participants noted they could reach out with questions beyond the formal training and receive bespoke support when needed. All resources and materials were provided online afterwards on our [blog pages](#).



Figure 2. Teachers and researchers participating in teambuilding activities during the training sessions

Climate Ambassadors and project partners

STEM professionals were registered as [Climate Ambassadors](#) through STEM Learning, the national network supporting STEM engagement. Registration included a DBS check for safe working with children and access to training resources through the Climate Ambassador programme.

Registration was an important safeguard and gave STEM professionals recognised status within schools. However, the DBS process created delays for some participants, particularly those new to working with children. The project lead took on the role of registered DBS checker to resolve this, but it represented an additional administrative demand that future projects should plan for. Some participants also found the relationship between Tomorrow's Climate Scientists and the wider Climate Ambassador framework confusing. Clearer initial communication about how the two elements fit together would help in future iterations.

The project drew on external partners to enrich the investigations. [Solar for Schools](#) provided kits and training for renewable energy, allowing children to explore solar PV in practice and model solar potential using online tools. The [National Education Nature Park](#) provided biodiversity resources. University of Sheffield academics offered specialist input on air quality monitoring and CO₂ sensor selection. [Energy Heroes](#) contributed to the energy efficiency strand, though fewer schools took this up than other investigation themes.

Investigations

Each school and STEM professional pair chose their investigation topic collaboratively, with support from the research team. The 25 schools took on a broad range of topics, reflecting different contexts across the city and region. Schools in areas with poor air quality used CO₂ monitors to investigate their own classrooms and lichen as natural indicators in the grounds. Schools with outdoor grounds investigated invertebrate diversity and biodiversity. Others explored thermal energy loss, solar power, sustainable drainage, and local flooding and weather patterns.

What stood out was how much schools rooted the science in their own place. Children measured air quality on their own road, mapped invertebrates in their own grounds, looked at flood risk affecting their own neighbourhood. This wasn't incidental. It was central to the project's design and, as the evidence shows, central to why children engaged.

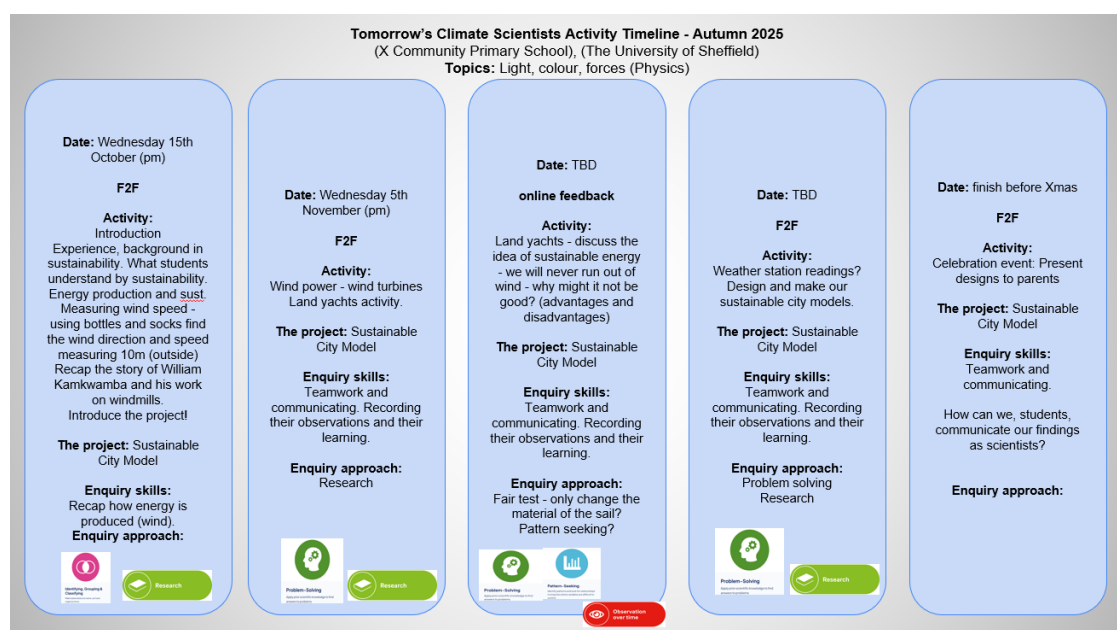


Figure 3. Example of planning document completed by teacher and STEM professional

Celebration events

The project ended with two celebration events, one for each cohort, hosted at Sheffield Hallam University. These brought teachers and STEM professionals together to share what each school had achieved, hear about investigations across the project, and reflect on what they had learned. Participants consistently described these events as a highlight, both as a moment of recognition and as a chance to be inspired by what others had done. Several said it motivated them to run the project again or take on a different investigation next time.

Many schools also held their own celebrations, often inviting parents and families to see what their children had been working on. These events took different forms - some informal showcases, others more structured presentations - but they shared a purpose: giving children the chance to be the expert and share their science with the people who matter most to them.



Figure 4. Showcase and celebration event at Sheffield Hallam University

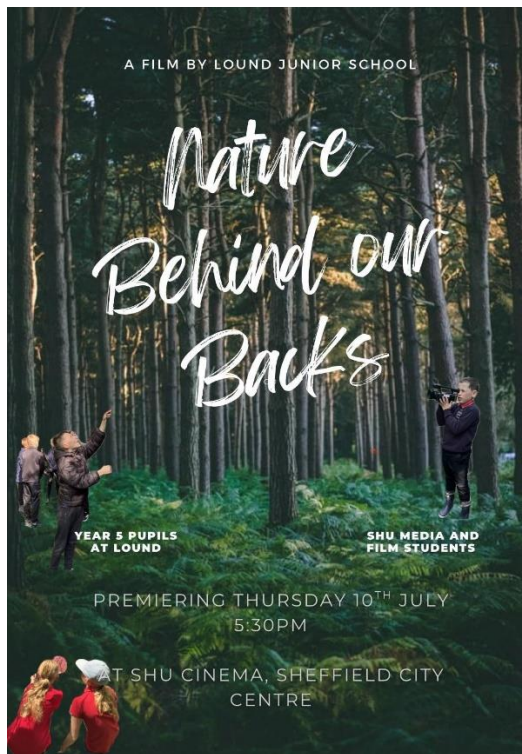


Figure 5. Film poster from one school's celebration (used with permission).

What we found

Anonymous surveys were sent to all participants. Those who completed the survey were invited to participate in an online interview conducted by a member of the research team at Sheffield Hallam who had not been involved in project delivery. Eight interviews were carried out with teachers and STEM professionals, with 12 surveys completed in total. Gift vouchers were provided as a thank you for participation. Ethics approval was obtained under ER78155981 through Sheffield Hallam University.

Together, these interviews and survey responses provide a rich picture of what the project achieved, what worked well, and where there is room to grow. The findings are organised below by theme.

1. Pupil curiosity and engagement

Across every interview and most survey responses, children's enthusiasm and curiosity stood out as one of the project's most powerful outcomes.

"You don't see them [invertebrates], right? And then you see them in a pitfall trap and it's like, oh my god, look, it's loaded. I think it's really useful for them to actually see there is a huge diversity of life, even if you can't immediately see it." **Researcher, invertebrate diversity project**

This engagement rarely stayed inside the classroom. Children took their learning home, told their parents, and in several cases sparked interest from siblings and other year groups. One teacher described a parent stopping her on the way to school to say their child had been talking about foxes and night vision cameras all week. Survey responses captured the same pattern vividly.

"We were amazed to see the badgers, foxes, squirrels and other animals. The children told their classes about the rhythms and routines they observed - the badger, fox and squirrels all had very set night-time routines and patterns." **Survey respondent, teacher, biodiversity and wildlife camera project**

"The children would come into school having been to the park at the weekend to collect lichen samples." **Survey respondent, teacher (air quality)**

Children's engagement was deepest when the science felt relevant to their own lives. The air quality projects found powerful local hooks: the road outside school, the traffic at drop-off time, the fire at a nearby building showing up on the monitor. One researcher described a particularly vivid moment of scientific discovery.

"One day was warm, windows were open. They lit a fire at the place over the road and the indoor air quality monitors were alarming. The children wrote down: there is a fire over the road. So we plotted the results and saw the anomalies - and they connected that to outdoor pollutants affecting indoor air quality." **Researcher, air quality project**

Children's engagement was also tracked over time within individual projects, with several participants noting a clear development in scientific thinking as the investigations progressed.

"I watched their critical analysis skills and ability to develop their own questions evolve and flourish. Every single time I went to that school, I started with: what questions have we got? And I watched that change." **Researcher, air quality project**

A survey response highlighted something that the curriculum often misses: the way that open-ended investigative projects can create space for children who struggle in other contexts to find their footing.

"Two of the children were working below age-related expectations in maths and English, but this project offered them the platform to be really successful and be heard - something that helped to build their self-esteem." **Survey respondent, teacher (biodiversity)**

"By the end they could tell me what human health was, what climate health was, how indoor air quality can impact both, and what changes we have the ability to make locally. For year 4, I think that's coming on loads." **Researcher, air quality project**

Researchers who had not worked with primary-age children before also noted something they had not anticipated: the way that enthusiasm, once lost, can be quickly rekindled with the right conditions.

"By the time they get to year four, they're like, can't be bothered. But when prodded and given encouragement, they very quickly gain that interest. It's surprising how quickly that happens." **Researcher, invertebrate diversity project**



Figure 6. Pupils from one school participating in a mad-hatters tea party and finding out which animals might come to tea

2. Teacher confidence and professional development

All three teachers interviewed described significant growth in their own confidence and motivation as a result of the project. For some this was primarily about subject knowledge; for

others it was about finding new ways to structure learning, present findings, or involve children in genuine enquiry.

"It built my confidence a lot in the knowledge of the topic and being able to deliver that to children. On the strength of this project, I went to a climate conference at Sheffield Hallam, and I've unofficially taken on the role of eco ambassador at school." **Teacher, air quality project**

The confidence gain was also about recognising that the project could be sustained independently. Several teachers described feeling equipped to run investigations again without the STEM professional, representing a shift in capacity rather than dependency.

"We are able to do it now without F, much as we'd love to have her in again. My colleague and I think, actually, we could do that again. We've got it all recorded, so we can replicate it quite well." **Teacher, air quality project**

"This project has longevity. We are now able to repeat the project ourselves and adapt what we have learnt. This will have benefits for years to come."

Survey respondent, teacher (air quality)

Several teachers noted that what they gained went beyond the topic itself. One described taking the child-led presentation format, where children presented their findings to parents as the expert, into geography and history lessons. Another described a new confidence in using the school's outdoor space and has since planned a whole-school outdoor day bringing every year group from reception to Year 6 outside.

"It has opened my mind into ways we can include climate education in the primary curriculum in a very child-centred and investigative way. Both I and other members of staff who helped with the project are much more motivated to try this kind of thing again." **Survey respondent, teacher (air quality)**

Teachers who took part also found themselves better placed to make the case to senior leadership for time and resource. One noted that the supply cover funding included in the project made it meaningfully easier to ask for permission to participate, because it gave her something concrete to offer her headteacher alongside the enthusiasm.

"Next year I'm going to be rolling out climate literacy lessons for reception children, because there isn't really anything out there for that age group. I'm going to plan something half-termly that underpins everything we've done this year." **Teacher, biodiversity project**

3. STEM professional development and confidence

For STEM professionals, the project offered something different from their usual working environment: an audience that was unreservedly curious, and a challenge requiring them to think carefully about how they explain what they know. Several researchers described this as one of the most personally rewarding aspects of the programme.

"If I ask a question to 80 undergrads, not one person answers. If you ask a Year 4 class, the whole room puts their hand up. The kids are just interested. I find that, honestly, wonderful." **Researcher, water and flooding project**

"Why have knowledge if you can't pass it on? I've always believed that. And different ways to pass it on - that's what I got a lot out of this." **Researcher, air quality project**

"I felt empowered, really, that science could be used as the medium for these children to take pride in their local area and feel like they can make a difference."

Researcher, air quality project

For those earlier in their careers, including PhD students and postdoctoral researchers, the project built confidence in public engagement and science communication that they have carried into other work. One PhD student went on to volunteer with other schools after the project finished, and now has experience working with Year 2, Year 4, and Year 6 classes. Another described taking the practice of producing a short video to document the journey of a project into entirely different areas of their research work.

"I am one of those people that enjoys being in schools, enjoys being in classrooms, engaging with students. I find that very, very motivating. And I needed that. Honestly, this programme was a great opportunity to reconnect." **Researcher, wind and sustainability project**

More established researchers reflected on how the experience had challenged their assumptions about what children at this age already know. Learning to pitch across the wide range of abilities in a single primary classroom was described as both humbling and valuable.

"I hadn't appreciated how broad the knowledge base of children of that age is. Some of them I could have taken into my undergraduate classes and they'd have been fine. Others were all keen, but no. I have nothing but admiration for teachers who do that every day." **Researcher, water and flooding project**

"Although my motivation to engage in these issues did not increase, my frustration that I couldn't do more did. Working with this age group and experiencing their enthusiasm was very fulfilling personally." **Survey respondent, STEM professional, water and flooding**

For those who have been working on climate change for many years, working with children represented something significant: a chance to invest in a generation that will live with the consequences of decisions already made, and to help them engage with that future with curiosity and hope.

4. The quality of partnerships

The partnerships between teachers and STEM professionals were at the heart of the project, and the evidence suggests that when they worked well, they were transformative for both parties. The best partnerships were characterised by mutual respect, flexibility, and a sense that both people brought something distinct and valuable.

"She recognised that I was an expert in research design and climate science. I recognised that she was a specialist in understanding Year 4. Both of us drew out what that could look like together." **Researcher, air quality project**

"She was really keen to learn about the teaching side of it - how you communicate science to children and in what way. So we were able to help with that. It kind of worked both ways." **Teacher, air quality project**

The practical side of partnerships also mattered. One researcher described an early conversation about what the teacher needed from the collaboration in terms of curriculum evidence, and how offering to help with that immediately changed the dynamic for the better.

"I recognised that she had to produce some learning outcomes for her science lead. And I said, I'm really keen to feed into that for you - I want to provide you an evidence portfolio of what we've done here. And straight away for her it was like, well, that would be amazing." **Researcher, air quality project**

"The children looked forward to Kaisu's visits. We decided to do all our sessions in person, which gave the children the opportunity to form a relationship with her - and we know that always has an impact on engagement and learning outcomes."

Survey respondent, teacher (biodiversity)

Not every partnership worked as smoothly. One recurring issue was uncertainty about roles in the classroom, with some STEM professionals wanting to lead sessions but finding themselves in a more supporting role. Setting clearer expectations with teachers upfront about what STEM professionals can offer, including that many have significant teaching experience in their own right, would help address this in future.

The project also trialled involving a small number of undergraduate students (supported by their tutors), which sat outside the original design but offered useful learning. The experience was mixed. One of the students was enthusiastic, knowledgeable, and invested, and the schools they worked with valued the partnership. The second proved more challenging, though on reflection this was less about career stage and more about a limited subject knowledge base in the specific investigation area - a reminder that matching on expertise matters regardless of career stage.

The trial suggests that involving students can work well with the right person and the right match, but it needs careful thought. Coordinating around academic terms, dissertation periods, and commitments added logistical complexity for schools, and what a postgraduate researcher or academic brings is simply different from that of someone earlier in their studies.

"They were both really good, but I felt like I led everything and they followed. It was great to have two people working with the children, but logistically it was hard, and they were students finishing their degrees." **Teacher, biodiversity project**



Figure 7. Pupils from one school listening to instructions before collecting field data.

5. Capacity and logistics

The biggest practical challenge across the project was school capacity. Primary schools are under significant pressure, and carving out time to run an extended investigation alongside everything else in the timetable was genuinely difficult. This needs to be named honestly, because it explains why some schools were unable to complete all planned activities, and because it is a structural feature of the education system rather than a failing of any individual school or teacher.

Every school that joined the project completed something. No school disengaged entirely, which in a sector under the pressures primary schools currently face, is a real achievement.

"We've got a very packed timetable. It was stressful at times trying to squeeze it in. But we did make time for it, and I was genuinely glad we did. The learning they got from this is worth so much." **Teacher, air quality project**

"The only barrier we found was time - fitting it into a very packed timetable was a challenge. We would have loved to have spent more time on it."

Survey respondent, teacher (air quality)

For STEM professionals, particularly those based in universities, the challenge was a different kind of capacity: academic workloads, semester teaching commitments, and the mismatch between university and school calendars. Several researchers noted that the spring term, when school time is more available, coincides with the heaviest teaching periods in higher education.

"I'm running at about 110% of my work plan, and 70-80% of that falls in semester two. So I'm doubly overwhelmed. There's nothing anybody can do about that." **Researcher, water and flooding project**

"I was quite nervous to go to the school, especially as it wasn't in Sheffield. But once I knew I was going alone, I just started to prepare. And they [research team] helped me bring the kit to the class. So, it was all sorted." **Researcher, solar energy project**

Researchers on fixed-term contracts faced an additional layer of uncertainty. If a contract ends partway through a project, continuity is lost on both sides. This affected several participants' ability to take next steps, including applying for Partnership Grant funding, even where the desire to do so was strong.

6. Legacy, local connection, and what comes next

One of the most positive things about the evidence is how much has already happened beyond the formal boundaries of the project. Schools have made changes to how they use outdoor space. Teachers have embedded new approaches across the curriculum. Researchers have taken methods developed during the project into their wider work. And some of the most direct evidence of the project's reach comes from children themselves.

"I showed a YouTube video someone had filmed of the local area flooding from a drone. You could hear the ripple go through the class: there's my house. They could see their own houses. And then they were engaged - because they understood this was about where they live." **Researcher, water and flooding project**

Children have taken scientific vocabulary, methods, and questions back to their parents and communities in ways that were often unprompted and surprising.

"I observed children trying to make a green corridor with grass and leaves for woodlice across the playground later in the year, using information they had gained from their STEM partner." **Survey respondent, teacher (biodiversity)**

"The children are already planning an assembly and looking at next steps across the whole school moving forward." **Survey respondent, teacher (air quality)**

Three schools have so far applied for full Royal Society Partnership Grants, with others considering it. One researcher has already had a Partnership Grant approved and is planning a longitudinal invertebrate diversity study with wildflower turf installation, tracking changes in species abundance over two academic years.

"We started small and then it was like, oh, but we could do this, and this, and this. It felt like a taster of what we could do. I'd love to give that opportunity to more children, not just two classes." **Teacher, air quality project**

The regional reach of the project is also extending beyond the original schools. One researcher has shared the lichen air quality monitoring approach with a school in Doncaster, taking a method developed in a Rotherham classroom into a new community.

"The Board of Governors contacted me to say we loved that film. This approach showcasing a journey through video rather than a report, I've now taken into other projects and other areas of my work entirely." **Researcher, air quality project**

"The children have come up with ideas they discussed with the headteacher: they want windows open in every classroom, they want every classroom to have an indoor plant, they want more outdoor greenery. Things like that will be beneficial to the school in the long run." **Survey respondent, teacher (air quality)**



Figure 8. Pupils' film showcasing air quality research in school

7. Programme experience - CPD, research team support, and celebration events

Participants were consistently positive about the programme: the quality of the initial training day, the responsiveness of the research team, and the value of the celebration events at the end of each cohort.

"You came away at the end of that day ready to go, quite inspired to get started. The way the day was split up was really good, and I loved hearing what everyone else was planning to do." **Teacher, biodiversity project**

"At no point did I wonder what I was meant to be doing. The pairing process worked well because I was paired with a school local to me. The training was really useful - it gave us a great background on the project itself." **Researcher, invertebrate diversity project**

The research team's ongoing support was valued throughout. Participants could access bespoke help when needed, and several specifically mentioned the project lead's responsiveness in going beyond the formal structure to help solve problems.

"Many thanks to Sheffield Hallam and the research team in particular for being there whenever we had a question and ensuring we had all the resources required to deliver this brilliant programme." **Survey respondent, STEM professional (air quality)**

"Anything I reached out to the team for, beyond what was offered at the training, they were able to deliver bespoke. Absolutely fine." **Researcher, air quality project**

The celebration events at the end of each cohort received strong praise from participants. Hearing what other schools had done was consistently described as motivating and often surprising, with many saying it made them want to do the project again.

"You do your own project, but what I enjoyed was hearing about everybody else's projects, because it's really inspiring. And then when you come away from it, you think: I want to do something else next time." **Teacher, air quality project**

"I think it was really well organised, and I personally found it inspirational. I don't think there is much we could do to improve the project." **Survey respondent, teacher (biodiversity)**

"I can't see why any school would not want to get involved. From the beginning to the end it was fantastic. The way it rounded up with the event at the end, the timeframe - it was all brilliant." **Teacher, biodiversity project**

Smaller suggestions for improvement were also offered. Some participants would have valued a brief preview of the available equipment and investigation options before the training day. One STEM professional whose partner was absent from the training day noted this created a delay in getting started. Building in a contingency for late joiners would strengthen future cohorts.

Reflections and learning for the future

Projects like this one work best when they are honest about what was difficult and what went well. The following reflections are offered as a contribution to anyone thinking about running a similar programme.

- Setting role expectations clearly at the start of each partnership would help. Some STEM professionals wanted to lead sessions and found themselves in a supporting role; others were happy to support but were not sure what was expected of them. While built into the training day, a further brief structured conversation between each pair, about how they envision the sessions working would reduce this uncertainty.
- DBS checks need early planning. The time taken to process checks caused delays for some STEM professionals and created anxiety for participants who were not sure whether they could enter a school without a cleared check in place. Building this into

the timeline from the very start and ensuring participants know exactly what to expect and when, would reduce friction.

- The university and school calendars do not align, creating practical difficulties, particularly during term-end periods and university exam seasons. Future projects should plan the most intensive activity for the autumn term window, when both systems are most aligned.
- Fixed-term contracts in higher education create real barriers to continuity. Researchers who want to take next steps, including Partnership Grant applications, may find themselves unable to do so if their contract has ended. Projects should think about how to support this transition, perhaps through connections to permanent staff who can co-apply.
- Undergraduate STEM professionals bring real value, including enthusiasm, fresh perspectives, and personal development benefits for the students themselves. But schools should be matched thoughtfully, and the expectations on both sides should be honest about what an undergraduate can realistically offer compared to a postdoctoral researcher or academic member of staff.

Conclusion

The project set out to connect children in South Yorkshire primary schools with university-based STEM professionals working on climate and environmental science. Over the course of two cohorts, 25 schools and 26 STEM professionals engaged seriously with this work, and the evidence shows what that produced.

Children who had never thought about air quality are now asking their parents about it. Teachers who felt uncertain about delivering climate science are now leading it in their schools. Researchers who had never worked with primary-age children are now returning to schools as volunteers. Three Partnership Grants are already in progress, with others being considered. The investigative methods developed during the project are spreading into new communities and research areas.

What made this work was straightforward: the project was well designed, well supported, and matched a real need. The schools, researchers, and children involved brought serious commitment to it.

We are grateful to the Royal Society for funding this work, and to every school, researcher, and teacher who participated in Tomorrow's Climate Scientists.

References

British Council. (2026). *From concern to action: what are young people telling us about climate change?* Retrieved from <https://www.britishcouncil.org/voices-magazine/concern-action-what-are-young-people-telling-us-about-climate-change>

British Science Association. (2022). *Mapping and analysis of science engagement and inequity in the UK*. Final report prepared by London Economics.

Edwards, R. C., Larson, B. M. H., & Clayton, S. (2024). Navigating eco-anxiety and eco-detachment: Educators' strategies for raising environmental awareness given students' disconnection from nature. *Environmental Education Research*, 30(6), 864–880. <https://doi.org/10.1080/13504622.2023.2286929>

Hensler, I. I., Patel, K., Michalek, J., Ritchie, C., van Loggerenberg, F., Ougrin, D., & Lau, J. Y. F. (2025). Eco-anxiety, knowledge and action in primary school-aged children in East London. *BMJ Paediatrics Open*, e003324. <https://doi.org/10.1136/bmjpo-2025-003324>

Appendix: Participating schools

The following schools took part across both cohorts. All schools are listed anonymously in the main body of this report. School data on free school meals eligibility, SEND, and English as an Additional Language are drawn from national published data and are included here to indicate the breadth of contexts represented across the project. Data from 2024-2025.

School	LA	FSM %	SEND %	EAL %	Cohort
Arbourthorne Community Primary School	Sheffield	65.6	36.0	26.5	1
Dobcroft Nursery & Infant School	Sheffield	1.9	13.3	7.0	1
East Dene Primary School	Rotherham	56.3	17.0	43.1	1
Emmaus Catholic CofE Primary School	Sheffield	47.8	22.4	34.8	1
Grenoside Community Primary School	Sheffield	20.4	9.5	4.3	1
Hatfield Primary School	Sheffield	56.6	24.9	42.9	1
Lound Junior School	Sheffield	20.5	12.6	8.4	1
Meynell Primary School	Sheffield	70.1	30.6	21.8	1
Mosborough Primary School	Sheffield	17.5	8.2	3.8	1
Porter Croft C of E Primary Academy	Sheffield	34.0	15.1	60.8	1
Pye Bank Primary	Sheffield	54.6	17.8	69.7	1
St Ann's Catholic Primary School	Sheffield	13.6	27.2	6.8	1
St Mary's CE Primary School	Sheffield	33.0	8.3	41.3	1
St Thomas More Catholic Primary	Sheffield	21.8	15.5	18.9	1
St Thomas of Canterbury Primary School	Sheffield	15.1	16.2	14.9	1
St Wilfrid's Primary School	Sheffield	5.9	16.9	7.9	1
The Rowan Primary School (SEND specialist)	Sheffield	48.5	100.0	26.7	1
Waverley Junior Academy	Rotherham	10.6	26.4	18.8	1
Windmill Hill Primary	Sheffield	21.3	10.5	2.3	1
Ecclesall Primary School	Sheffield	4.5	11.6	12.3	2
High Green Primary School	Sheffield	16.3	15.9	0.5	2
Charnock Hall Primary Academy	Sheffield	21.6	16.5	5.7	2
Mundella Primary School	Sheffield	12.8	7.3	0.7	2
Thorpe Hesley Primary School	Rotherham	8.9	18.3	2.4	2
Richmond Hill Primary Academy	Doncaster	11.5	13.2	4.0	2
National average (for comparison)		25.9	14.1	22.8	

Note: FSM = free school meals eligibility (ever 6). SEND % combines support and EHCP figures. The Rowan Primary School is a specialist SEND school, which accounts for the 100% SEND figure. National averages are included for context.