

Cambridge Future Museum Voices 2023

Final Report for the Isaac Newton Trust, January 2024

Cambridge Future Museum Voices is an innovative outreach programme from Clare College and the Museum of Zoology that uses the museums and collections at the University of Cambridge to provide academic enrichment to young people from underrepresented backgrounds. The core of the programme was a week-long residential in April 2023 for nineteen Year 12 students. During their stay, students co-curated an exhibition, *Tangled Planet*, at the Museum of Zoology on the effects of climate and environmental change on the natural world and people. The exhibition opened on the 7th of October with a private launch event for participants and their guests and ran until the 22nd of December 2023. The residential, exhibition, and all associated activities, board, and travel were fully funded by the Isaac Newton Trust.

This report covers the details of the programme, the total expenditure, an evaluation of the programme, and considerations for future projects.

Details of programme

Advertising and participant selection

The programme was promoted nationwide to students and teachers through University and College newsletters and on the University outreach events page from December 2022 until applications closed on the 31st January 2023. We received 52 valid applications for the programme and made 20 offers based on the strength of the applicants' 250-word statements of interest, as well as the University Widening Participation criteria. We also aimed to include students from a range of subject interests, genders, and UK regions and took these factors into account when selecting students. To support all students as they prepared their university applications and personal statements, we included feedback on each student's statement of interest in application outcome emails.



Figure 1. Residential participants exploring the roof of the David Attenborough Building, and the logo of their exhibition, *Tangled Planet*.

We made 20 offers and 19 students joined the programme. One student withdrew before the residential citing a clash with a personal commitment. Of the 19 participants, 5 were eligible for Free School Meals or had been within the past six years, 8 had no parental history of higher education, and 11 self-identified as an ethnicity other than White British. All participants attended maintained schools or colleges and 13 of the 19 participants met University Widening Participation criteria (Free School Meals eligibility or a home postcode flagged for POLAR4 Quintile 1 or 2 or for IMD Quintile 1 or 2).

Applications came in from across England, including a number from regions currently underrepresented at the University, and we were pleased to offer places to students from as far afield as Cumbria, Derby, Devon, Liverpool, and Northumberland. However, we received no applications from Northern Ireland, Scotland or Wales and a considerable proportion were from London. The home postcodes of applicants (in blue) and participants (in yellow) are shown in Figure 2. Several students commented that the option of an extra night of accommodation allowed them to participate even though they had long journeys to Cambridge; this has important appeal for young people in regions that are less frequently represented at Cambridge, and we intend to publicise this part of the programme more prominently in the future.

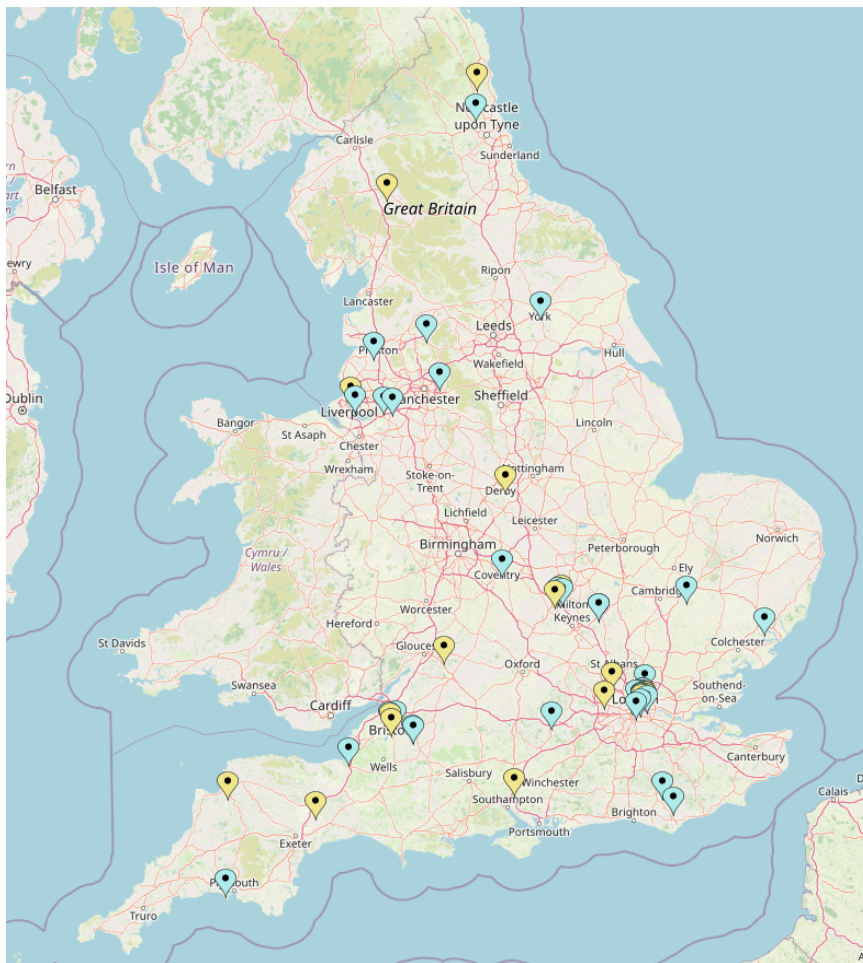


Figure 2. Locations of students applying for (blue) and attending (yellow) the programme from across the UK.

Warm-up Webinars

The programme began with three hour-long webinars in February and March 2023 introducing participants to the University of Cambridge and its application process, current research into nature-based solutions to biodiversity loss, and the collections and aims of the Museum of Zoology.

We obtained parental/guardian permission to allow students to participate live in the final two webinars and saw excellent engagement, with questions exploring what the role of a museum should be in influencing public opinion on issues such as climate and environmental change, and stories around biodiversity loss. Students provided verbal feedback that being given context about the University and Museum in this way gave them solid foundations on which to begin the programme. It was also useful for us to start getting to know the students and gauge their areas of interest and levels of knowledge about the University and Museum.

Residential Programme

The residential took place from Tuesday 11th to Saturday 15th April 2023. Three students with particularly long journeys travelled to Cambridge on Monday 10th April to stay overnight in the College.

The residential programme began with behind-the-scenes tours and talks with curators and scientists at the Museum of Zoology, Museum of Archaeology and Anthropology, Botanic Garden, Cambridge Herbarium, and the Cambridge Conservation Initiative space within the David Attenborough Building. Students were invited to reflect on the influence of collectors that are inherent in natural history museum collections, and to reflect on how museums and universities can engage with the public, by shaping attitudes towards the natural world.

The Museum of Zoology gave students food for thought as they uncovered the hidden histories behind museum collections, including gender biases in displays of birds, the footprint left by colonial-era collectors on indigenous people, and even the insidious influence of the foxhunting



Figure 3: students arriving in Cambridge and being given their first introduction to the Museum of Zoology.

lobby in contemporary mammalian displays. In the evenings, short interactive workshops with the students provided space for them to reflect on the content of the day. The results of these workshops provided a starting point on the last day of the residential when considering the themes and content of the students' own exhibition.

The residential culminated in the students co-curating their exhibition for installation in the Museum of Zoology. Thirteen experts from varied disciplines including medicine, behavioural ecology, conservation, the history of science, and public engagement presented a range of specimens, from coral reefs to Comma butterflies, from the Museum. The students then drew everything they had learnt over the week together with their personal passions for the natural world to begin developing their own exhibition. This took the form of a day's workshop, run by Roz Wade, where students worked in small groups to develop ideas in semi-structured sessions. Students were encouraged to use tools, such as notebooks, flipcharts and post-it notes to develop their thinking and share ideas with the class. This ensured that written material, and associated sketches and diagrams captured ideas as they emerged. The group agreed that they wanted their exhibition to encourage the audience to reflect on their own relationship with the natural world after they left the Museum, so they came together to write an introductory message and prompts for reflection, as well as deciding on the title and appearance of the exhibition and presenting their ideas to an expert audience for feedback.

The resulting exhibition concept, *Tangled Planet*, focused on the interconnectedness and interdependence of humans, the earth's biodiversity, and the changing environment. Each student chose one specimen in the Museum's collections that they felt told a particularly compelling story about biodiversity loss and the human impact on the planet and wrote a new interpretation of that specimen to convey this story.



Figure 4. Students seeing some of the wealth of specimens in the Museum of Zoology stores, and presenting their ideas for the *Tangled Planet* exhibition.

Exhibition

Over the summer, a specialist design agency, Paper Rhino, took the design ideas developed by the students, along with the text they had written, to create the graphics for the exhibition. This included the development of a logo based on sketches the students drew in the workshops, labels incorporating their text and, in places, their illustrations, and audience reflection panels in the galleries to collect the impact of the exhibition on museum visitors. The students' text was nearly all maintained with only a minimum of edits to remove typos and ensure standardisation in format. We remained in email contact with the students to share the agency's designs and allow students to vote on the final design decisions. On Saturday 7th October, 17 students and 45 guests returned to Cambridge for a VIP exhibition launch event, featuring an interactive talk by Professor Lynn Dicks, lunch in Clare's Great Hall, and an exclusive after-hours viewing of the new exhibition, attended by over 60 people.

The Museum blog post containing the full exhibition labels written by the students can be found [here](#). The exhibition ran from the 7th of October to the 22nd of December and was visited by 24,000 people in total, of whom 1170 were in school groups.

After the exhibition, one of the students commented: "Thank you for such a fantastic day for the exhibition launch. I really enjoyed the talk, and it was great to catch up with my friends and finally see the finished exhibition."



Figure 5. Some of the displays, written by participants, forming part of the Tangled Planet exhibition.

Evaluation

Our approach for monitoring the impact of the programme on the students consisted of targeted surveys for participants at the start of the residential and at the end, including written and more quantitative feedback, feedback and guided reflection each evening of the residential, and the recording of casual views and responses throughout the course.

In the pre- and post-residential written surveys, students were asked to use a six-point Likert scale (very likely - likely - neither likely nor unlikely - unlikely - very unlikely) to rate how likely they were:

- To apply to university
- To apply to Cambridge
- To apply to a university course in biological or environmental sciences
- To pursue a career in the biological or environmental sciences
- To pursue a career in museum curation

These pre- and post-programme forms also asked students to provide three words they would use to describe a) the University of Cambridge and b) museums.

Finally, we provided free text boxes for participants to ask questions and describe any expectations they had for the programme before the residential, and to describe what they learnt, enjoyed and

would change at the end of the programme. We did not request feedback from parents and guardians, but did receive a number of emails from them after the programme concluded, which informs our understanding of student experiences.



This allowed us to specifically assess how student views changed throughout the course, and provided detailed written responses and contextual information to help us interpret these changes.

Figure 6. Students examining specimens in the Insect Store of the Museum of Zoology.

Pre- and post-residential survey on participants' attitudes towards university, Cambridge, and careers

All students were very likely (17) or likely (2) to apply to university, and this didn't change from before the course to after, perhaps reflecting the timing of the residential before the final third of Year 12, when most students have begun planning their next steps (Figure 7). Students were more likely to apply to Cambridge after the course than before (from 14 very likely or likely before to 17

very likely or likely after the residential) and more likely to apply to a course in biological or environmental sciences (from 12 very likely or likely before to 14 very likely or likely after the course) (Figure 7). The number of students answering 'neither likely nor unlikely' decreased (or remained at zero) in each of the three prompts, which is an encouraging sign that the programme helped students come to informed decisions about their future choices at a critical time in their education.

The number of students who described themselves as very likely to pursue a career related to biological or environmental sciences increased from before to after the course (from 7 before the programme to 9 after)(Figure 8). The clearest change was an increase in the number of students considering a career in museum curation, with 3 students newly interested in the career (4 before and 7 after the programme) and 18 students (up from 7 before the programme) finishing the residential feeling either neutral or positive towards it (Figure 8).

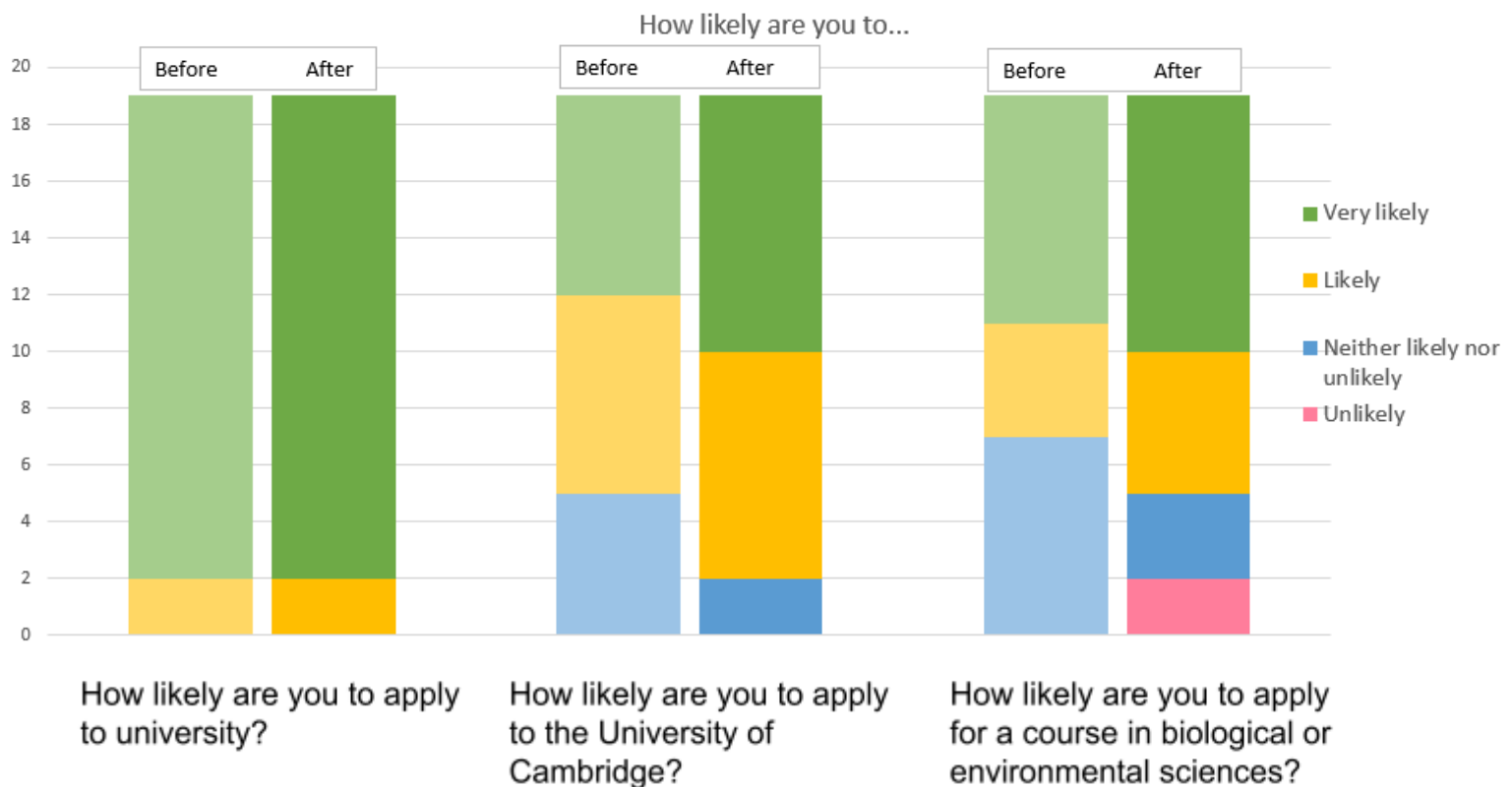


Figure 7. The number of students selecting each option of a six-point Likert scale (very likely, likely, neither likely nor unlikely, unlikely, very unlikely) for questions related to likelihood of applying to university, to Cambridge, and to a university course in biological or environmental sciences, with information collected from all 19 attendees, both before the course started and at the end.

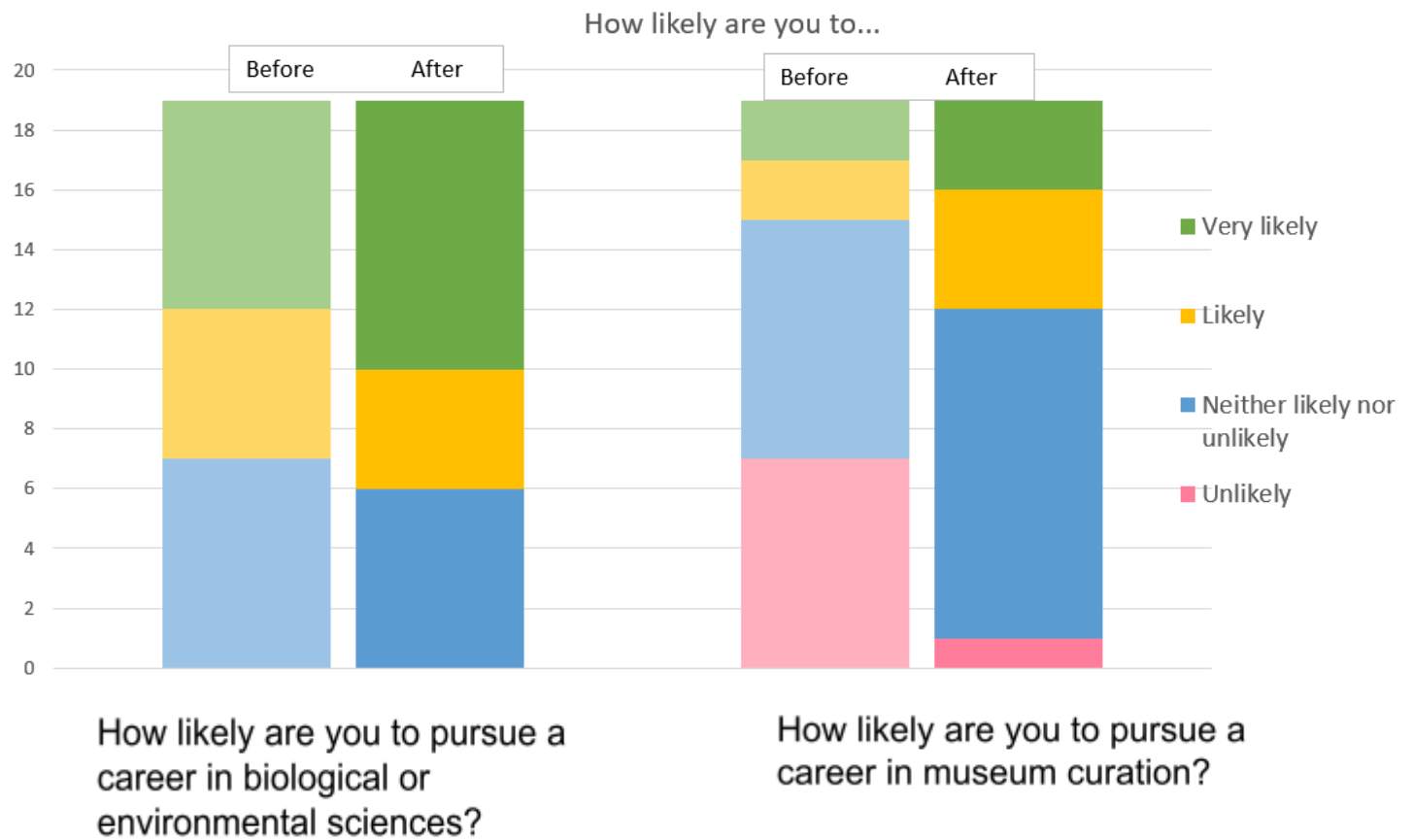


Figure 8. The number of students selecting each option of a six-point Likert scale (very likely, likely, neither likely nor unlikely, unlikely, very unlikely) for questions related to likelihood of pursuing a career in biological or environmental sciences or in museum curation, with information collected from all 19 attendees, both before the course started and at the end.

Words to describe Cambridge and museums

There was a notable change in the way students described the University of Cambridge and museums before and after the course.

Participants' impressions of Cambridge changed from words primarily linked to ideas of poshness, snobbery, tradition, and prettiness at the beginning of the week to word choices on themes like 'connected', 'green' and 'world-leading' by the end of the week. Words linking Cambridge to academic prestige and research were equally common before and after the residential, and it was reassuring to see that this did not decrease. There was a greater range of words used to describe Cambridge after the residential, with students' answers reflecting the different sides of the University rather than continuing to repeat stereotypes of poshness (Figure 9).

Participants' associations with museums also changed. Before the residential, students' choices of words reflected a belief that museums primarily preserve, record and display the past (such as 'history', 'old', 'relics' and 'skeletons'), but after the residential, their words captured the present-day public engagement and educational roles a museum plays, including 'awareness', 'community', 'education', 'environment', and 'storytelling' (Figure 10).

These changes in students' perceptions of Cambridge and of museums reflected what we had hoped to achieve with this programme: developing museums as a gateway to widening participation in both museums and university life.

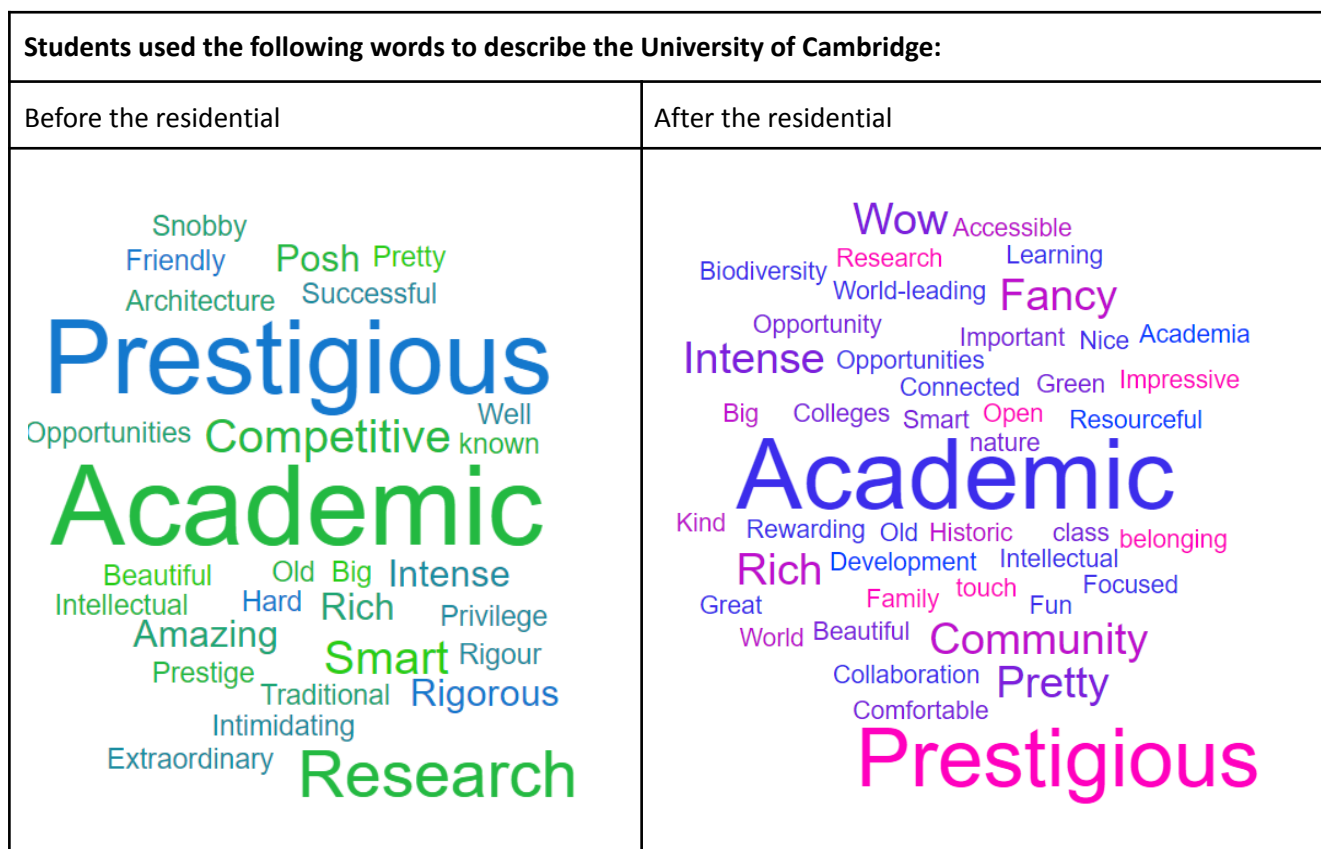


Figure 9. Words students used to describe the University of Cambridge before and after the residential programme. Each student could give three words. The word clouds display the most frequently used words in a larger font.

Students used the following words to describe museums:

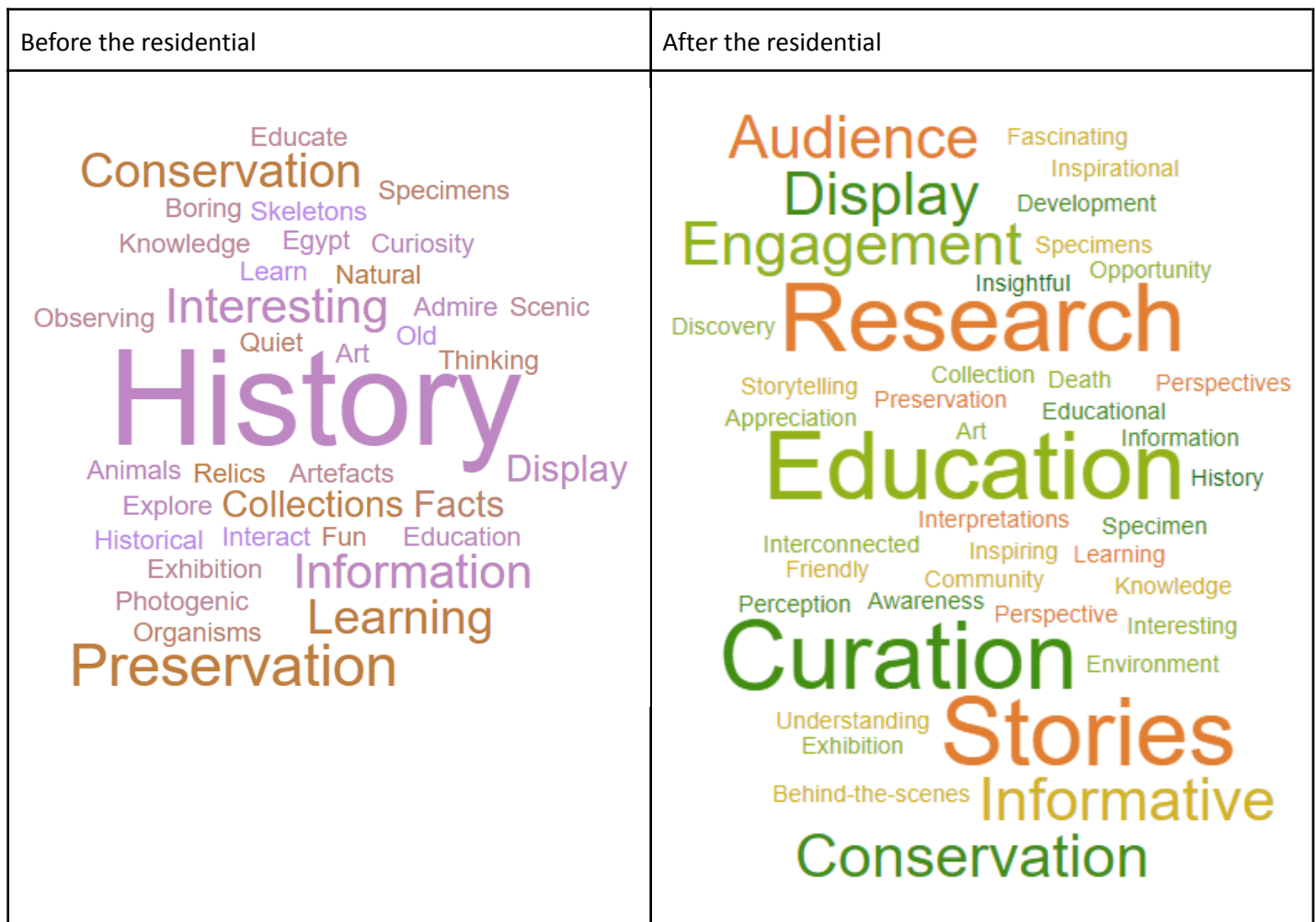


Figure 10. Words students used to describe museums before and after the residential programme. Each student could give three words. The word clouds display the most frequently used words in a larger font.

Feedback from Students

Students' feedback on the post-programme form and in subsequent email correspondence was overwhelmingly positive. Comments frequently cited the opportunity to meet world-leading experts and other high-achieving students from across the country with common interests as highlights of the programme. Several commented that the residential had encouraged them to consider applying to Cambridge.

Students' written comments included:

'I want to say an extra thank you for organising the week at Clare College. It was so much fun, the activities and talks you organised were fantastic and it has confirmed my desire to apply to Cambridge university!'



'I really enjoyed all of it [...] seeing all the museums and I liked meeting different professionals in their fields.'

'I enjoyed speaking to so many people who are so knowledgeable and passionate about their fields, seeing parts of museums that normally aren't accessible, and the experience of the college and city.'

'I just wanted to say thank you from the bottom of my heart, genuinely these outreach programmes are life changing, and completely changed my perspective of university. Your work made a really big impact in my life.'

'Staying in Cambridge accommodation and eating in the buttery has been a really fun experience and gave me an insight into what life as a student is like.'

Feedback from Parents

While we did not formally request feedback from parents and guardians, we received a number of emails and verbal comments thanking us for running the programme and describing how their young person had benefited from it. These often focused on the students' newfound or consolidated interest in applying to Cambridge, but two parents commented that their children had run other events in their own schools and local communities focusing on conversation, drawing on knowledge and skills gained from the residential.

Parent and guardian email feedback included the following comments:

'Thank you so much for everything that you did to make the residential so successful. Cambridge has certainly made an impression on [student name].'

'Thank you and the team so very much for giving [student], and all the group by the sound of it, such an interesting, informative and developmental week - she came back absolutely full of it! It sounds wonderful and I really look forward to seeing the exhibition.'

The programme has also been featured on the Facebook account of Bideford College, where one of the participants is taking A Levels. The post includes photos taken by the student and describes the behind-the-scenes access given to the students during the residential (Figure 11).



Bideford College

18 April · 🌐

Sixth Form student **Oliver** was successful in gaining a fully funded place (1 of only 19 places) at the University of Cambridge staying at Clare College over the Easter break. The residential was called Cambridge Future Museum Voices. Students from state schools only were invited after successfully writing a 250 word essay on why they should be accepted for a place on the programme. During Oliver's time there they explored Clare College, the Museum of Zoology, Cambridge Herbarium, Botanic Gardens, Museum of Archaeology and Anthropology, and the David Attenborough Building Roof. They were given private tours and behind the scenes access to these locations not available to the public. On the penultimate day, they received presentations and talks by experts and PhD students in their specialised fields as preparation for creating their exhibits. The final day was reserved for creating their interpretations and exhibits for an exhibition later this year at the Museum of Zoology.



Figure 11. Screenshot from the Facebook account of Bideford College, referring to one of their students who attended the course.

Public engagement with the exhibition

We were delighted to welcome 24,000 visitors to the exhibition during its 11-week run. Members of the public were invited to give feedback on the exhibition through post-it notes on audience reflection panels at the end, to allow us to assess the impact of the young people's work in changing public perceptions and understanding (Figure 12).

The audience reflection panels included three prompts. The first prompt on the feedback board, 'Has this exhibition changed the way you think about any of the animals you saw?', encouraged members of the public (including many children) to write about their newfound appreciation of spiders and other misunderstood animals which play important roles in ecosystems that humans rely on (Figure 13). The second prompt, 'Do you feel differently about how people interact with nature? How?' attracted comments on how interlinked humans are with the planet, as well as expressions of disappointment about the way animals are exploited, forgotten or misunderstood (Figure 14). The final prompt, 'What could you do to help our tangled planet?' generated the greatest engagement and saw a range of suggestions from people of all ages, from reducing plastic waste and pollution to placing more value on challenging the crowd in order to create positive change (Figure 15). All three prompts attracted a number of drawings of museum specimens from younger visitors.



Figure 12. Public post-it note area in the exhibition, where members of the public could respond to three prompts associated with the exhibition.

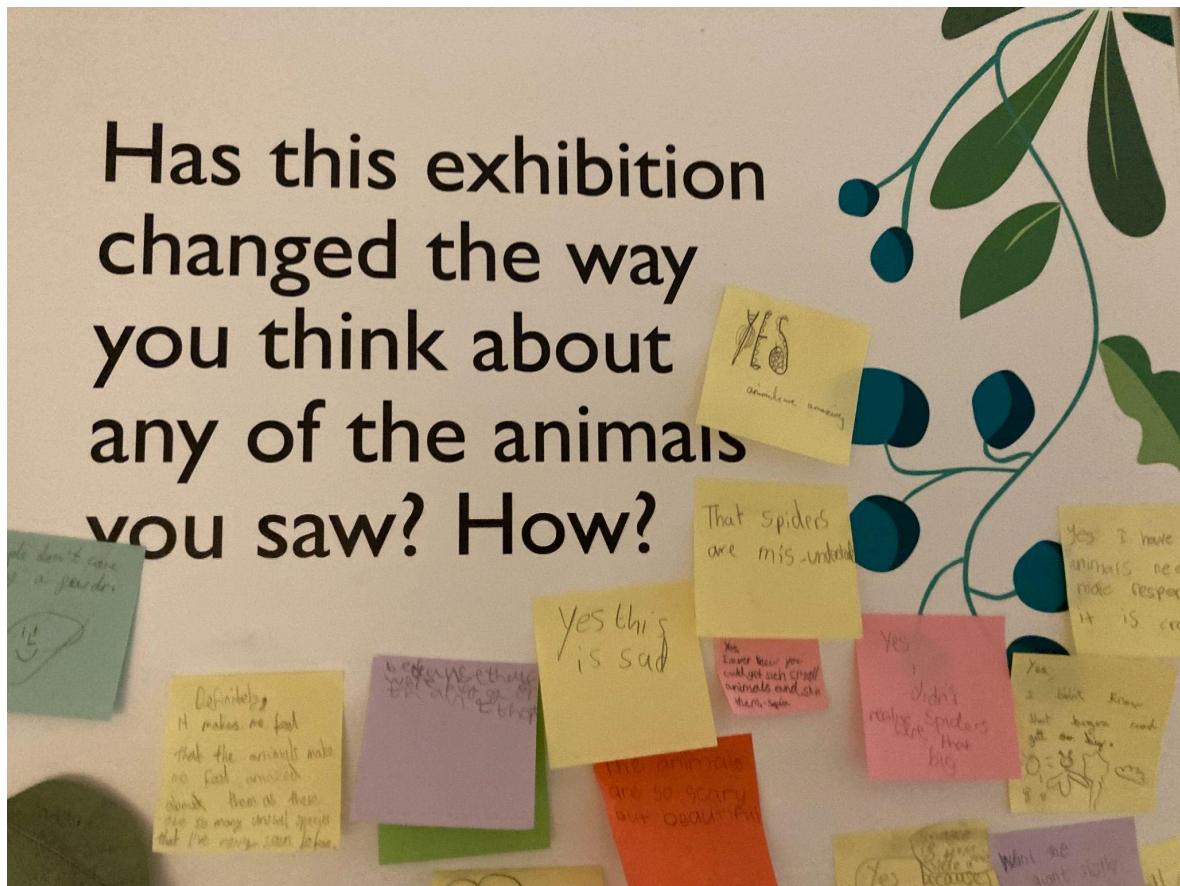


Figure 13. Public post-it note responses to the question 'Has this exhibition changed the way you think about any of the animals you saw?'

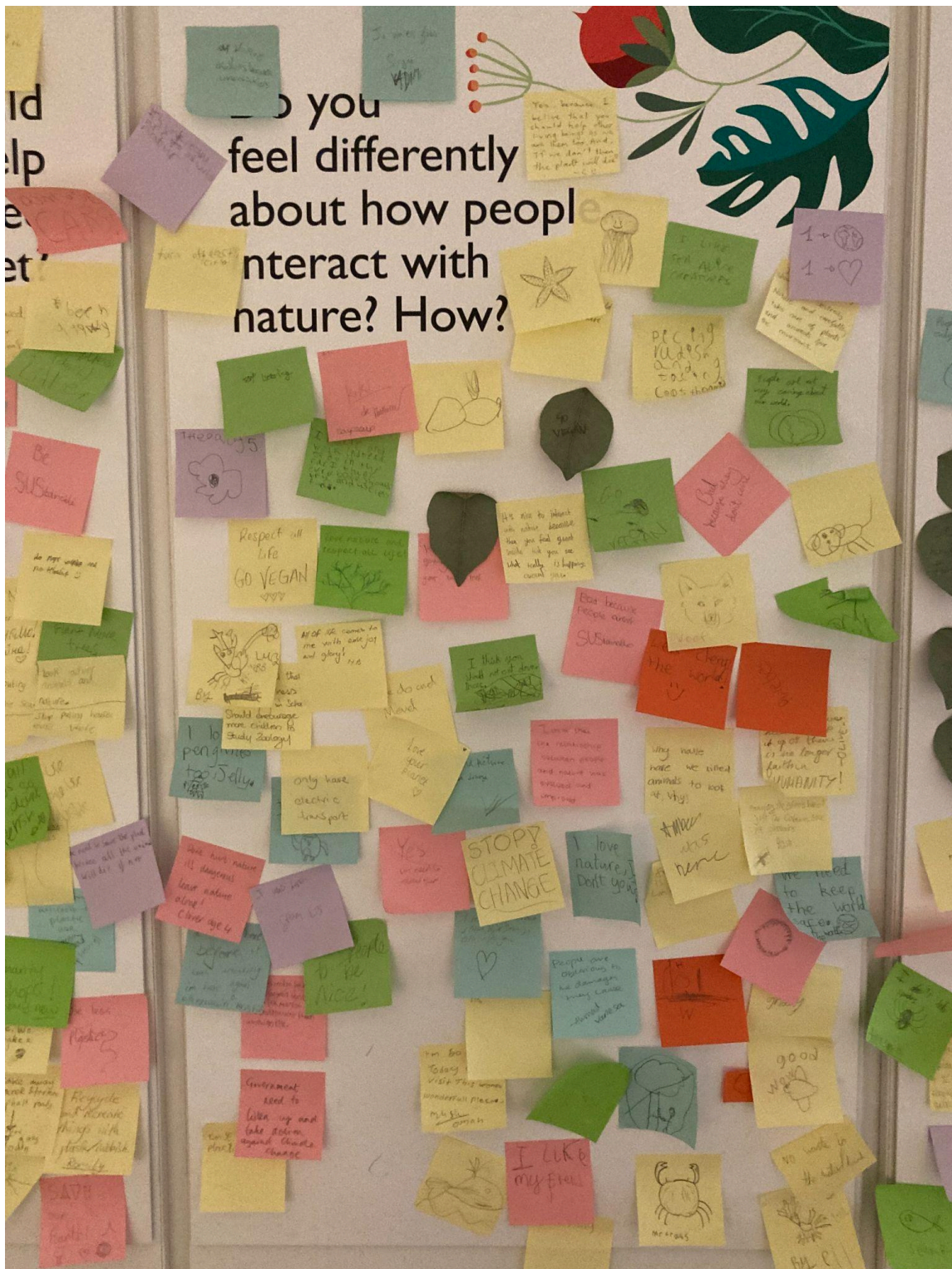


Figure 14. Public post-it note responses to the question 'Do you feel differently about how people interact with nature? How?'



Figure 15. Public post-it note responses to the question 'What could you do to help our tangled planet?'

Applications to Cambridge

One of the aims of the programme was to encourage students from underrepresented backgrounds to apply to study at Cambridge. During the residential, participants were offered an immersive look at Cambridge life, relevant admissions information, and opportunities to view colleges, to allow them to make informed decisions about their futures.

Of the 19 participants, 9 made an application to study an undergraduate course in Cambridge, all for 2024 entry. This was the same number of students who expressed an interest in applying to Cambridge after the residential. Two of these applications were to Clare College and both candidates discussed the programme in their Personal Statements. We also saw several participants, including

one student who eventually decided not to apply to the University, return to visit Clare and other Colleges during the July and September University Open Days.

The 9 students applied to Cambridge courses in the following numbers:

- Natural Sciences: 3
- Geography: 2
- Human, Social, and Political Sciences: 1
- Land Economy: 1
- Mathematics: 1
- Veterinary Medicine: 1

This range of subjects reflects the interdisciplinary scope of the programme. We will continue to track these nine applicants' progress through the admissions process to identify common weaknesses in participants' applications to develop the information, advice and guidance provision in our future outreach work.

It was also good to note that 9 students who did not get accepted onto the programme, of the 33 valid unsuccessful applications, also applied to Cambridge during this admissions cycle. We hope that the opportunity this programme offered to write an academic statement relatively early in Year 12, and the provision of feedback on that statement, was useful for students as they prepared their UCAS applications later in the year.

Considerations for next time

- The format and approach of the course worked very well and we were proud of the high degree of in-person engagement each participant received. Because of this, the amount of time and funding required to run the project was relatively high for the small number of participants. In future, we would hope to allow more students to take part to increase the number of beneficiaries of this investment.
- While students' free text feedback after the residential was overwhelmingly positive, some students suggested they would have enjoyed more involvement with the exhibition design and more opportunity to be creative during the week, as the exhibition development workshops were all concentrated on the final day. For later programmes, we plan to invite the designers in to meet the students, and to add more workshops earlier in the week.
- Having received plenty of interest in the project, we will explore tightening the entry criteria for the programme both academically and in terms of WP:
 - For this pilot cohort, we did not attach any academic criteria to the programme beyond submission of a statement of interest. In future, we would like to make the course more targeted at those intending to apply to top universities including Cambridge, and attach academic criteria to this. Academic entry criteria are often used in selective Cambridge WP programmes; we will consider adopting the requirement that successful applicants be predicted at least A*AA or equivalent and have achieved highly in their GCSEs, where applicable.

- We will also consider setting stricter WP criteria, to increase the proportion of students from the most disadvantaged backgrounds, who would benefit from this fully funded opportunity to stay in Cambridge for a week. We aim in particular to increase the proportion of participants on Free School Meals and who attend schools which engage less frequently with the University, especially those outside of London and the South East.

Conclusions

We are very grateful to the Isaac Newton Trust for funding this project. Not only has this enabled us to trial new approaches for public engagement in Clare and in the Museum, but it has clearly had a large positive influence on a bright and engaged cohort of students, several of whom had not been able to take part in other in-person Cambridge outreach programmes.

The programme changed participants' perceptions of Cambridge and the role of museums in tackling global challenges, and led to students feeling more likely to apply to Cambridge and to pursue careers in biological and environmental sciences. It contributed towards making the University more reflective of society: through the nine direct applications to Cambridge it produced from students from groups currently underrepresented at the university, and through the development of a museum exhibition by young people that has been attended by 24,000 people in under three months, increasing the diversity of voices represented by the Museum.

We are keen to develop and expand on this project and run related programmes in the future.

Edgar Turner, Curator of Insects, University Museum of Zoology, and Tutor for Access and Outreach, Clare College

Roz Wade, Senior Learning & Engagement Coordinator, University Museum of Zoology

Libby Beckett, Outreach and Admissions Officer, Clare College

January 2024

Figure 16.
Participants at the
Museum of Zoology,
and one participant's
ideas for a specimen
label.

