

**SciFair 2023 – Bringing the scientific method to the North East – organised by Vanshi Vasu, Arianne Mark and Aaron Scott**

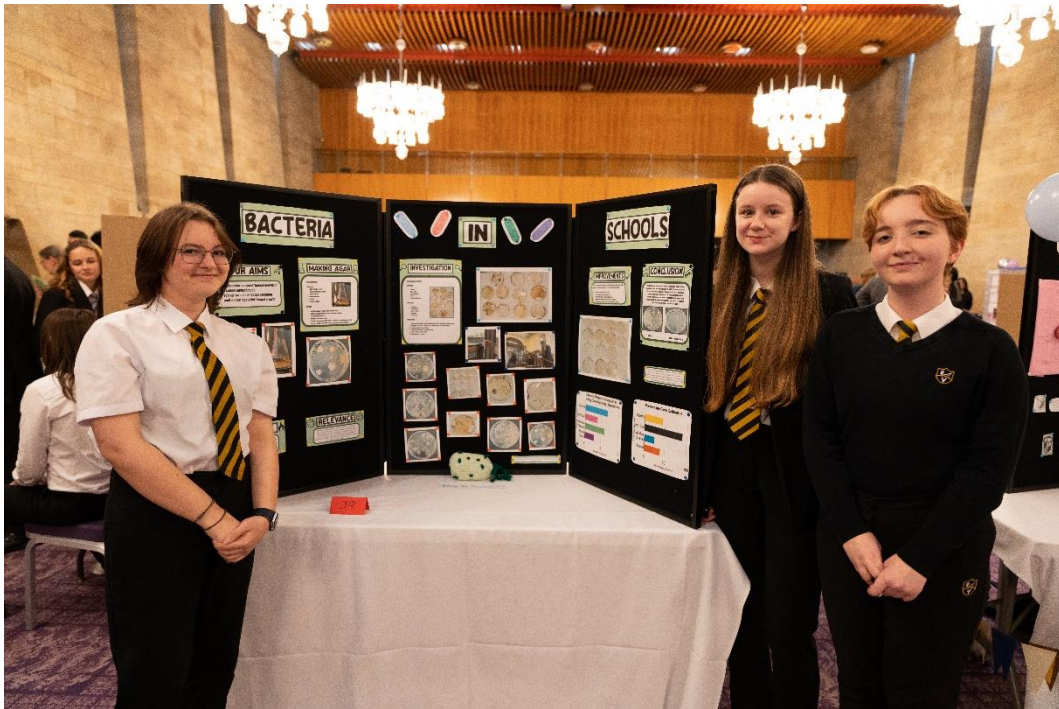
SciFair 2023 was a science fair planned in collaboration with Newcastle University Students' Union aimed at state secondary schools from North East England. Children from these socioeconomically disadvantaged schools have a lower progression rate into further education compared to the rest of England and have limited opportunities to acquire research skills or evidence engagement with sciences in a personal statement for university applications. SciFair provides these pupils with an unthreatening introduction to scientific research by encouraging them to investigate a topic of their choosing and perform relevant experiments. Pupils then present their findings to a judging panel at a fair styled after a conference during British Science Week. By participating, the children gain an understanding of the scientific method and a range of skills that will benefit them in their studies, university applications and future careers.

The first SciFair was hosted in 2022 based on the founder Freda Tuor's participation in a science fair which bolstered her interest in biomedical sciences and encouraged her to pursue a degree in this field. She aimed to share this experience with North East pupils by hosting a fair at Newcastle University during British Science Week for them to practice scientific research in a friendly, supportive environment and meet local academic researchers. Her first event solidified the core concept behind the fair, which our team sought to elaborate upon for 2023 to develop the event into an exciting, informative and interactive experience that would inspire local children for years to come.



Teams of pupils from the participating schools completed project proposals from November to December 2022, in which they outlined the topics and objectives of their investigations. Applications were competitive, and after considering each of them we selected 40 proposals from across nine schools that demonstrated originality, ambition and scientific merit. The proposals came from a range of year groups and addressed biology, chemistry, physics and engineering, with prizes offered for each year group and discipline for motivation. The 109 pupils behind these proposals then researched their topics and designed experiments or explanatory models to actively consolidate their understanding.

From January to March, they collated their findings as a lab report, presenting the background and methods of their project and discussing their results.



After working on their projects from January to March, the pupils were invited to Newcastle Civic Centre on Monday 13<sup>th</sup> March for the fair with assistance from volunteering Newcastle University students. Here the pupils set up their projects on display boards, gave presentations to an academically experienced judging panel and answered their questions. To arrange this panel, we collaborated with researchers from Newcastle University who were interested in outreach and wanted to encourage the pupils' scientific curiosity. The pupils also examined other schools' projects and talked about their scientific interests with children from these schools. These projects were diverse, and many pupils critically analysed important challenges facing the UK such as cancer treatment, improving nutrition and novel biotechnologies.



New to this year's fair, we worked with the Outreach Team from Newcastle University to organise a hands-on workshop for the children. The theme was 'Sweet Science', and the workshop involved pupils making sweets and learning about processes that occur after eating sweets such as sugar digestion and glucose homeostasis. We also hosted a quiz competition to challenge the pupils and a comedic photo booth to provide a light-hearted break from the more involved aspects of the fair and give them a memento to remember their work and progression. These were followed by a speech from a local microbiologist addressing topics such as the career possibilities for science students and the value of interdisciplinary cooperation, then we ended the fair with an award ceremony in which the judges announced the winning projects and handed over prizes and certificates.





The pupils enjoyed this chance to demonstrate their interests and scientific capabilities and showed dedication despite the challenges that come with following the scientific method. Teachers also appreciated how we expanded upon last year's event to create a varied and entertaining experience for the children. The repertoire of skills the pupils developed through their projects, such as independent working, organisation, critical thinking and public speaking, was evident in their presentations and this will support them as they continue through education at school and beyond. Following the fair's success, we hope to continue SciFair as a yearly event and support as many children across the North East with scientific skill development as possible, promoting the growth of the next generation of scientists and researchers.

