



University of Hertfordshire

Winner of the Family Learning to Support STEM Award in partnership with Maths on Toast

The University of Hertfordshire has been in education for 70 years and has just under 32,000 students, studying 550-degree options across two campuses and Bayfordbury Observatory. Its Outreach and Public Engagement Team in the Department of Physics, Astronomy and Maths work to support and maintain the science capital of people in underserved local communities.

This includes a programme of events and activities for school pupils from Key Stage one to four in its partner secondary and primary schools, and public events such as open evenings at Bayfordbury Observatory

Cosmic curiosity - a career in space

Cosmic Curiosity is a collaborative project between Hertfordshire Libraries and the University of Hertfordshire. In each library, four sessions were held for children aged four to seven and their parents and carers. This age range was chosen as the children are at the age where they are still positive about science.

In addition, parents and carers were included as their misconceptions surrounding science, scientists, and science careers, as well as their own confidence in science, can have a large impact on a child's future science aspirations.

Each of the sessions was themed around a career in space science (astronomy, aerospace, engineering, astronaut, planetary geologist) and related counter-stereotypical career skills necessary for these roles, such as creativity for an aerospace engineer.

The sessions included a career-linked story, and in-session activity and the families were also provided materials for at home. The in-session and at-home activities all had creative elements, as creative approaches to learning can help secure and embed science understanding.

By basing the activities on a career and framing it around career characteristics, they created a space where children and their parents and carers could really experience being a scientist and see that science is for them.

Reaching underrepresented groups

The four main partner libraries are in the top 20% of the most deprived areas in Hertfordshire. They also chose to work with Stevenage and Hemel Hempstead due to the proximity to its three widening access partner primary schools, where a high percentage of children are on Free School Meals.



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They initially advertised the sessions in local primary schools before opening them up to the general public, as they were more likely to reach under-represented groups. The name 'Cosmic Curiosity' was chosen as they didn't want to directly reference science in the project, to not discourage families who may already feel excluded from the subject.

The project also wanted to highlight how important being curious is in science, rather than the more common stereotype of intelligence.

Improving science literacy

The confidence of both families and staff to carry out astronomy activities independently grew. Staff gained skills in presentation, evaluation techniques, communication, astronomy knowledge and how to manage and lead sessions.

There was an increase in the number of STEM books borrowed from the partner libraries by almost 2,000 - evidence of how the programme has helped to improve family science literacy in this community.

The project also interacted with new audiences as half of the families involved had never been to a library event before, and none of the families had ever been to a University of Hertfordshire event previously.