

Meaningful Learning Experiences

Strategic Commitment	✓	Curriculum projects written into the school's CEIAG plan
Curriculum Provision	✓	One of three subject areas chosen for exemplar projects
Employer Partnerships	✓	Involving a local organisation in a non-standard sector
Reflective Young People	✓	All students used the online self-assessment tool
Informed Career Choices	✓	Providing a positive example of local opportunities

Data from Tees Barrage brings purpose and meaning to Statistics and Graphs in Year 8 Maths

The current Key Stage 3 National Curriculum requires students to learn about statistics, including how to, *'construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data'*.

Teachers at Thornaby Academy in Stockton-on-Tees found it difficult to motivate students about this part of the curriculum, using a popular textbook to guide them through the content, worked examples and exercises. Teachers felt it needed a real context to provide more meaning.

An initial approach to the nearby International White Water Centre did not work out, but led to discussions with the adjacent Tees Barrage, a world-class engineering facility managed by the Canal & River Trust (formerly British Waterways).

The team at the Tees Barrage provided data about river levels, numbers of salmon moving upstream, construction facts about the barrage and numbers of visitors and volunteers. A short video message from the team leader asked students to communicate the information in graphs and charts that could be used at an open day in the summer. This later became a request to help with displays for a new visitor centre.

Students worked in groups, taking responsibility for different parts of an A2-size display presented to a guest from Canal & River Trust at an exhibition event. Using a scoring grid based on challenge criteria set at the outset, student groups who produced the best work were invited to work with the team at the Tees Barrage on the visitor centre displays.

Benefits for the Students

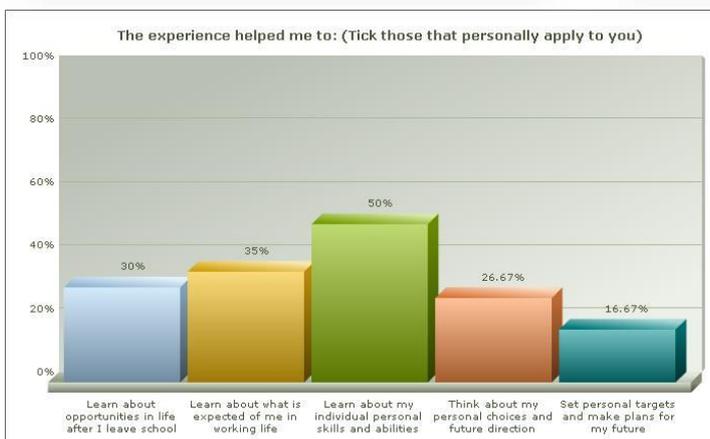
- On a 5-point scale, 95% rated their interest and enjoyment of the project at 3 or higher
- 83% self-assessed they had developed team working skills
- I am proud, *'... that we have got a finished presentation now and that it is neat'*
- *'... of the graphs because it explains the board more clearly'*
- *'... that our poster may help people in the real working world'*

Benefits for the School

- The project strengthened a partnership with Youth Direction – a local careers service – and contributed to a joint CPD event that showcased this and two other curriculum projects
- The three exemplar projects at Thornaby Academy focused on year 8 students, allowing comparison of self-assessment data and management decisions about student development
- Low aspiration remains an issue in the Stockton area and many students previously knew little or nothing about the Tees Barrage and work of Canal & River Trust

Benefits for the Employer

'We have found the project really inspiring. It is too easy for specialists to get bogged down in technical facts and figures of a site or operation. This project has given us an opportunity hand over that data to the students, who have examined the information and explored ways of explaining it to a wider audience. In order to do that, they first had to get to grips with the details themselves, before deciding how best to use graphs, charts, text and imagery. Their approach, work and feedback will be invaluable to us as we look at providing greater levels of interpretation at the barrage.' (Claire Cavendish, Canal & River Trust)



The Maths challenge to present data about the barrage was shared in classrooms using a short video clip, with a special guest from the Canal & River Trust visiting at the end of the project to help judge students' work. Online self-evaluations revealed developments in their skills and aspirations and very positive feedback about their enjoyment and interest in the project.