



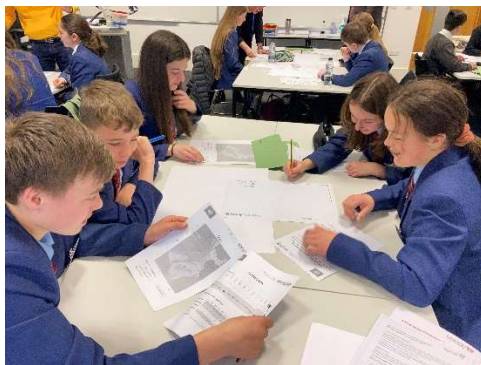
St Bernard's Catholic High School: An environmental difference through girls in physics

Aim:

- Challenge the stereotype that physics is 'a boy's subject' that you can only do if you're good at maths.
- To raise awareness of the career opportunities available through studying physics.

Rationale:

St. Bernard's Catholic High School is a non-selective school for 11-16 year olds, close to the centre of Barrow-in-Furness. The science department's links with local sixth forms have lapsed in recent years and the school didn't have a physics specialist. They already had good links with local industry, helped through their STEM co-ordinator, but wanted to strengthen these links to raise aspirations in all students. A particular focus was girls, who had a negative perception of physics. They saw the stereotype 'physics was for men who are good at maths' – not something open to them, so one focus was to challenge this stereotype and encourage girls into physics.



Action:

Girls in physics...

Thursday lunchtime became 'Girls in Physics: The Carbon researchers. Working alongside the Institute for Research in School, 25 year 9 and 10 girls tackled the global problem of climate change, by taking action in their school. Like true physicists, they constrained the problem (by calculating an unacceptably high carbon footprint for the school) and then set about solving the problem. The girls took ownership of the project, and develop key scientific skills as they research suitable ways of recycling food waste.



To reduce CO₂ emissions the team drew on the expertise of local nursery owners to find low maintenance trees for 'planting day', where they also raised money for humanitarian aid in the Ukraine.

In taking part in the Girls in Physics group they not only developed science skills, but successfully bid for funding, collaborated with the Institute for Research in Schools and the John Muir Group and will present their findings at a conference.

Student gained confidence and valuable skills during this project, but also responded positively to the experience:

"I like working as part of a team to solve a real life problem"

"The best part was problem solving as it made you think outside the box"

Broadening horizons...

St Bernard's made the most of support for STEM from local organisations, taking 15 students to Lancaster University to a STEM challenge day. The aim was to try and broaden the students' horizons and raise awareness of possibilities outside of the local industry in Barrow. Looking to the future



there were challenges on renewable energy. The careers it could lead to and a tour of the university giving them a first look at what going to university is like.

"I learnt a lot about what University is like and what you can study."

Pathways to the future...

A STEM job may seem a long way from a science lesson, and for many students will be too far. St Bernard's is helping students find their way by showing the different routes into different careers, through a display board: so every student can find their way to their STEM job.

Role models gains too....

Alumni are very powerful role models, they truly represent what a student from that school can do. St Bernard's invited an alumni, who is studying for his A levels, back in to mentor year 10 triple science students. Not only do the GCSE class benefit, but that student is now hoping to study Physics at Lancaster University.



Impact:

- Gender stereotypes in physics have been challenged as girls have been able to apply their classroom learning to a project that was important to them and their school.
- Student aspirations have been raised through working with external organisations on their research and presenting it at a conference, and the trips to Lancaster University where students were able to see what University life was like and learn about the opportunities available to them.
- Girls will feel welcomed and valued in the science department as the 'Girls in physics group' gives them their own space to explore science, build their confidence and develop many transferrable skills.
- All students are empowered to make informed choices about their futures and how to progress in a science career through the career pathways maps in all laboratories.
- Teachers report feeling positive about the changes they have made and the impact it has, this may have a positive impact on staff retention:
 "it's opened my eyes to what we can do within school to promote physics as a subject and a platform to many careers."