

Meaningful Learning Experiences

Strategic Commitment	✓	Part of a pilot supported by a large academy trust
Curriculum Provision	✓	Applying learning about electricity in Key Stages 3+4
Employer Partnerships	✓	Part of an initiative to promote Allied Health Professions
Reflective Young People	✓	Helping students see the 'bigger picture' about Science
Informed Career Choices	✓	Broadening understanding about careers in the NHS

Students apply knowledge about electricity to encourage safe use of defibrillators

The Science team at Unity City Academy in Middlesbrough considered a number of topics for this project about which, *'some of the concepts are difficult to articulate to the students and they find it difficult to link to everyday life. The topics are particularly dull and often pupils lack motivation'*.

'Voltage, Current and Resistance' are covered in Key Stage 3 and 4 learning and, in discussion with the Head of Professional Standards College of Paramedics, the project challenged students to apply their knowledge to the use of defibrillators, both by paramedics and by the general public.

The project was carried out in the middle of the Covid-19 health crisis, with most students studying from home and a set of slides helped to launch the challenge through the Google Classroom – the online platform used throughout the academy trust.

In addition, students received a short video message by the NHS expert who talked about her role and the importance of safe use of defibrillators, along with a 'briefing paper, which started, *'Thank you for your interest in helping us with this challenge about the NHS. Less than 1 in 10 people survive an out-of-hospital cardiac arrest. Making life saving defibrillators more accessible can help to change that.'* It concluded, *'Can you use your knowledge about Current, Potential Difference and Resistance to describe in plain English how this equipment works and how it can be used safely by any member of the public to help save lives?'*

A summary of work submitted by the students was submitted to the College of Paramedics for their expert feedback.

Benefits for the Students

- *'We enjoyed learning about the job.'*
- *'I didn't know that resistance is what keeps us safe!'*
- *'I only knew about doctors and nurses in the NHS.'*
- *'I want to be a paramedic now but would need to learn more first.'*
- *'I enjoyed the NHS project because it gave me a break from my other lessons!'*
- *'I found the science part hard but after I searched online it started to make sense.'*
- *'I would like to find out more about other jobs too.'*

Benefits for the School

- The ideal outcome in the initial brief was, 'Students who can see the bigger picture and refer to how this may help them in the near future. Science is not just about wearing a lab coat ...'
- '... the curriculum projects have contributed to the academy achieving one of the Benchmarks throughout COVID-19. We have now achieved all 8 Gatsby Benchmarks!'
- 'The pupils have thoroughly enjoyed it and it's shown them the relevance of curriculum learning to the world of work.'

Benefits for the Employer

- Paramedics are among the 14 Allied Health Professions the NHS wishes to promote to young people. The project presented a positive message about working in this profession to students across the whole academy, with limited requirement of resources from the College of Paramedics or time of the senior manager who was involved.
- 'It's great to see all the student's amazing work on this Science project.'

Defibrillator Challenge

Many communities want this equipment to be available.



Defibrillator Challenge

Can you use your knowledge about Current, Potential Difference and Resistance to describe in plain English how this equipment works and how it can be used safely by any member of the public to help save lives?

Key Stage 3+4 students were challenged to apply their knowledge about electricity to raise awareness about the safe use of defibrillators located in the community. A senior and experienced paramedic provided some information about her profession and feedback about the students' work.

Everyone achieves academic excellence. Everyone develops remarkable character. Everyone is proud to be part of our diverse community.

This is linked to electricity.

In science to work out resistance you have to measure potential difference and current.

How does this apply to... **Science?**

Defibrillators would be safer if they had more components in a series type of circuit because there would be less current.

Things in a circuit like the wires stops the charge moving to fast. This is called resistance and makes defibrillators safe. It is easy to think of each of these in the following way: the current is the flow of electric charges, the potential difference provides the 'push' the resistance restricts the flow of charges

