

Meaningful Learning Experiences

Strategic Commitment	✓	Part of a pilot supported by a large academy trust
Curriculum Provision	✓	Applying Key Stage 3 learning about 'Electromagnets'
Employer Partnerships	✓	Supported by an international metal recycling firm
Reflective Young People	✓	Students' work was seen and valued by an employer
Informed Career Choices	✓	Challenging stereotypes about 'scrap metal' businesses

Year 8 students apply 'Electromagnetism' to design a new metal recycling plant

The Science curriculum for year 8 students at Greenwood Academy in Birmingham includes the age-related expectation, requiring them to explain, '*... the choice of electromagnets or permanent magnets for a device in terms of their properties*'.

Recycling is a highly topical issue and Birmingham's engineering heritage means the city has plenty of scrap yards dealing in ferrous and non-ferrous metals. The teachers chose to apply learning about the Science topic, specifically, '*Health and safety, suggesting improvements to increase the strength of electromagnets and designing optimum electromagnets*'.

EMR Group is one of the world's leading metal recyclers, with a couple of sites just a few miles from the school. The general manager agreed to provide feedback about work by the students.

Classroom resources designed by the teachers included some revision about electromagnetism and explained how recycling contributes to sustainability. Students were then introduced to EMR, using the firm's own videos to show how end-of-life cars are shredded and recycled. They were challenged to, '*... design an efficient recycling plant to help EMR handle the increased number of scrap vehicles to be recycled*'. The classroom resources included various tips and guidance for the students.

The Covid-19 crisis meant that the students' designs had to be collected from a deep-cleaned classroom and that feedback by the general manager took the form of a video message, which was sent to the students using Google classroom technology, which is used across the academy trust.

Benefits for the Students

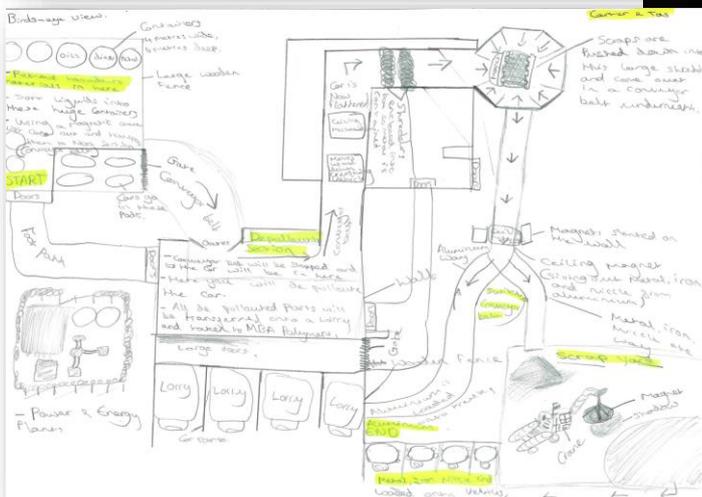
- As well as sending a video greeting, the general manager at EMR provided encouraging feedback on work by each of the student groups. His email began, '*I've looked at all the work that has been supplied and we were really impressed with what has been created.*'
- In his response, the teacher leading the project stated that, '*I will be sharing the video and the comments today with the pupils. I know the pupils will be really grateful.*'

Benefits for the School

- 'After adapting the premise and introducing students to the project, pupils were able to focus in and relate their studies to the real-world use of electromagnets. Pupils enjoyed the fact that an employer was going to grade their work, and tried to produce work that could help the employer.'
- 'I really feel it has a lot of potential to grab students' attention, link the science to the real world, as we often try in the classroom.'

Benefits for the Employer

- 'We work with local communities on recycling related projects ...' (website statement)
- 'I've looked at all the work that has been supplied and we were really impressed with what has been created ... I will also look to see if we can organise a site visit at some point to one of our metal shredders in Birmingham as a thank you for the children that took part in the task.'
- Let's keep in touch and see how the situation develops ...'



Year 8 students applied learning about 'Electromagnetism' to suggest ways in which a global metal recycling company could improve plant on their sites. The general manager provided feedback for each of the groups of students, along with a short video greeting.