

Lloyd's Register Foundation joins forces with STEM Learning to develop engineering skills in the next generation



Young people throughout the UK have benefited from the largest ever STEM Learning ENTHUSE Partnership programme thanks to a cash injection of £300,000 from the Lloyd's Register Foundation (LRF).

LRF – the independent global charity that supports research, innovation and education to make the world a safer place – funded 20 separate Partnerships in 2018 in a bid to keep engineering skills at the heart of the curriculum.

Two years on and results from the 93 schools are coming in.

Dr Olivia Swift, Senior Programme Manager at LRF, said the organisation was delighted by the positive outcomes.

"We are so pleased with what the ENTHUSE Partnerships have achieved. They are brilliant models for learning and are really leading the way," said Olivia.

"STEM Learning was an obvious partner for us as half our mission to engineer a safer world focuses on education specifically. Developing the pipeline of engineering skills very much fits with everything we do.

"One of the main benefits is how teachers begin to inspire their classes. If they can ignite a passion in one person, that can echo in ways you can't foresee for years to come."



Lloyd's Register Foundation (LRF) sponsored the largest number of ENTHUSE Partnerships to date – donating £300,000 to fund 20 Partnerships throughout the UK.

How to get involved

If you have been inspired by how the Partnership with LRF has impacted on their local community and young people across the UK, and you'd like to know more, please contact us at employer@stem.org.uk or visit www.stem.org.uk/employers/enthuse-partnerships

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One such teacher is Lisa Morris from Darwen Aldridge Community Academy in Lancashire who applied for the ENTHUSE Partnership in a bid to encourage more girls into design and technology (D&T).

"I was always looking for new challenges and this pushed us into taking part in so many things I would never have done otherwise," said Lisa. "We hope to change the way pupils see the subject – it isn't just boys making furniture or girls making pretty dresses. We have pupils studying everything from sustainable architecture and the relationship and effects of gaming and carpal tunnel syndrome to shelters for the homeless and being inspired by designers such as Vivienne Westwood and Banksy."

"One of our girls has gone on to Blackburn College to do a full-time carpentry course. She absolutely loves it. And another plans to become an architect."

Lisa said the courses provided by the Partnership have also led to new unexpected opportunities within the local community.

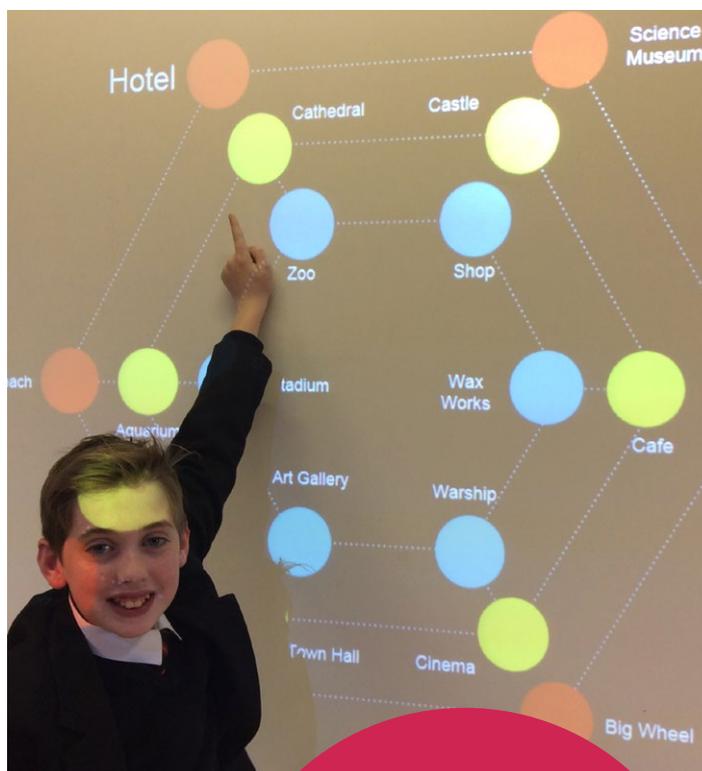
"I went on a 3D printing course at the STEM Learning Centre – it's so exciting! You can create products from so many different materials. We have been able to purchase 3D printers with some of our funding which will have a great impact on our students' technological knowledge and future aspirations," she said. "We have recently registered to take part in a 3D printing initiative which aims to promote understanding of digital and STEM-related career options, and increase

awareness of the vast range of technology-based roles in Lancashire with CREATE Education – this is sponsored by BAE Systems who are a major employer in our area. They are also offering us a free 3D printer and training for two members of staff.

"When you open one door in the STEM world it seems there is a whole corridor to explore."

Lisa said her department now has a new standing within the school and high-achieving students have started to opt for D&T at GCSE level.

"STEM ENTHUSE has completely changed the way we do everything," said Lisa. "We have had amazing training and support to help us all the way. Now it's important to keep up the momentum."



The education of around 90,000 young people will benefit from the Partnerships. Over 3,000 days of CPD have been delivered, focusing on engineering and emerging technologies.

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Jenna Earls, Lead for the Fermanagh Computing Together Partnership in Northern Ireland, would certainly agree.

Jenna was the Digital Technology and Innovation Leader at St Joseph's College when the Partnership began. She has now moved across to Devenish College from the same cohort so she can train other teachers in STEM subjects.

"We achieved so much during the two years, I now want to go on and share as much knowledge and experience as possible," said Jenna. "STEM Learning's continued professional development (CPD) courses have been invaluable. And we have learned how important it is to share information from CPD and put it into practice straight away so nothing is wasted or forgotten."



Jenna said the main benefit of the Partnership to her four-school cohort was the luxury of time – to both attend courses and then to work on the resources provided by STEM Learning. Without the ENTHUSE funding, teachers could not have been replaced in the classroom.

"It was great to get out and talk to other people and to share our experiences," she said. "I attended a five-day session with Council for the Curriculum, Examinations & Assessment to learn Python coding and it completely changed what I was able to teach in class. We don't have a national computer curriculum in Northern Ireland, so one of my main objectives in signing up to the Partnership was to bring our schools into line with England. I was able to create schemes of work for Years 8, 9 and 10 after completing the course, and to train other members of staff in my department."

Jenna also agreed with Lisa about getting pupils hooked on STEM subjects as early as possible. St Joseph's and Devenish Colleges both worked with their 'feeder' primary schools, sending out keen students to coach the younger pupils.

Known as Digi-Leads, the coaches made learning fun with sessions on programming and robotics. They took specially made mats and mini spherical robots (Sphero Edu) shaped like Star Wars characters to control using basic coding on iPads.

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Students involved now know far more about STEM career routes – with a massive leap in the number of both boys and girls planning to apply for a STEM-related job. The percentage of girls now planning to apply for a STEM-related job has increased to 48%, compared to just 19% before the Partnership began.

"My Digi-Leads were members of the school's Code Club – they were all very keen and did a fantastic job of teaching the younger ones," said Jenna. "Initially the Club was for Years 8 to 10 but the members loved it so much they stayed on into Year 11.

"I was amazed how their communication skills and confidence improved after taking part."

Jenna said it was exciting to see the primary children then arrive at their secondary schools ready to build on these computing skills and to get them thinking about possible careers in IT and STEM.

"I think it's important to get children interested as early as possible and to get rid of preconceived ideas about who can do IT," she said. "We do fun things like Kode with Klossy run by the supermodel Karlie Kloss, and I had wall displays for the class demonstrating the wide variety of jobs using IT – which is pretty much everything!"



"We are a big farming community here so I showed them how our farmers use IT to get their calves fed. The calves wear collars round their necks linked to a chip in the feeder and that works out how much milk to give each calf. I took an actual collar in to demonstrate and it brought the subject to life for them all, seeing how computing skills work in a real environment they all understood."

Now Jenna has her sights set on learning more about the micro:bit mini-computer and already has her teachers engaged in EU Code Week.

"ENTHUSE gave us the chance to start something good and we are running with it," she said.

Creating a legacy from the 20 Partnerships' experience is of great importance to LRF. They believe the young people and teachers involved will go on to inspire others. And that more companies will follow their lead with funding and support.

"STEM Learning are such an innovative organisation," said Olivia. "We have been pleased by the success in all areas of the Partnerships and particularly delighted they have managed to attract an impressive amount of funding for additional support – this speaks volumes about the good work they achieve and verifies they are on to a good thing.

"We are very pleased to have been able to support such a wonderful project."

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