

STEM LEARNING

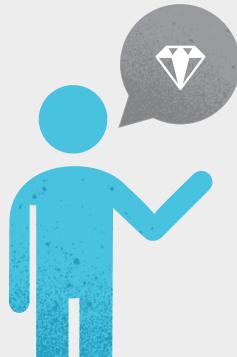
– supporting teachers, improving young people's lives

STEM Learning works with more UK STEM teachers than anyone else – reaching into every secondary school and post-16 institution, and over 80% of primary schools. We support over 170,000 teachers, benefitting more than 2 million young people every year.

Over 80% of teachers who work with us improve the quality of their STEM teaching

"Our recent Ofsted reported that the quality of teaching, learning and assessment has improved."

Jason Trevarthen, Deputy Principal,
Paignton Community and Sports Academy



More young people pursue STEM careers as a result of our support

"The industry insight enabled me to make use of real examples in my teaching and improved [my] careers advice and confidence. This was a really worthwhile experience with long-term benefits." Alice Kupara,
STEM Insight placement at Caterpillar



Disadvantaged students are even more likely to benefit from our support

Primary pupils eligible for Free School Meals (FSM) increased their attainment relative to national expectations in science across two years. Moreover, there were indications that FSM pupils made greater rates of progress.

Centre for Use of Research and Evidence in Education,
Evaluation of ENTHUSE Partnerships, July 2017



Science teachers are 160% more likely to stay in teaching after participating in our CPD

"As an early 'graduate' of the ENTHUSE-funded New and Aspiring Heads of Science course, I have been inspired to remain in teaching, have progressed to senior leadership and now a role leading science across a major academy chain."
Mat Galvin, Assistant Head and Regional Secondary Science Lead for AET



Helping young people achieve their potential



FURTHER INFORMATION

1 Improved quality of STEM teaching

'Planning for impact' is embedded through all STEM Learning CPD. Teacher feedback triangulated with school and pupil data, and independent evaluation provides a continuous improvement cycle.

- **94%** of teachers report ENTHUSE CPD has made a high or medium impact on their knowledge and practice ¹
- **83%** of teachers and 100% of school leaders of ENTHUSE Partnerships report improvements in the quality of STEM teaching ²
- **80%** of STEM Insight participants report improved STEM subject understanding ³
- in contrast, the OECD's TALIS study found that other subject-specific CPD had a moderate or large impact on only 50% of teachers in England ⁴

¹ CPD Impact Toolkit data, STEM Learning, August 2017

² External Evaluation of the ENTHUSE Partnership Programme, Centre for the Use of Research and Evidence in Education (CUREE), June 2017

³ Evaluation of STEM Insight programme, Careers Research & Advisory Centre (CRAC), November 2017

⁴ TALIS – The OECD Teaching and Learning International Survey, 2013

2 Encouraging young people into STEM careers

STEM careers are woven through our CPD; STEM Ambassadors from 2,500 employers lift the lid on careers; our website has over 12,500 resources; Polar Explorer, STEM Clubs and the Tim Peake Primary Project all enable young people to learn about careers.

STEM Insight placements provide intensive careers CPD for teachers giving them experience in STEM industry or university.

- **100%** of STEM Insight participants increased their understanding of STEM jobs and career pathways ⁵
- STEM Ambassadors increase young people's awareness of the importance of STEM by **89%** ⁶
- more than **7 in 10** teachers leading STEM Clubs say they have improved their awareness of STEM careers ⁷

⁵ Evaluation of STEM Insight programme, CRAC, November 2017

⁶ STEM Ambassadors Making an impact, STEM Learning, November 2016

⁷ STEM Clubs Making an impact 2016-17, STEM Learning, March 2017

3 Reducing disadvantage through STEM teaching

The OECD report PISA – Against the Odds; Disadvantaged Students Who Succeed in School (2011) found that "Taking more science courses benefits disadvantaged students even more than it does their more advantaged peers. Therefore, exposing disadvantaged students to science learning at school might help close performance gaps."⁸

STEM Learning actively focusses on schools where young people can benefit most. We work with more schools rated requiring improvement or inadequate by Ofsted than those rated good or outstanding.

Analysis shows ENTHUSE Partnerships result in enhanced progress and attainment above the national average, for young people receiving free school meals. ²

⁸ PISA – Against the Odds: Disadvantaged Students Who Succeed in School, OECD, 2011



4 Retaining teachers of STEM

Concerns around recruitment and retention of STEM teachers are well documented.⁹⁻¹⁰ Teachers develop their effectiveness over time, so retention is vital in a climate where over half of STEM teachers leave the profession within five years. ¹¹

Education Datalab's analysis is significant in finding that:

- **1 in 12** teachers who did not participate in STEM Learning CPD left teaching in the following year. This reduces to **1 in 30** for those who engaged, increasing the odds of retention by **160%**¹¹

⁹ Retaining and developing the teaching workforce, National Audit Office, September 2017

¹⁰ Teacher Retention and Turnover Research, National Foundation for Educational Research and Nuffield Foundation, May 2017

¹¹ Improving science teacher retention: do National STEM Learning Network professional development courses keep science teachers in the classroom?, Education Datalab, 2017