

THE POWER OF

It's hugely encouraging to see that the number of schools offering triple science subjects – biology, chemistry and physics – has continued to rise over the past few years, with 85% of secondary schools doing so this year. These students achieved better grades than those who studied science as a combined subject, indicating the value in studying triple science for those who want to take science subjects to A level and beyond.

We know that these subjects are both economically important and life enhancing. A recent Royal Academy of Engineering Report indicated that the UK needs to educate at least 10,000 more science graduates a year than currently, just to maintain its current industrial position. The CBI/Pearson education and skills survey 2012 indicates that STEM skills open up career opportunities at every level from apprenticeship entry (among 43% of those employers recruiting STEM-skilled people) to postgraduate entry (31% recruit at this level). For all students, science can develop key skills, enhance their critical analysis and creative thinking and empower them in their life and careers as well as making them more actively engaged in the UK's current economic, political and social issues and the decisions they make.

Offering triple science at GCSE level can greatly enhance students' career choices in later life, says **Pauline Hoyle**...



NUMBER OF SCHOOLS OFFERING TRIPLE SCIENCE:

AUGUST 2007

32%

AUGUST 2010

72%

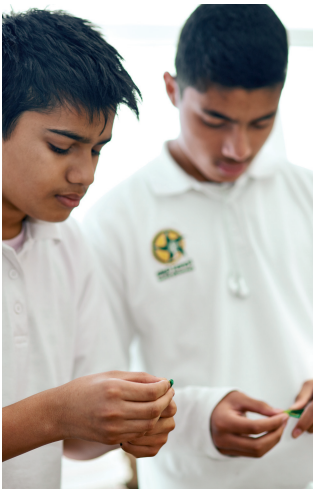
AUGUST 2011

85%

However, some pupils with the potential to study the three sciences are not always given sufficient encouragement and opportunity to do so; especially those from poorer socio-economic backgrounds, where students may need additional opportunities, support and guidance to ensure that they can achieve well throughout their schooling, fewer are encouraged to take triple science and progress to post-16 sciences.

Support network

This is where the national network of Science Learning Centres comes in. We offer a large range of world-class, accredited professional development courses and resources for STEM teachers at all levels and, more specifically, our Triple Science Support Programme (TSSP), is there to give schools the resources, professional expertise and guidance they need to confidently teach these subjects. Funded by the Department for Education, the TSSP focuses on supporting schools to enable and motivate all students who want or are able to take triple science, particularly students who are not in the highest ability groups and those from poorer socio-economic backgrounds. The TSSP is designed to



The positive **impact** of involvement in the programme is **already** being seen in **students...**

primarily engage with schools that are not yet delivering triple science, or only to small numbers of students.

The regional Science Learning Centres provide advisers who give bespoke support to schools to improve their triple science offer, particularly those schools facing challenges that may lead to a reduction in the numbers studying triple science. All partner schools receive support free of charge. Over 440 secondary schools across the country are currently accessing bespoke support from advisers from the national network of Science Learning Centres via the TSSP or are actively involved in one of the 22 local Triple Science Networks, also supported through this programme.

Partner schools receive a visit from an adviser who runs through their specific requirements. A bespoke plan is then put in place with the school, which includes a mix of activities that might include classroom support; CPD courses; peer support – enabling a partner school to link directly with another local school that has overcome some of the challenges that they are facing with triple science; local networks that encourage take-up of triple science for the broadest range of pupils and encourage pupils' take-up of science post-16; and online resources and online communities via the National STEM Centre website.

Making a difference

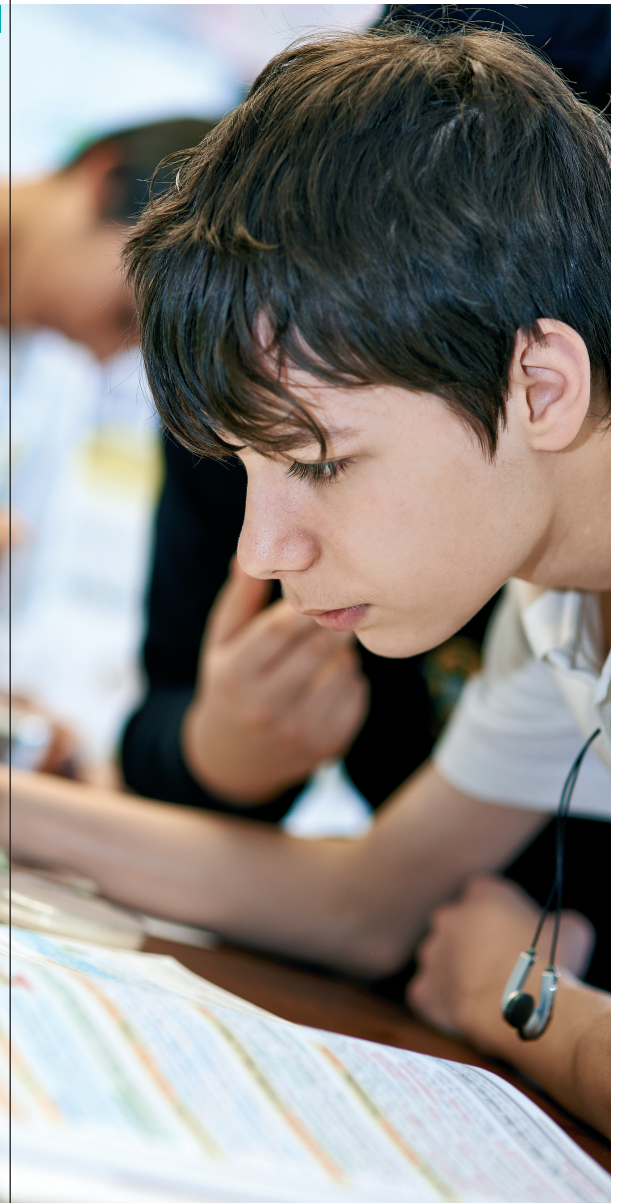
We started managing the TSSP in October 2011 and since then we have received a positive reaction from those schools taking part in the programme, with reports of improved teacher confidence in teaching the three separate subjects and more engaged and enthusiastic pupils.

One example is Manchester Academy in Moss Side, a member of the United Learning Trust, which has been involved in the TSSP since March this year. Results this summer showed 77 per cent of pupils achieved A*-C grades in separate sciences, an increase of nine per cent on 2011 – giving a larger number of pupils the opportunity of continuing their studies at A level.



ABOUT THE EXPERT

THE NATIONAL NETWORK OF SCIENCE LEARNING CENTRES, OF WHICH PAULINE HOYLE IS ASSOCIATE DIRECTOR, IS A JOINT INITIATIVE BY THE DFE AND THE WELLCOME TRUST. IT SUPPORTS TEACHERS IN ENHANCING THEIR PROFESSIONAL SKILLS BY LEARNING MORE ABOUT CONTEMPORARY SCIENTIFIC IDEAS AND IN EXPERIMENTING WITH EFFECTIVE TEACHING APPROACHES AND GAINING EXPERIENCE OF MODERN SCIENTIFIC TECHNIQUES. THERE ARE NINE REGIONAL CENTRES IN ENGLAND AND ONE NATIONAL CENTRE TO SERVE THE UK. EACH HAS A MAIN BASE AND A NUMBER OF SATELLITE CENTRES AND ONLINE RESOURCES THAT CAN BE ACCESSED BY TEACHERS FROM ACROSS THE COUNTRY. SCIENCELEARNINGCENTRE.ORG.UK



ALL TEACHERS, TEACHING ASSISTANTS AND TECHNICIANS FROM STATE FUNDED SCHOOLS, ACADEMIES OR COLLEGES IN THE UK MAY BE ELIGIBLE TO RECEIVE AN ENTHUSE AWARD TO CONTRIBUTE TOWARDS COSTS OF PARTICIPATION ON COURSES AT THE NATIONAL SCIENCE LEARNING CENTRE. SLCS.AC.UK/ENTHUSE

FOR MORE INFORMATION ON THE TRIPLE SCIENCE SUPPORT PROGRAMME, GO TO NATIONALSTEMCENTRE.ORG.UK/TRIPLESOURCE

Manchester Academy's Head of Science, Jo Smiles, is enthusiastic about the impact the programme has had on the quality of its triple science teaching and learning. "When we introduced triple science we were conscious that doing so would need careful planning and organisation," she points out. "Thanks to the audit and bespoke action plan that the Science Learning Centre North West has put in place our science teachers feel very supported and confident in teaching triple science."

The positive impact of involvement in the programme is already being seen in students who will sit their final examinations next year, with initial figures showing they are on track to improve results still further, and help ensure, as a Year 10 student commented, that they "get to the right college to continue science at A level and help towards our chosen careers in medicine and engineering."

It is crucial that all pupils with potential, regardless of their family background or the school they go to, are encouraged and inspired to study subjects that will enable them to progress to higher education if they choose. Triple science subjects at GCSE are important in enabling pupils to study the single science A levels that are required for science degrees such as engineering, energy and medical industries. While it will take some time for the full impact of our Triple Science Support Programme to be known, positive feedback from participating schools such as Manchester Academy assure us that the benefits of the programme are already beginning to show.