

Salop Teaching School Alliance
Case Study Outline

Project Title	Innovative Solutions for 'Raising Aspiration in STEM' (Science, Technology, Engineering and Maths)
School/Organisation	Mary Webb School
Date Project taking place	March 2013 – Summer term 2013
Aim of Project	<p>Aim: To improve awareness of STEM careers and training opportunities through an 'inspirational sparks' programme introducing students to STEM Ambassadors and past students working in this field.</p> <p>Benefits for students:</p> <ul style="list-style-type: none"> ● Raise awareness and interest in STEM careers and opportunities. ● Increase enjoyment of STEM learning. ● Develop transferrable skills such as problem solving, teamwork, communication, organisation and research. <p>Benefits to staff:</p> <ul style="list-style-type: none"> ● Improved communication between STEM departments in school. ● Increased awareness of curriculum in other STEM subjects, including awareness of potential links. ● Increased confidence in undertaking STEM projects together. ● Increased enjoyment through being innovative. <p>Improvement in professional development through STEM.</p>
Project Details	<p>STEM Ambassadors Heads of Science, Technology, Mathematics and department staff met to map in potential STEM Ambassadors across the KS3 curriculum.</p> <p>Shropshire Council STEM Ambassador liaison staff were contacted to advertise 'vacancies'. STEM Ambassadors offering help were contacted and asked about their experience in working with KS3 and support they could offer. All responses were collated and departments now have a list of potential ambassadors to invite in during summer term 2013 and beyond. These ambassadors are now being mapped in to schemes of work by each department.</p> <p>Two Science Ambassadors worked with Y7 on their renewable energy project in curriculum time, in the summer term – Les Manning and Leticia Chico-Santamarta.</p> <p>KS3 and selected Y10 students visited Manchester University Engineering Department to meet their student ambassadors to find out more about study and career opportunities. All students completed an evaluation.</p> <p>Y9 students visited Manchester University Engineering Department to meet their student ambassadors to find out more about study and career opportunities. All students completed an evaluation.</p>

	<p>Past students working in STEM fields are being contacted to be part of an 'inspirational sparks' programme where we communicate their learning journey with current students. These case-studies are being displayed at key events such as parents' evenings and will be on permanent display soon in school. These students are being added to our ambassador database and can be invited in to school to speak to students. Responses have been excellent.</p> <p>QR codes are displayed around school for students to scan and to show links to engineering opportunities beyond secondary education.</p> <p>Both university visits were recorded in the 'Webberzine' – our termly magazine which goes to all families and wider members of the school community. Our STEM Week activities where we had visitors in to school were also included. All sessions were photographed.</p>
<p>Who was involved? (collaborative partners)</p>	<p>Teaching staff:</p> <p>Kirsten Mould – Science teacher Jo Hall – Assistant Head and Head of Science Andy Walker – Head of Design Technology Emma Charles – Head of Mathematics</p> <p>Outside professionals:</p> <p>Michelle Evans – Shropshire Council STEM Clerk Science Ambassadors: Les Manning and Leticia Chico-Santamarta (experts in renewable energy) Manchester University Engineering Department Birmingham University Engineering Department</p>
<p>Outcomes</p>	<p>There has been an overall higher awareness of STEM careers and STEM opportunities in school. This is evident through conversations in the staffroom, students overall awareness shown in lesson time and interest in central displays around school (including QR codes).</p> <p>There is a 'buzz' about the 'inspirational sparks' programme, tracking down past students and communicating what they are doing now. Students are contacting the school regularly.</p> <p>Communication is improving between STEM departments. It is clear that one member of staff needs responsibility for making this happen. STEM sessions have been enjoyable, although the organisation can be time-consuming.</p>
<p>Project Evaluation/Impact Outcome</p> <p>How was the impact measured?</p>	<p>6 Science Ambassadors mapped in to science schemes of work. 3 Maths Ambassador mapped in to maths scheme of work, visit planned for 2013/14. 1 Technology Ambassador has responded so far to take part in curriculum support with Technology Department. 2 Science Ambassador visits to school in curriculum time – linked to Y7 energy work. Case study shared with STEM net via the STEM Clerk for Shropshire Council. 10 'inspirational spark' past students sharing their learning journey with</p>

	<p>current students. (This number is increasing all the time)</p> <p>50 selected students visited Manchester University Engineering Department.</p> <p>110 Y9 students visited Birmingham University Engineering Department.</p> <p><u>Student written evaluations show:</u></p> <p>They all know what STEM stands for.</p> <p>They used lots of transferable skills. The most frequently ticked were:</p> <ul style="list-style-type: none"> team-work problem solving communication exploring questioning investigating thinking creatively. <p>They clearly enjoyed the interactive sessions.</p> <p>Students, teaching staff and teaching assistants showed increased awareness of STEM study and careers, being able to give many more examples of pathways open following visits/ambassador support.</p>
<p>Intended dissemination of outcomes</p>	<p>Webberzine celebrates some of the activities undertaken, there will be more in the summer edition.</p> <p>Details will be included in the governors reports.</p> <p>Central displays in school. Displays to be prominent at parents evening and open days.</p> <p>Share Ambassador contact with Shropshire County STEM Clerk. We have also been asked to share case study details on the national STEMnet website.</p>
<p>Next steps for project within the organisation</p>	<p>Meet with Heads of Department to evaluate impact of using ambassadors and decide on next steps.</p> <p>Write a guide for staff on how best to use outside professionals within curriculum time to be included in staff handbook.</p> <p>Continue to compile 'inspirational sparks' – tracking past students and communicating what they are doing now to current students.</p>

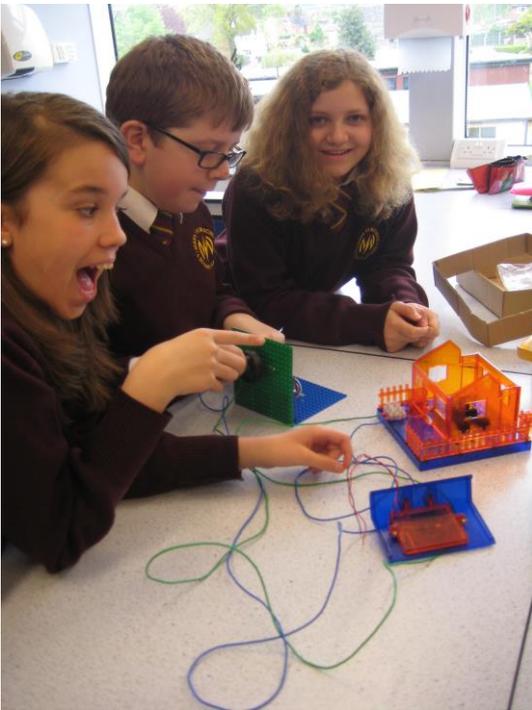
Photographs from Mary Webb School STEM curriculum day, March 2013.



Working with 'Bare Connective' – using conductive paint to create new products.



Working with a graffiti artist to communicate science themes through graffiti artwork on science lockers.



Les Manning, an electrical engineer and STEM Ambassador worked with Y7 on their energy project, May 2013.

Please note your case study will be placed on the Teaching School website therefore if any photographs are supplied we will assume permission has been obtained by the person being photographed or parents/carers.