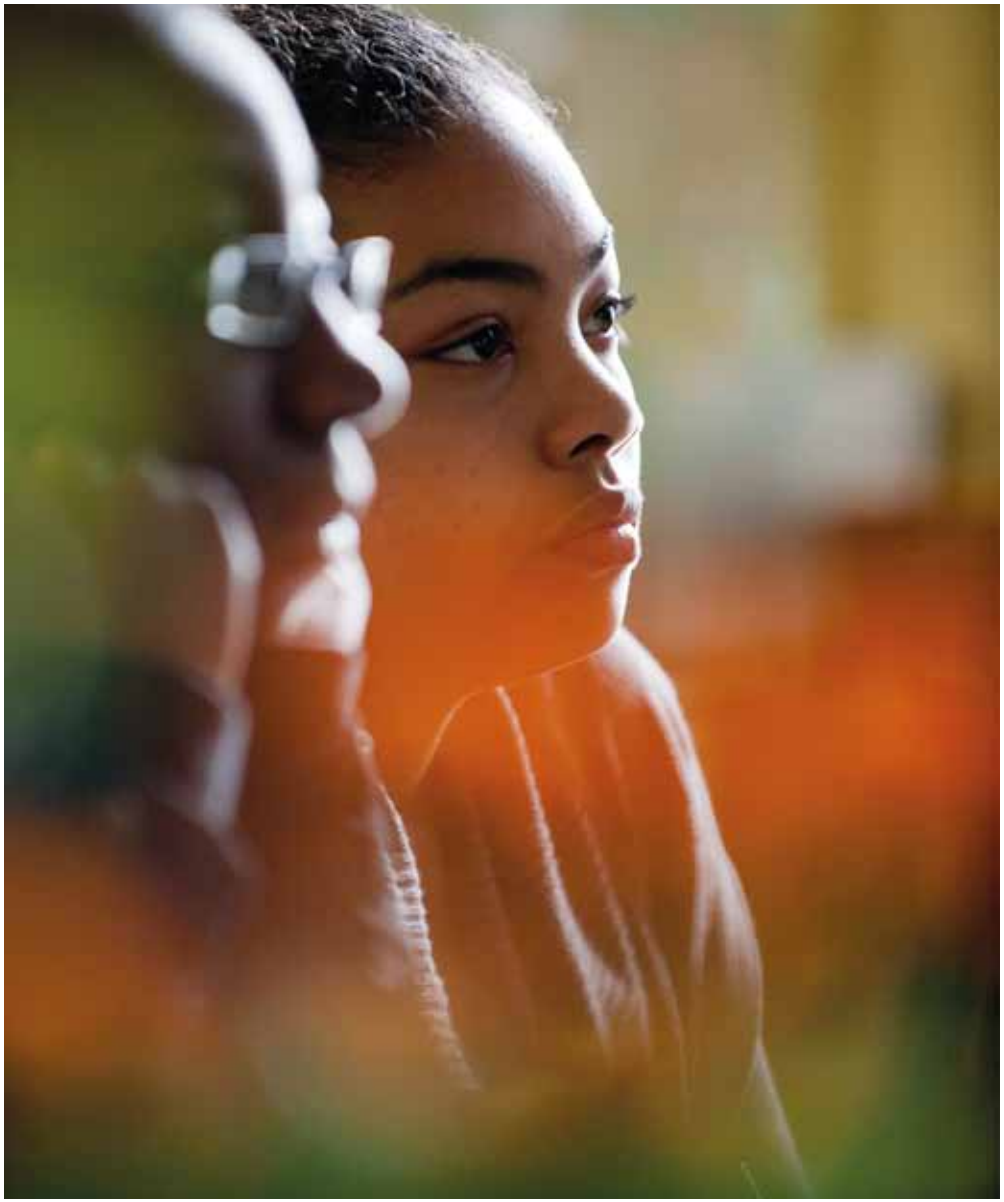
Education research

Working *Together:* Making STEM happen in secondary schools

wellcome trust



Interdisciplinary STEM education stimulates interest in science, technology, engineering and mathematics by demonstrating how the modern world of innovation and discovery relies on the combined application of all four subjects.

Over two years, the Wellcome Trust provided bursaries to schools in the London Borough of Camden to deliver a range of STEM activities that would allow young people to participate in projects that drew on these disciplines in a collaborative way. Schools were given the freedom to develop projects that were suitable for their students and circumstances; however, they also shared ideas and best practice over the course of the project.

This report, *Working Together*, explores the importance of STEM education, the impacts that interdisciplinary learning has on young people and the features that need to be in place for STEM activities to be successful. It presents a series of teaching and learning ideas developed in Camden that could be translated to schools elsewhere.

The report is structured as follows:

- What did Camden schools do?
- The importance of STEM
  - Changing young people's perspectives
  - Creating a positive atmosphere
  - Making links with employers
- Delivering successful STEM activities
  - Harnessing senior leadership support
  - Providing a collaborative environment
  - Developing staff skills
- Activities undertaken by Camden schools.

We hope that the information and insights given here, and in the more detailed accompanying evaluation report, encourage other schools around the country to develop their own interdisciplinary STEM work.

Students of Maria Fidelis consider how to use their STEM garden.

Within the London Borough of Camden lie some of the nation's most treasured scientific, cultural and intellectual institutions, such as the British Museum, the British Library, University College London, Great Ormond Street Hospital, RADA, London Zoo, various Royal Colleges, Wellcome Collection and the Wellcome Library, and the Slade School of Fine Art. Camden is also known for its nightlife, its markets, and the creativity of its ethnically and culturally diverse communities.

The borough's schools perform well in national tests and are staffed by innovative and talented teachers, who have helped position Camden as a beacon of inner city education. The Wellcome Trust chose to draw on the schools' success and on the creative reputation of the borough to develop STEM projects with Camden secondary schools. Because it is based in the borough, the Trust also wanted to build its existing relationship with its local school community.

In recent years, there has been a focus on promoting the uptake of STEM subjects in schools and colleges. This has been driven by the need to ensure that young people gain the skills and aspirations essential for building the UK's economy and to help them participate in a society in which science and technology are increasingly important.

This initiative strove to build on these by demonstrating how they could be achieved within different schools and with a variety of young people, exploring the features that need to be in place for interdisciplinary STEM activities to be successful and the diverse approaches that can work.

In addition to generating teaching and learning ideas that could be used more widely, the Camden STEM Initiative aimed to understand the impacts on the students involved and investigate whether learning in this way led to a greater interest in STEM subjects, leading – in the longer term – to raised attainment and increased participation in STEM study and careers, post-16.

A student at Maria Fidelis discusses measurement.

Encouraging interdisciplinary STEM in different ways

Raising the status of STEM
Young people and their parents quickly pick up messages about the extent to which a school is committed to a certain area of activity. The Camden schools demonstrated their commitment to STEM in several ways, presenting a coherent message: 'We value STEM'. This powerful message was conveyed by, for example, setting a STEM quiz as part of the school induction process, or suspending the timetable in favour of a themed STEM day or week.

Managing the STEM projects
Schools recognised that sustainable STEM activity relied on putting coordinating structures into place. Half of project schools established hands-on management groups, typically comprising a lead coordinator and/or STEM subject coordinators or champions. In one case, a more ambitious group included pupils, parents and STEM Ambassadors. At Acland Burghley School funding was used to appoint a STEM coordinator.

Embedding STEM and providing enriching experiences
The Wellcome Trust gave schools free rein to use their bursaries to support STEM in the way they thought best.

Schools responded to this in two broad ways, sometimes combining both approaches:

1. focusing on delivering enrichment activities for all or some of their pupils
2. adapting schemes of work to make links between STEM subjects, embedding these in the everyday learning of students.

Examples of specific activities are provided at the back of this report.

Schools that attempted to embed STEM in their curriculum provision by adapting schemes of work typically carried out an audit of existing provision, then made use of cross-subject working groups to identify STEM links, highlight any notable gaps, and make changes to the schemes and pilot them. Although most aspired to amend schemes through an entire key stage, they tended to do so one year at a time.

Many schools made use of a thematic approach, either to slot a new set of learning materials into the curriculum or to take advantage of the interdisciplinary nature of STEM to address issues such as renewable energy and the school's physical environment. This feature highlighted the particular value of STEM education as a mechanism for exploring important challenges such as energy security, food security and sustainable development.

Some schools did not limit themselves to STEM subjects and embraced interdisciplinary learning across the curriculum. The creative nature of STEM subjects can often be underplayed at the school level, and they can be seen as completely detached from more creative pursuits. Many Camden pupils were fortunate to have participated in science and art projects that highlighted the potential interactions of these disciplines, encouraging those not normally motivated by science to ask questions and explore scientific concepts through painting and collage. Some of the results of these projects can be seen throughout this report.

Changing young people's perspectives and how they learn

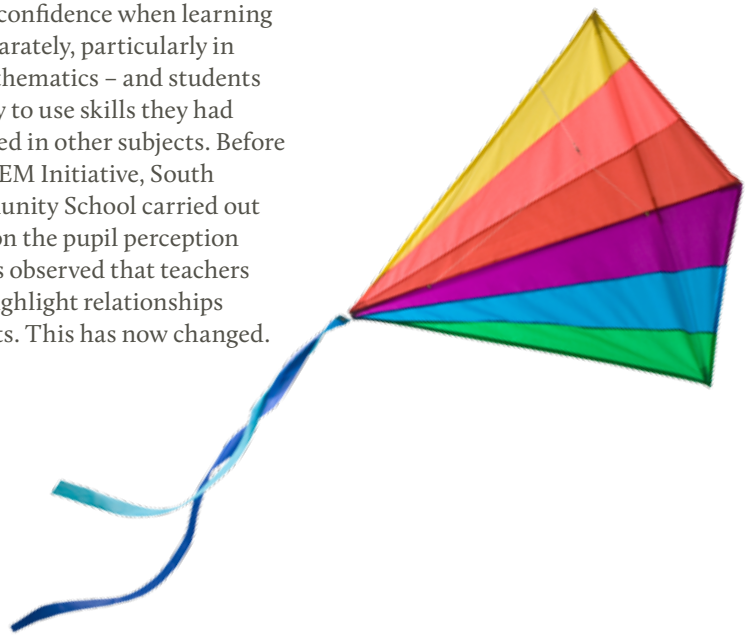
"I think they have a better understanding of some of the relations between the real world and real jobs...and that we just happen to call these 'subjects', to organise a timetable and to split the skills up."

Camden STEM Teacher

The independent evaluation of this initiative by the National Foundation for Educational Research[1] found that the Camden STEM Initiative succeded in meeting its aims in raising awareness among pupils about the connections between STEM subjects. This is captured in one teacher's comment that "as a result of interdisciplinary STEM activities, pupils have begun to realise that they will benefit from transferring learning between the subjects".

1 Straw S et al. Evaluation of the Wellcome Trust Camden STEM Initiative. Slough: NFER; 2012.

At Haverstock School, all students agreed that studying STEM subjects together had increased their confidence when learning the subjects separately, particularly in science and mathematics – and students were more likely to use skills they had already developed in other subjects. Before the Camden STEM Initiative, South Camden Community School carried out its own survey on the pupil perception of STEM. Pupils observed that teachers tended not to highlight relationships between subjects. This has now changed.



"Students' awareness has risen enormously, all the way through the school. In terms of the curriculum making sense, they can see links more clearly now, because we've spent so much time looking for the links between subjects and finding them."

Camden STEM Teacher

Case study: Maria Fidelis

New shoots from STEM

The potential to make use of STEM to address environmental issues is strong, and Year 7 and 8 students at Maria Fidelis School proved their 'green STEM' credentials during their annual Activities Week. Working across year groups, participants planted a garden area, built 'bug hotels' and constructed high-quality bird boxes. It was the first time the technology department had worked alongside science and mathematics, but it won't be the last.

The approach encouraged students to consider the wildlife in the school's urban environment and made use of research and practical application to promote greater local biodiversity: the students had to decide which plants to grow to promote birds and insects, as well as constructing the bird boxes and positioning them carefully around the school grounds.

Teachers commented on how well the students worked together and the pride they took in their designs. Now bird boxes have been placed in prime locations on both school sites, students will continue to watch them and see how their cross-curricular approach leads to a richer and more diverse local environment.

Left: Ant. *Istock/Kameleon007.*
This page: Students at Maria Fidelis School investigate different soil types.

Creating a positive atmosphere and improving motivation and enthusiasm

> “It’s been lovely taking students on interesting activities and seeing them become engaged, and it’s been enlightening for us.”
>
> **Camden STEM Teacher**

The National STEM programme highlighted the part that informal learning experiences play in pupils’ enthusiasm for STEM,[2] and this was also demonstrated by the Camden STEM Initiative.

The STEM Coordinator at Maria Fidelis School expressed delight at the level of enthusiasm and engagement she had observed among her pupils, who were very proud of the STEM enrichment work they had done.

A student at Maria Fidelis School builds a bird box for the new STEM garden.

2 POST. Informal STEM Education. London: POST; 2011.

Making links with employers and raising awareness of STEM careers

It is often a challenge for young people to see links between what they learn in school and what they will be doing in the future. It can be harder still to make connections between the knowledge, skills and facts learnt in school and how these can lead to the resultant products of innovation they see around them.

A CBI survey published in 2010[3] found that 100 per cent of the science and technology employers consulted were seeking talented employees with skills in STEM subjects; surprisingly, however, employers in half (47 per cent) of the retail sector were also seeking employees with these skills.

STEM subjects are prized for the transferable skills they teach, such as quantitative and analytical approaches to problem solving, team working and attention to detail. It is, therefore, important that tomorrow's citizens and workers have the opportunity to gain a real sense of the value of STEM, in relation to employment and to the broader skills necessary to navigate through a complex and ever-changing world.

All STEM education encourages young people to think about their future. Careers provision in schools is about to undergo major change,[4] after which all schools will be responsible for delivering a statutory level of provision and centrally funded careers advice will be removed.

It is likely that curricular subjects, and the teachers of those subjects, will soon play a greater part in pupils' careers education. Some of the activities within the Camden STEM Initiative were explicitly linked to careers. Haverstock School contacted the parents of Year 8 pupils who were achieving highly in one or more STEM subjects to highlight the benefits of choosing design and technology (DT) at the end of the key stage. STEM coordinators also gave a presentation to Year 9 pupils, who were about to choose their subject options.

The STEM Ambassadors scheme[5] was used by several participating schools; one of the best ways to demonstrate the value of STEM subjects is to draw on the enthusiasm and expertise of people who use STEM every day in their work.

Flu virus artwork from Year 8 pupil, Camden School for Girls.

3 CBI. Ready to Grow: Business priorities for education and skills. CBI; 2010.
4 Towards a Strong Careers Profession – An Independent Report to the Department for Education. London: DfE; 2010.
5 www.stemnet.org.uk/content/stem-ambassadors

Barriers to overcome

Interdisciplinary STEM projects challenge secondary schools at a fundamental level because school buildings, staffing and even timetables are dictated by well-established curricular structures that are resistant to change. Therefore, despite the importance of STEM learning and the positive outcomes it can produce, most teachers have neither the time nor the expectations to make connections across subjects, even the most closely related ones.

Science is often seen as the driver for STEM; however, it is important that teachers from across the curriculum are able to contribute their expertise and ensure the proper integration of their subject area (generally science, mathematics and DT; engineering is often absent because of a lack of staff with relevant expertise).

Planting the garden at Maria Fidelis School.

Features of successful STEM activities

In 2008, the Government commissioned a programme of activity in England to drive sustained change in how schools taught and addressed the links between STEM subjects, supporting it using four strategic areas:

- ensuring the presence of the right teachers to deliver STEM subjects
- providing high-quality continuing professional development (CPD) throughout teachers' careers
- enhancing and enriching the STEM curriculum
- communicating the diversity and value of STEM career opportunities.

This National STEM Programme and the Camden STEM Initiative found several important factors that were key in overcoming barriers to STEM learning. The most important of these were senior leadership support, the commitment of adequate resources and the appointment of a school STEM coordinator – with clear lines of responsibility for organising interdisciplinary STEM work and associated responsibility payments and designated planning time within the school day.

A collaborative and open working environment is also crucial to the development of STEM working. National projects and the Camden STEM Initiative have shown that students' STEM learning experience is improved where schools set up standing STEM working groups, especially if membership includes careers and senior leadership representation. These working groups can provide substantial support to teachers tasked with developing STEM projects, as well as providing a professional development opportunity. Ensuring that staff members who are involved have the necessary expertise and support is also crucial; the professional development opportunities accessed by staff during the Camden STEM Initiative are outlined in the section on developing staff skills.

Designs for a kite and testing the prototype at South Camden Community School.

Case study: South Camden Community School

“Euston, we have a problem...to solve!”

With NASA’s Space Shuttle programme coming to an end, tomorrow’s aeronautical engineers were busy taking the first small steps towards giant leaps in aircraft design. As part of ‘Enginuity’, a dedicated STEM creativity week, students at South Camden Community School in Euston were designing and building kites to help them understand the principles of flight. Participants tested and adapted their designs before competing in a timed flight trial to discover whose prototype worked best.

As in other successful STEM activities, the students’ enjoyment was improved by involving experts. The project also drew on the school’s cultural diversity by looking at the worldwide enthusiasm for kite flying. The school’s STEM coordinator summed up the experience, saying: “It was a successful and joyful project that strongly encouraged teamwork and taking on a challenge.”

Building kites at South Camden Community School.

Harnessing senior leadership support

> “There has been a cultural shift with management strongly supporting STEM. In their view, this does flow down to affect the kids.”
>
> **Camden STEM Teacher**

The Camden STEM Initiative has not yet had time to have a measurable influence on pupil attainment (the barometer of impact for most senior managers), but the response from head teachers has been positive.

The Government’s intention for schools to report on students’ progression into higher education, training and future careers might place STEM and STEM careers provision higher still on the agenda for head teachers.

Staff time is highly prized; therefore, it is natural that school senior leaders should be protective over the introduction of additional commitments for their staff. Evidence from the nationwide STEM Careers Awareness Timeline Pilot[6] has shown that teachers look to senior leaders’ commitment to an initiative as an indicator of its likely longevity. Teachers are able to get a sense of the importance their senior managers attach to STEM work through several factors, including whether they appoint an overall coordinator, whether they incorporate STEM into the school development plan (SDP) and other key policy documents, and whether they ensure it is included as a standing agenda item at meetings of the school governors.

The importance of the relationship between management commitment and inclusion in school policies is well made by a teacher at one Camden school: “STEM is right there, it’s in our SDP. So we’ve got support for it, all the way, from the top of the school.”

Sustained benefits are more likely in schools where STEM is enshrined in the decision-making and policy structures in these ways, and all head teachers in Camden expressed their support for this approach.

The challenges faced by Camden schools in deploying scarce resources, including time, are echoed in other locations in England. To make it easier for school leaders to ensure that STEM can be an important part of the school, the Timeline team and the National STEM Centre have developed two strategic planning tools that can help school leaders put in place some of the features proved to support a sustainable STEM programme. These tools can be found in the National STEM Centre’s eLibrary.[7]

6 Finegold P et al. Good Timing: Implementing STEM careers strategy in secondary schools. CEI, University of Warwick; 2010 (www.nationalstemcentre.org.uk/res/documents/page/Good_Timing_report_November2011.pdf).
7 www.nationalstemcentre.org.uk/elibrary

Providing an environment where collaboration can thrive

At its core, the philosophy underpinning interdisciplinary STEM is that technological advance and discovery rely on collaborations between researchers, innovators, engineers and mathematicians. One of the aims of interdisciplinary STEM education is to convey this idea to young people through their own experience. Team working is an essential prerequisite for successful STEM work and was evident in pupils' investigative approaches and in the way in which teachers in STEM departments worked together.

> "Teachers have been working together, and it's been a bit more like 'team teaching'."
>
> **Camden STEM Teacher**

Within the Camden STEM Initiative, the greatest successes in collegial working took place among STEM subject coordinators and heads of subject. Teachers also cited examples where cooperation between STEM departments and the individuals within these departments took place.

Almost all participants believed the initiative had enabled them to work more collaboratively with their colleagues, and new partnerships with external agencies such as university departments and local employers were also formed.

Providing a context in which STEM teachers were encouraged to work together was an important feature of this initiative. Many had previously wanted to collaborate but perhaps found it difficult to justify against competing priorities; however, following this work, the majority now believe that forging links between science, mathematics, engineering and technology should be a priority for their school.

A student perfects his final kite design at South Camden Community School.

Developing staff skills

Some of the most effective professional growth for teachers arises when implementing new curriculum approaches. An encouraging outcome of the Camden STEM Initiative related to CPD opportunities: one-third of teachers involved in the project experienced some form of CPD over its duration.

A STEM subject lead at Haverstock School recommended the initiative for its professional development value, noting that an important outcome was a much better understanding of other STEM subjects.

La Sainte Union hosted two evening CPD sessions (using funding from STEMNET and the Camden STEM Initiative), attracting teachers of science, mathematics and DT, who were able to come together to share ideas. Further staff training took different forms. One South Camden Community School teacher took a trip to CERN in Switzerland, and various STEM teachers attended courses at Science Learning Centres and made informal visits to neighbouring schools to share their skills and expertise.

At Maria Fidelis School, the STEM interdisciplinary group noted that they had "learned a lot" from the involvement of a technology teacher in the planning and delivery of STEM work.

Teaching staff appreciated opportunities for networking with colleagues and the chance to pick up ideas from each other. At La Sainte Union School, there was a sense that STEM staff got to know each other better as a result of the initiative, which provided an opportunity for "re-motivation and enthusiasm for the job".

Artwork of a microscoped surface. Year 8 pupil, Camden School for Girls.

Case study: Parliament Hill School

The *Fruit Juice* solar car challenge: certainly no lemon

In 2011, six Year 9 pupils took on both climate change and energy security when they applied their STEM skills to design a car powered by sunlight, in a scheme run by London South Bank University. With the assistance of a university engineering undergraduate, the pupils spent six weeks working as a team on two designs – *Short Circuit* and *Fruit Juice*. Both prototypes were put through their paces against competitors from Southwark, Camden and Lambeth at the University's Solar Car Challenge Day, one Saturday in June. The hours of designing and refining the vehicles paid off when the team achieved a creditable third place out of 20 participating schools in a race over distance.

Among the rave reviews of the experience, one pupil captured the essence of the Camden STEM Initiative, saying: "The day was not only fun and enjoyable but also extended my knowledge of physics, especially of some forces that I did not know about."

One of the many notable consequences detected within the school is a change among teaching staff in how they approach collaborative projects. Parliament Hill now runs Create and Be Curious, an after school STEM club that combines the former science and design and technology clubs (and has a substantial input from maths, too).

A student from Parliament Hill School explains the design of their solar car.

"Oh, this is sad…the worst part…now we go home!"

Year 9 Parliament Hill pupil

Artwork "Inspiration – Planets", Year 8 pupil, Camden School for Girls.

Activities undertaken by Camden Schools

Haverstock School

- Three STEM coordinators were appointed (in science, mathematics and DT; the science coordinator was assigned overall leadership). The coordinators attended termly STEM meetings and were involved in professional development at the London Science Learning Centre.
- A mapping exercise was carried out to identify STEM links between the individual subjects in schemes of work at Key Stage 3, leading to the embedding of STEM activities within the schemes. The work was carried out on a rolling basis, from Year 7 to Year 9.
- The lead STEM coordinator collated a set of additional STEM activities that she had developed and piloted with her students.
- Pupils identified as gifted and talented were offered additional enrichment experiences; for example, Year 8 pupils took part in a climate change workshop.
- The school wrote to parents of Year 8 pupils who were achieving highly in STEM subjects to ask them to consider encouraging their children to choose DT along with science and mathematics.
- At the Key Stage 4 options event for Year 9 pupils, each of the three STEM coordinators described the broad range of career options from STEM subjects and what pupils could do to keep these options open.
- A set of STEM lessons was devised and delivered for each year group from Year 7 to 9:
  - in the Year 7 Rockets Project, which focused on rocket propulsion, pupils studied forces, launched rockets and took measurements such as angles of ascent
  - in the Year 8 Bridges Project, pupils investigated materials used in bridge building
  - in the Year 9 Solar Car Challenge, a group of Year 9 pupils designed and built a solar car, which earned them a British Science Association Bronze Crest Award.
- The status of STEM within the school ethos was raised by, for example, including a STEM quiz in the school diary for all new Year 7 pupils and creating STEM displays throughout the school.

South Camden Community School

- A working party was set up, comprising a STEM coordinator in DT and two subject champions in science and mathematics. The working party members took part in professional development, and some of their learning was passed on to colleagues through cascade training.
- The school set out to embed STEM within schemes of work across science, mathematics and DT. This included adding a colour-coded logo to PowerPoint slides to indicate to students when links to other STEM subjects were being made within normal lesson time.
- After-school STEM clubs were set up for pupils from Key Stage 3 and Key Stage 4, targeting hard-to-reach, and gifted and talented pupils.
- A STEM creativity week took place for Key Stage 3 pupils.
- Transport for London and the Smallpeice Trust ran a young engineers' day for Key Stage 3 pupils, based on transport safety.
- A group of pupils visited the Institute of Mechanical Engineers to meet engineers from a range of backgrounds. These pupils then developed and presented an assembly in which they described to their colleagues what they had discovered.
- The school planned a programme for National Science and Engineering Week, including fossil hunting in Hastings and an astronomy workshop at University College London, together with a follow-up lecture in school.
- Twenty-eight Year 8 girls took part in the 'Robo Girls' event, during which they built and programmed robots.

La Sainte Union Catholic School

- A thematic approach to STEM across the school, with the title 'Garden of Eden', was intended to enthuse pupils about plants and their importance to our lives.
- Year 9 pupils built geodesic domes (using lightweight, recyclable materials), which they used to compare environmental conditions inside and outside the domes. The domes have been used to develop a vegetable garden under the stewardship of Year 9.
- Year 8 studied biodiversity, including a visit to Cocoon at the Natural History Museum, which they then wrote about in a newspaper article during a visit to the *Guardian* newsroom.
- Year 10 took part in work related to the Millennium Seed Bank Save our Seeds project, where they discovered how this initiative has been developed as an insurance policy against the extinction of plants in the wild.
- Some pupils attended 'Talking Trees', the Royal Institution's Christmas Lecture.
- The school has hosted STEM Ambassadors.

Maria Fidelis

- The school established an interdisciplinary STEM group composed of staff from all STEM subjects.
- A learning community was formed, comprising teachers, parents, other external agencies (such as STEM Ambassadors) and pupils. Parents and external participants provided materials and equipment and helped pupils.
- The school adopted the theme 'students tackle environmental matters', which focused on their school building, including its design and efficiency, with a focus on energy conservation and the use of materials.
- After the cancellation of the proposed Building Schools for the Future funding, the school has made use of its STEM programme to improve its environment.
- The STEM group has developed a small conservation area, which it uses as a location for (and a symbol of) its STEM activity, including regular lessons.
- The Smallpeice Trust provided professional development for teachers within the working party.
- The science department has incorporated a sustainability project, using activities developed to date.
- The science and art departments have collaborated on a joint project, 'The Rivers of the World'.

Camden School for Girls

- The school drew upon a simulation of a disease outbreak during the school's Science Week to initiate interdisciplinary links between the STEM subjects and geography, history, English and IT. This involved a programme outside of normal lessons and included external speakers and school visits.
- The Science Week was led by members of the science club.
- STEM teachers took part in professional development linked to Key Stage 3 STEM, working together on collaborative learning in science and DT.
- A Year 9 science project involved pupils carrying out research in groups of three or four. The teams presented their findings through a visual display or at a science fair in summer 2011.
- Year 8 pupils took part in a science-related art project, with a trip to the Natural History Museum to provide initial inspiration for their creative ideas. Their visual representations of a scientific idea or concept were displayed as part of a competition during the science fair, and the head teacher and a member of the science department decided the winners.
- Science schemes of work were revised, drawing upon STEM examples to ensure that the schemes support good science teaching using mathematics skills and knowledge.
- TV scientist Dr Mike Leahy gave a talk to all Year 7 and 8 pupils.
- The school purchased equipment that would enable greater interdisciplinary STEM activity, including data logging, microscopes and human physiology equipment for measuring heart rate and breathing.

Acland BurghleySchool

- A paid STEM Coordinator was appointed.
- The school adopted a thematic approach, showing STEM applied to real life.
- An Olympics-themed day, with four activities available, was planned for Key Stage 3 pupils.
- The school hoped to set up a science and engineering club for Key Stage 3 and 4 pupils.
- Interdisciplinary units were developed around the theme of 'Smart Materials', to be used in science, DT and mathematics.
- A science and technology fair in summer 2010 targeted Key Stage 3 pupils, who carried out project work and met STEM employers.
- A bursary was made available to support a sixth form STEM student.
- STEM teachers attended professional development courses and heads of department ran internal STEM CPD to raise awareness of STEM activity.

Parliament Hill School

- The school hosted a STEM week with the theme 'communication'. The week's activities included a poster competition for Year 7 students, a presentation from an expert on neuronal communication and 'The Big Debate', which focused on the issue of human evolution and included input from Professor Steve Jones.
- The school participated in the Solar Car Challenge.
- An after-school STEM club has been started, combining the existing science and D&T clubs and including maths as well. The club is called 'Create and Be Curious', and its first project looked at kite building.
- Seven Year 9 students represented the school at a Wind Energy Challenge Day, competing against several other local schools. Students had to design and build the wind turbine that would generate the maximum power output in the most efficient and consistent way. Students achieved the British Science Association's Bronze CREST award.
- The school appointed a STEM coordinator.

Chalcot School

- The school developed a project based on the production of useable heat and electrical energy for the school from wind turbines and solar panels. The project was aimed at Key Stage 3 and 4 pupils and included building working models to generate electricity.
- Chalcot's approach incorporated mathematics, science, and craft design and technology.
- Two teachers attended professional development at the Centre for Alternative Technologies, related to the generation of energy through wind turbines and solar panels.

Hampstead School

- The school's traditional 'science week' became 'STEM week'.
- New schemes of work were introduced for STEM week and used to make better connections between STEM and other curriculum areas.
- A STEM club was set up. STEM club activities included the development of an electric car to enter the Greenpower competition.

Planning the STEM garden at Maria Fidelis School.

An executive summary and full report of the evaluation of the Wellcome Trust's Camden STEM Initiative are available to read and download at **www.wellcome.ac.uk/educationreports**

Report author:
Peter Finegold, Isinglass Consultancy Ltd.

Wellcome Trust
The future of science depends on the quality of science education today.

We are a global charitable foundation dedicated to achieving extraordinary improvements in human and animal health. We support the brightest minds in biomedical research and the medical humanities. Our breadth of support includes public engagement, education and the application of research to improve health. We are independent of both political and commercial interests.

Wellcome Trust
Gibbs Building
215 Euston Road
London NW1 2BE, UK
T +44 (0)20 7611 8202
F +44 (0)20 7611 8857
E @wellcome.ac.uk

www.wellcome.ac.uk

PU-5236.2/300/06-2012/AF

Cover image: Rainbow delta kite.
iStock/ElementalImaging