



leading
change

Teachers attending a PSTT cluster meeting

PSTT... HAVE YOU HEARD?

Key words:
CPD

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Kathy Schofield explains how the Primary Science Teaching Trust came into being and how it continues to enhance science for primary teachers and children
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The Primary Science Teaching Trust (formerly the AstraZeneca Science Teaching Trust) provides financial assistance to help improve the learning and teaching of science in the UK. The Trust was established in April 1997 as an independent charity operating with a substantial trust fund donated by AstraZeneca PLC. Its name was changed in 2013 to the Primary Science Teaching Trust (PSTT). The Trust provides financial assistance, via projects and other means, to improve the teaching and learning of science in primary schools. Since its inception the Trust has funded over 100 projects and invested

over £5,000,000 in UK science education. It is now one of the major voices in the area of primary science teaching and, despite the focus being on UK teaching, it has developed an international reputation and it is still developing and growing in order to continue with its original aim.

The Trust has also sponsored the annual Primary Science Teacher of the Year Awards since 2002, which recognise excellence in primary science teaching.

Back to college

When the current director, Dudley Shallcross, Professor of Atmospheric Chemistry at Bristol University, took up his post in 2010, the Trust took on a new direction and strategy. He began by establishing the Primary Science Teacher College, which drew together past winners of the Primary Science Teacher of the Year Award into a virtual college. All new winners of the award automatically become fellows of the College; teachers who have held the status of Advanced Skills Teacher (AST) can now

also become members.

The College has its own annual conference, web area and, most importantly, its own funding from the Trust, so that these excellent teachers can develop new projects, undertake professional development and disseminate best practice from their own teaching. Some fellows are involved in larger projects with other institutions or partners that are also funded by the Trust.

What the Trust does now

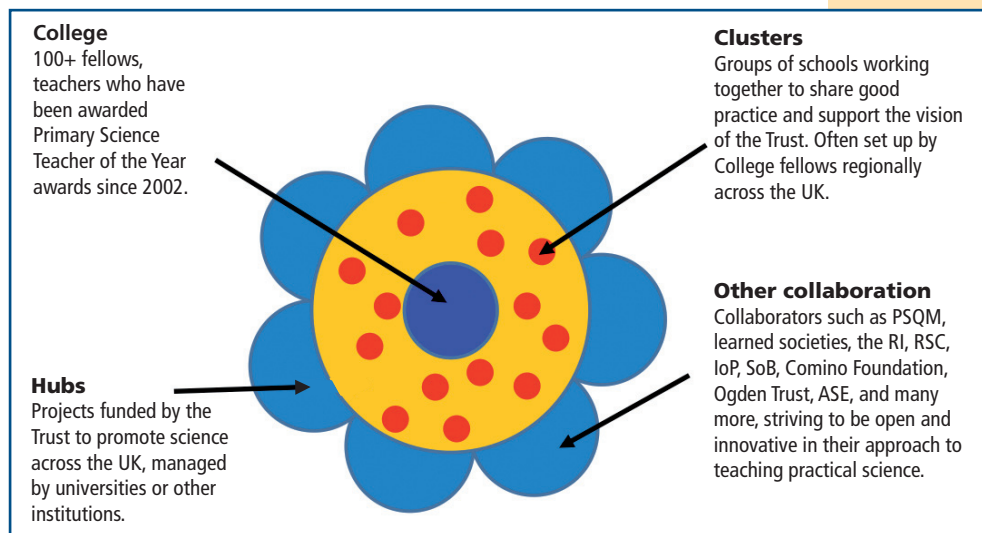
In 2013 the Trust was rebranded and the new Primary Science Teaching Trust (PSTT) was launched at the ASE summer conference. Since that date the work of the Trust has changed direction. Instead of funding large projects, often submitted by large institutions with a research focus, the main focus now is mainly through the primary

sector using the model of clusters and hubs (Figure 1, Boxes 1 and 2). The importance of the College has been further reinforced by partnerships with learned societies and other trusts. The College fellows are endorsed by these societies and are becoming increasingly involved

in supporting these partners to develop their connections with primary science teaching and learning. The Trust has a clear vision for the future based on a strategic plan:

To see excellent teaching of primary science in every classroom in every

Figure 1 How the PSTT now focuses its energy and funding



Box 1 What it means to be a PSTT hub

PSTT are supporting the development of seven hubs spanning the UK. Hubs are usually found in higher education institutions and benefit from a three-year relationship with the Trust. Each hub is quite distinct, but all share the core purpose of supporting the Trust in achieving its mission of 'every teacher in every school offering high-quality primary science teaching and learning to their pupils'. Here are a couple of examples of PSTT Hubs in the making.

The Bath Spa Hub

The Centre for Research in Early Scientific Learning (CRESL) at Bath Spa University consists of a team of researchers who work with schools to develop primary science. Its extensive links with schools across south-west England, through teacher-training partnerships, provide opportunities for research and professional development that can then be disseminated more widely.

The focus for this hub is the Teacher Assessment in Primary Science (TAPS) project. TAPS aims to synthesise an approach to teacher assessment that supports both formative and summative assessment of skills and knowledge. It will meet the requirements of the revised National Curriculum in England and exemplify 'best practice' across the UK and internationally.

The approach will be developed and tested with a cluster of 12 schools over a three-year period. In addition, the project will draw upon the expertise of the Primary Science Teacher College and Primary Science Quality Mark (PSQM) schools. Through the creative application of e-portfolio technology, TAPS aims to design with teachers and children an approach that meets the key criteria of validity, reliability and manageability.

The University of Manchester's Science Education Research & Innovation Hub

Based within the Faculty of Engineering and Physical Sciences and directed by Dr Lynne Bianchi, the PSTT is based within a larger hub which aims to enrich the opportunities for collaborative activity

between primary and secondary schools, university researchers and a range of educational partners. PSTT activity dovetails into work with other partners such as the Comino Foundation, The Ideas Foundation, The Expansive Education Network and Huthwaite International. The purpose of the hub is to:

- develop effective teachers and communities of practice working on enhancing science and engineering education in primary and secondary schools;
- explore models of continued professional development of teachers;
- contribute to the understanding of effective pedagogies for teaching, learning and assessment of primary science and engineering through academic publications and dissemination routes;
- help motivate young people about further study and careers in STEM subjects;
- capitalise on and promote the expertise and partnerships offered within and beyond the University of Manchester, as a means of profiling its work and achievements.

This hub's work champions innovative curriculum development undertaken with teachers and related research in primary science, with associated links into engineering education at primary level. Its main mission is to engage children, their schools and their local communities in real and relevant science experiences from an early age. A variety of innovative projects, such as Scientific Weaving and Smart Scientists, provide opportunities for teachers to partner with leading university researchers, encouraging us all to really push the boundaries of primary science teaching and learning.

School partnerships are at the heart of the work of this hub, often being realised through short-, medium- and long-term research and innovation curriculum development projects that enhance the opportunities for teachers' professional development. Associated academic research adds rigour to the activity being undertaken.

Box 2 Collaboration

PSTT has joined forces with the learned societies to assist teachers to cover all aspects of science in context as this example illustrates.

Sarah Eames, a year 4 teacher (ages 8–9) at Sandfield Close Primary School, Leicester, has an Endorsed Teacher Fellowship from the Institute of Physics (IoP). Sarah is also a Rolls-Royce Science Prize finalist and is following the National Curriculum aim to equip children with the scientific knowledge required to understand the uses and implications of science, today and in the future. In other words, *real science, real scientists, real jobs*. The children Sarah

teaches are working scientifically using a range of enquiry-based methods across the school, across the content areas of the curriculum, and with a range of others (parents, university colleagues). As a result of this work her school was acknowledged by Ofsted for its standards in engaging pupils in science.

Sarah is one of the many College fellows who are using drama effectively in science, engaging parents and grandparents of EAL (English as an Additional Language) children in the teaching of science, using outdoor learning or thinking skills to engage children.



A PSTT College fellow at work

primary school in the UK, where every teacher is confident in their ability to teach primary science.

Putting the Trust's vision into action

The National Curriculum for Science in England aims to ensure that all pupils develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. In support of this, and the increased focus on different enquiry types, the PSTT College is working to promote the teaching of the principles and big ideas of science education. This involves

encouraging development in understanding of the nature, processes and methods of science through different types of science enquiries, so children will become more able to answer scientific questions about the world around them.

The Trust is proud of what it is achieving and it has much to share, as well as still having much to learn. This learning will not come from teaching materials or resources and for this reason the Trust is actively engaging with its colleagues in the science education and STEM arena.

As a Trust, we are passionate about encouraging primary teachers to ask: *How can we push the boundaries of primary science?* We feel that the new curriculum offers a real opportunity to consolidate what is good practice and to try to refine those areas that really enable children to think, feel and work scientifically. We realise that there are many teachers who are quietly, below the radar, enhancing the quality of primary science, sometimes fighting an uphill battle with the diminished priority given to science in recent times. We want to work with these teachers, supporting them and

helping them to develop further themselves and to support others.

This isn't just for the new English National Curriculum: our aims are UK wide and we are working alongside our fellows and teachers in Northern Ireland to raise the profile of science in *The World Around Us* area of their curriculum. There are currently 13 fellows in Northern Ireland who are gathering momentum to spread the word about the importance of practical science for the future of the next generation of teachers in Northern Ireland. We also have connections with Wales and Scotland who have the own curriculum issues but are always willing to share and collaborate with PSTT.

We look forward to supporting primary science across the UK and we believe it will be a time for reflection and development as we watch how events unfold in Northern Ireland and how the new curriculum in England is interpreted.

We invite you all to wonder about this with us and extend an open invitation to teachers and other interested parties to get in touch and collaborate in order that we interpret this new primary science curriculum sensibly, wisely and, most importantly, creatively.

To explore our resources or find out more about PSTT please visit our website and feel free to get in touch if you have any queries you would like addressing. We are about sharing good practice and collaborating with as many people as possible to have a positive impact on children's learning in primary science.

Website

Primary Science Teaching Trust: www.PSTT.org.uk

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