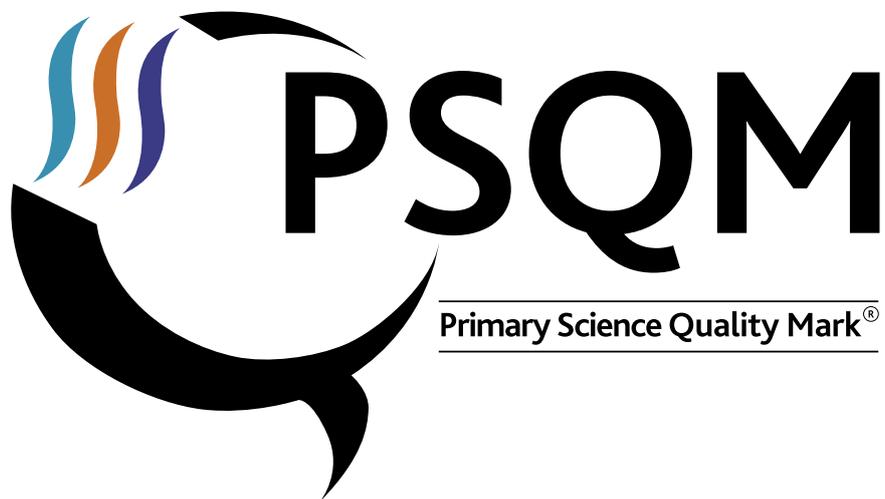


The power and potential of the
Primary Science Quality Mark

Raising the profile and quality
of science in 1000's of UK
primary schools since 2011



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Everything I did for the PSQM process has been invaluable. I am very proud of science at my school this year. The profile of science has been raised beyond expectations and my challenge now is to continue the good work and raise the profile even higher. Many thanks to my hub leader and all at PSQM. You are fantastic!

Birmingham science subject leader, Sept 2020



FOREWORD FROM JANE TURNER, PSQM DIRECTOR

The PSQM mission is to transform lives by improving science education in every primary school, for every teacher, for every child.



I am pleased to present this report which provides information about the Primary Science Quality Mark, highlighting our achievements and impact on primary science as well as outlining our business model and ambitions for the way ahead.

The Primary Science Quality Mark (PSQM) transforms primary schools and communities - growing confident leaders and teachers of science, building children's attainment and aspiration in science, and shaping the culture of a primary school into a place where every child, teacher and family thinks 'science is for them'.

From a simple idea, PSQM has grown over ten years into a nationally and internationally recognised brand, known for its commitment to developing high quality subject leadership and practice in primary science.

In 2021 over 10% of UK primary schools hold a current Primary Science Quality Mark or are working towards achieving one. I am incredibly proud of the difference PSQM has made to hundred's of thousands of teachers and children. Our sustained recruitment, our reputation and our stakeholder support reflect how highly the primary schools and science education communities value this professional development. The past year has been particularly challenging, and we know the pandemic has had a negative impact on children's access to science learning. I therefore pay tribute to the many schools who have continued to champion and develop science leadership, teaching and learning with the support of PSQM; never before has science been so relevant and important to children's lives.

Jane Turner

PSQM KEY ACHIEVEMENTS IN 2020-21

Despite unprecedented and challenging times for everyone involved in primary education, PSQM responded by providing powerful and valued support and succour to 1000's of teachers throughout the pandemic, as well as a rigorous development programme to keep the profile of primary science high.



PSQM is an organisation that looks out for the teachers and hub leaders as much as for the children. It is a beacon for all other educational establishments.

Hub leader, October 2020



Successful adaptation of PSQM CPD programme to online model:

611 schools achieved Primary Science Quality Marks in 2021. The average FSM % in these schools is **24.5%**, above the national average.



New online webinar programme implemented offering additional CPD to PSQM schools, plus 2 'festivals' open to all schools:

over 5000 teachers engaged during lockdown.



Strong, sustained recruitment:

1021 schools registered to take part since start of the pandemic



Collaborated with wider science community on pandemic specific resource development:

available for all primary schools via the Association for Science Education, Stoke Opportunity Area and Collins Education.



Roll out of the innovative PSQM hub leader development programme:

building capability and capacity for PSQM, and leading the way for CPD facilitator development in the wider primary science sector.



Many thanks to all at PSQM - your response to the Covid situation has been amazing.

Subject leader, October 2020

IN 2021 PSQM IS HAVING A POSITIVE IMPACT ON



804
schools



13000
teachers



260,000
children

Almost half of these schools are in areas of high socio-economic deprivation

THE POWER OF PSQM



PSQM leads to confident, informed leadership which is making a difference
Subject leaders in PSQM schools articulate enhanced understanding of their roles, improved confidence and capacity to lead, and a more strategic and reflective approach to development.



PSQM connects schools with other organisations to enrich science
Every PSQM submission evidences schools' engagement with STEM organisations to raise children's awareness of science beyond the school gates.



PSQM increases support for teachers
90% of teachers in PSQM schools received support for science teaching compared with 68% in non PSQM schools.
(Wellcome 2017)



PSQM raises the profile of science in schools
Feedback shows an improved profile for science in every PSQM school and a growth in children's science capital.



PSQM increases teaching time
Research shows there is increased teaching time given to science in PSQM schools.
(Wellcome 2017)

“
I now have focus and a voice, and home in on areas that need development. I've developed a shy bairns get nowt attitude and put proposals forward to SLT and grant applications. I am more organised, on the lookout for CPD opportunities, more in touch with staff and mentoring newer subject leaders. The process has made me more assertive.

North Tyneside subject leader, June 2021



 **PSQM**
Primary Science Quality Mark

St Georges CE Primary School

PSQM GILT

Round 16 - Spring 2018-2019

Celebrating a commitment to excellence in primary science

University of Hertfordshire **UH**

 why how?

 PSQM

PSQM MENTORS AND SUPPORTS TEACHERS LEADING SCIENCE IN PRIMARY SCHOOLS

The PSQM programme provides professional development for around 600 new and experienced subject leaders each year, enabling confident, knowledgeable, reflective leadership which results in an improvement in the way in which science is strategically planned and taught across the whole school.



The best training I have ever received. It moved science teaching and learning on rapidly.

Subject leader, October 2020



70% of schools work towards and achieve the entry level Primary Science Quality Mark. In these schools leadership is authorised by the motivation of the quality mark, the rigour of the training and the requirements of the aspirational PSQM criteria. Science regains its status as a core subject with consequent positive impact on children's attitude to and attainment in science.

PSQM

for schools which demonstrate how effective science leadership is beginning to have an impact on science teaching and learning across the school.

PSQM Gilt

for schools which demonstrate how established effective science leadership is having a sustained impact on science teaching and learning across the school.

PSQM Outreach

for schools which meet the PSQM Gilt criteria and also demonstrate impact of science leadership, teaching and learning on other schools.



10% of schools achieve PSQM Outreach. This demanding quality mark is achieved by schools which meet PSQM Gilt criteria and where the effective subject leadership is having an impact on other schools, through direct professional support for subject leaders in other schools or leadership of local clusters. In many Outreach schools the trajectory to system leadership has been precipitated and enabled by the PSQM programme.



20% of each cohort meet the requirement to show the impact of embedded, sustained, evaluative leadership to achieve PSQM Gilt, often, but not always building on a PSQM achieved previously. The criteria provide an ambitious science development goal, as well as a stretching personal target for the subject leader.

PSQM SUPPORTS LOCAL AND NATIONAL SYSTEMS LEADERSHIP IN PRIMARY SCIENCE



The Outreach Primary Science Quality Mark which incentivises and supports outstanding subject leaders to work at both a local and national level to improve primary science



The 90 PSQM hubs which facilitate local, expert led, professional learning communities around a common purpose of improving primary science



Partnerships with leading organisations in the sector to disseminate resources and build their networks



PSQM builds on the work of the Chartered College of Teaching, which recognised that all schools and professional development leads should have access to external support networks, research and case studies, to provide opportunities for them to develop their own understanding of, and expertise in, effective CPD.

STEM Working Party- OUP report



PSQM DEVELOPS, MENTORS AND SUPPORTS OUTSTANDING SCIENCE SUBJECT LEADERS TO LEAD SCIENCE BEYOND THEIR OWN SCHOOLS

To achieve the Outreach Primary Science Quality Mark schools must evidence a commitment to leading professional development and learning in science in other schools.



The SL has successfully led a cluster of schools and has been proactive in sharing her expertise in many areas, leading to impact on teaching and learning in other settings. Evidence indicates that resources and strategies shared with other schools are being actively used effectively.

Feedback to PSQM Outreach submission 2020



PSQM provides a development path for teachers to extend their leadership at both local and national levels



This year, with another inspirational hub leader's support and guidance, I have strived to take more of an active role in impacting the wider science community. With her support, guidance and help in finding opportunities and CPD, I feel much more confident in speaking at conferences, educational writing and seeking new initiatives to help. I will continue to seek pilot projects to help the wider community and as a result of Royal Society of Chemistry training (part of PSQM offer) I am now helping the RSC to develop its primary careers resources. The outreach specific CPD was really beneficial and gave me lots of ideas for how to develop our outreach activities.

Gloucestershire subject, leader June 2020

PSQM SUPPORTS ORGANISATIONS WITH A RESPONSIBILITY FOR SCHOOL IMPROVEMENT



Participation in PSQM by 47 out of the 71 Stoke-on-Trent primary schools successfully enabled the Science Across the City aims of Upskilling the Workforce, Increasing Strategic Status, Improving Connectivity and Building Systems Leadership. The evaluation clearly demonstrated that effective systems leadership depends on the development of strong, strategic communities of practice, which are enabled and informed by a broad and clear understanding of best practice.



The North Tyneside Learning Trust has used PSQM in 2020-21 as a cost-effective programme for school improvement in one third of its first, primary and middle schools.

As a result of the impact of the 'brilliant work' (Amy Banks NTLT Science Lead Practitioner) of the subject leaders and PSQM hub leader, the trust is now funding all schools to participate in PSQM, including those that are ready to reaccredit, moving from PSQM to PSQM Gilt or PSQM Outreach.



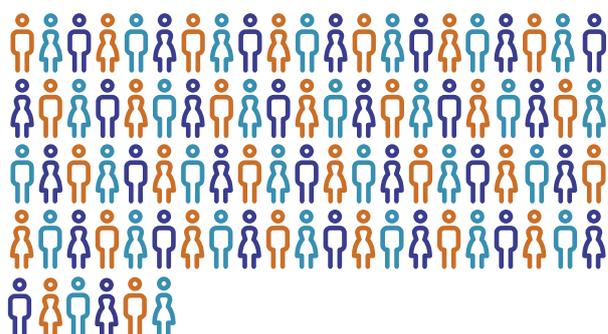
PSQM has been a key driver for improving science subject leadership in Barking and Dagenham since 2011. To date 67% of the infant, junior, primary and all through schools have completed or are working towards a Primary Science Quality Mark, with a 60% reaccreditation rate, showing how PSQM is embedded in the science leadership culture of the borough. PSQM schools provide a

core group of subject leaders that can be relied on for new subject leader support, inputs to the NQT programme, trialling and development of resources and initiatives and hosting of external (including overseas) visitors to the borough. Cross-borough hubs, wider connections and networks have also been built. The clear evidence of practice, reflection and improvement provided to the hub leader/advisory teacher by the PSQM process and submission makes signposting of school to school support, including within the developing clusters, more effective.

PSQM DEVELOPS, MENTORS AND SUPPORTS THOSE LEADING PROFESSIONAL LEARNING IN SCIENCE – PSQM HUB LEADERS

The UK wide team of PSQM hub leaders is at the very heart of the PSQM organisation.

Through its hub leader development programme PSQM is leading the way for the sector in the quality assurance and development of CPD facilitators. The positive response from other organisations has facilitated funded research of this important aspect of PSQM activity, and ensured that PSQM expertise in hub leader development is influencing the national strategy for sector leadership and CPD.



90 hub leaders deliver the PSQM programme to clusters of schools – a 'hub'. Each hub becomes a mini community of practice as hub leaders skilfully guide science subject leaders to identify whole school needs, implement actions and deepen reflective practice, while building professional confidence and autonomy.

The innovative PSQM hub leader development programme provides:

- a clear development route through in-house induction, mentoring, workshops and professional discussions
- a framework of expertise defining performance criteria for hub leaders and a flexible, setting-appropriate development route

The hub leader development programme has enabled PSQM to articulate its values and purpose within the organisation and highlighted the strong culture of professional challenge and collegiality.



New ideas and innovations are coming all the time and are supportive and appropriate to the situation...it's inspirational to work as part of a team where everything comes from a positive perspective.

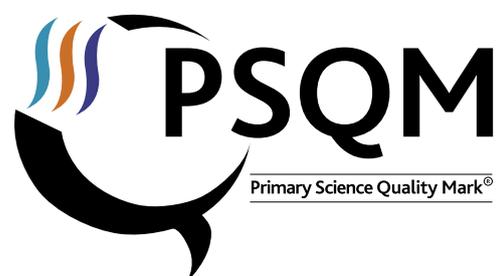
Hub leader, 2020



PSQM ASSETS AND CAPABILITIES

Brand and reputation

PSQM is trademarked. The acronym and logo is a widely recognised brand across the education sector, known for its rigorous subject leadership development, impacting on teaching and learning across the whole school. Reputation is built on high quality expertise and service.



Networks and sector expertise

The hub leader network is made up of some of the very best educators in primary science, who come from a range of professional settings including schools, universities, local authorities, multi academy trusts, teaching schools, and are united by an overwhelming passion for primary science education and a commitment to teachers' development.

PSQM has built a strong stakeholder group from the science education sector and industry. This collaboration and expertise strengthens PSQM organisational work.

Quality Assurance management



Schools present a reflective submission at the end of their PSQM training period to show progress and impact which is assessed against the criteria framework. PSQM has a rigorous system in place for managing this complex process to ensure both consistency and high expectations.

Innovation in programme and resource design

The PSQM team systematically review, create and develop professional development training and resources which support and extend the PSQM programme. These include a criteria framework for self-evaluation, action to reflection planners as well as focussed professional development activities and online webinars.

The innovative hub leader development programme is supporting professional development leaders and building expertise across the sector.

Virtual Learning Environment

The PSQM virtual learning environment enhances the learning experience for both subject leaders and hub leaders by extending the physical training episodes.



External evaluation

In 2018, Wellcome and the Education Endowment Foundation, in acknowledgement of the reported qualitative impact of PSQM on subject leadership, and internal analysis of Local Authority Teacher Assessment data for science, commissioned a nationwide trial of PSQM to test its impact on pupil attainment and impact. 140 schools took part in the Random Control Trial in 2019-21. Due to Covid-19 no attainment testing of children could be carried out, but in Spring 2022 the EEF will publish the report of an extensive qualitative evaluation of the impact of PSQM on science subject leadership and teaching.



Extending reach

PSQM is delivered bi-lingually across Wales, and has also had positive impact in primary schools in Scotland and Northern Ireland. There is a steady demand for PSQM in British International Schools in the Middle and Far East with schools in UAE and Singapore currently taking part. Schools in Northern Spain, where science is taught in English, had also successfully take part in PSQM and a hub is now being launched supported by Universidad de Navarra.

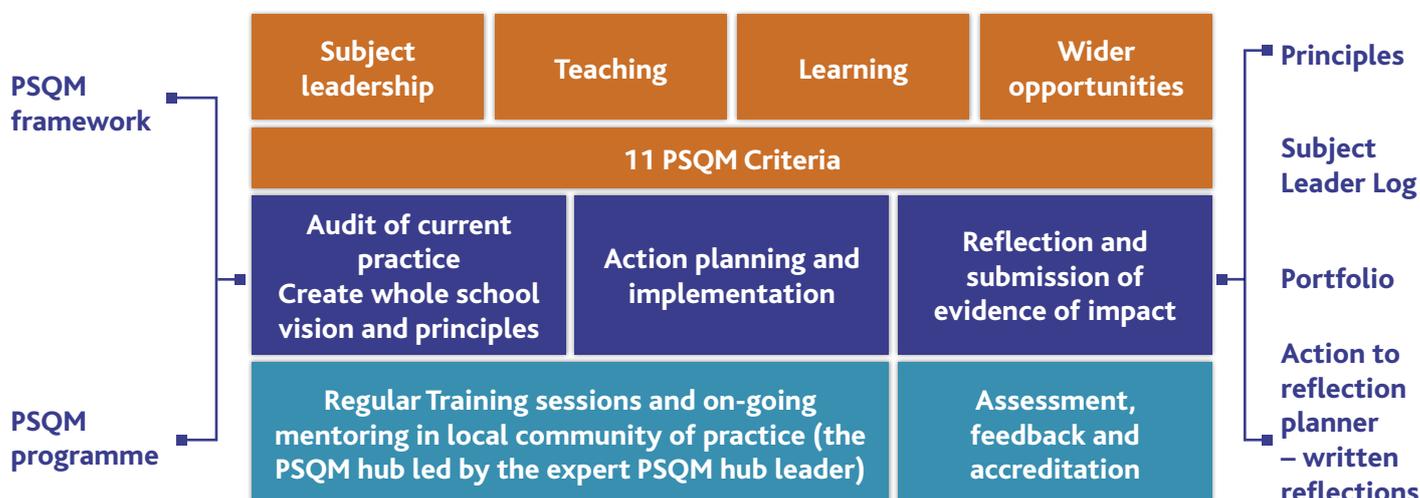
Leadership, drive and passion for primary science education

The PSQM Directors and regional leadership team members are all nationally recognised experts in primary science teaching and CPD, curriculum and resource development and research with an impressive publications list. They have advised on primary science at policy level, present regularly at conferences across the UK and overseas, and carry out additional senior leadership roles in the science education community.

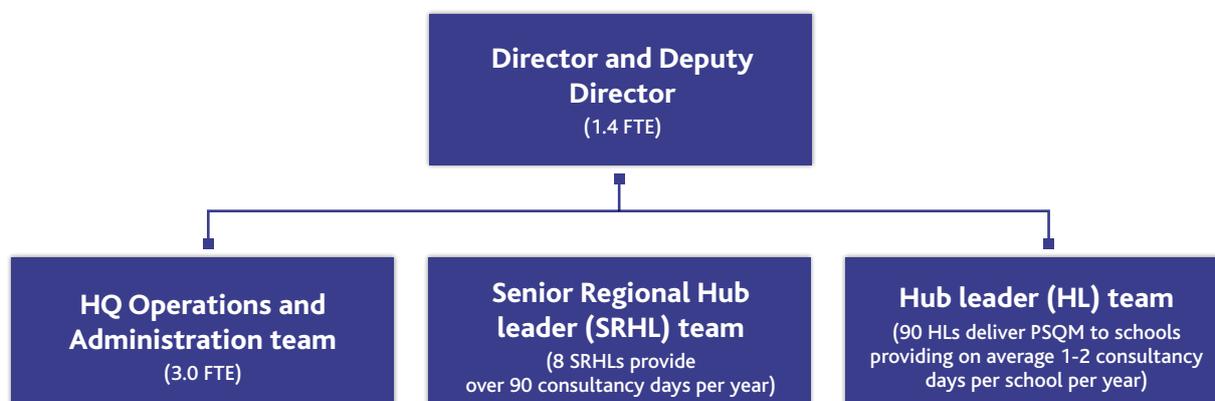


PSQM PROGRAMME

PSQM establishes a reflective culture and builds leadership expertise to enable ongoing development in science.



PSQM ORGANISATION



PSQM CURRENT BUSINESS MODEL

Approximately 65% of PSQM income comes from the participation fees paid by schools, £850 reduced to £550 for small schools. The remainder of PSQM income comes from grants and consultancy fees including a significant annual grant from the Primary Science Teaching Trust. PSQM also benefits from generous funding in-kind from the University of Hertfordshire for legal, financial and estate services. PSQM does not generate any surplus or profit and every penny of income is spent on delivering and improving PSQM.



LOOKING AHEAD WITH A CALL TO ACTION

PSQM is building systems leadership in primary science and helping schools improve its provision for science leadership, teaching and learning. But our work is not done.

In the coming year we will:

 <p>Use STEM industry and Wellcome sponsorship to increase reach and improve science in more schools in socially and economically deprived areas.</p>	 <p>Implement next stage of hub leader development programme</p>	 <p>Develop a programme for school-based hub leaders which supports NPQ qualification</p>	 <p>Further increase stakeholder liaison to increase collaboration across the sector</p>
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Partnering with PSQM

As we plan the next phase of PSQM's development, we are actively seeking new partners to work with us. If you share our aims and ethos for improving science education and are looking to partner with a proven, needed and highly respected change maker in primary science then please get in touch.





How amazing it is to know that my work has changed the passions and learning in science of so many young people. Nothing beats that.

Science subject leader, June 2021