sserc

scottish
schools
education
research
centre

Now in phase 2 following independent evaluation of a pilot across all 32 Local Authorities

Primary Cluster Programme (PCP)

Science and Technology

The Scottish Government
Riaghaltas na h-Alba

why & how?
PRIMARY SCIENCE TEACHING TRUST

Edina Trust

STEM LEARNING

What is PCP?

The SSERC Primary Cluster Programme in Science and Technology (PCP) is a national career-long professional learning (CLPL) programme designed to improve the confidence and expertise of all primary teachers in a participating cluster in their teaching of science and technology.
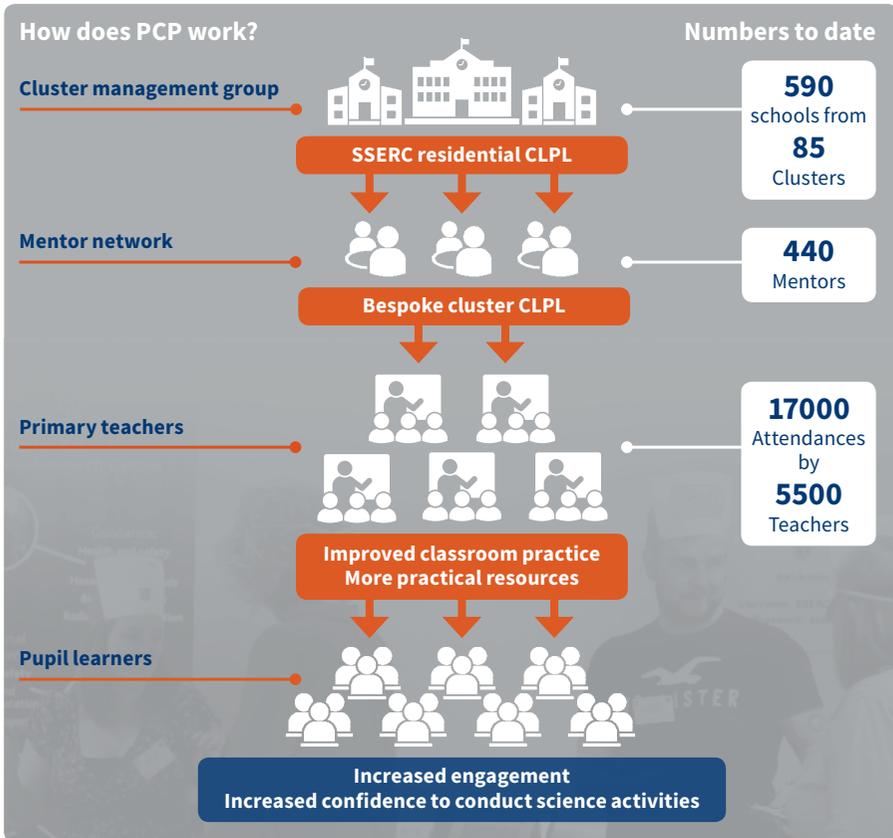
Why the need for PCP?

Many research sources have noted that STEM is an area in which primary teachers often lack confidence and expertise. These sources highlight the need for a focus on improving the confidence and competence of primary teachers to effectively teach STEM education and provide learners with the STEM skills and knowledge they require throughout their lives [1, 2, 3].

How does PCP address this need?

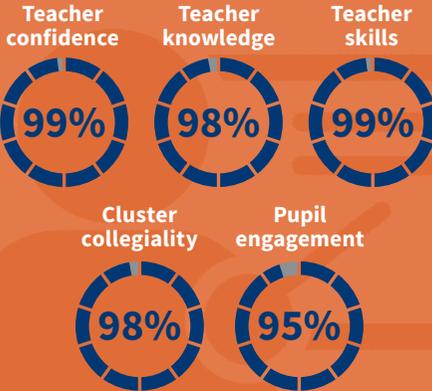PCP provides a unique experiential CLPL programme that:

- **Systematically** involves **all** teachers in a cluster.
- **Is experiential**.
- **Builds networks and develops collegiality**.
- **Provides resources** for CLPL and the classroom (via Edina Trust grant).

How does PCP work?

Cluster management group

SSERC residential CLPL

Mentor network

Bespoke cluster CLPL

Primary teachers

**Improved classroom practice
More practical resources**

Pupil learners

**Increased engagement
Increased confidence to conduct science activities**

Numbers to date

590 schools from **85** Clusters

440 Mentors

17000 Attendances by **5500** Teachers

What are the key findings from the independent evaluation [4]?

Headteachers and mentors report*:

- PCP has had greater impact in schools recording higher levels of deprivation.
- PCP has been recognised for its contribution to quality learning and teaching in science and technology in HMIE inspections.
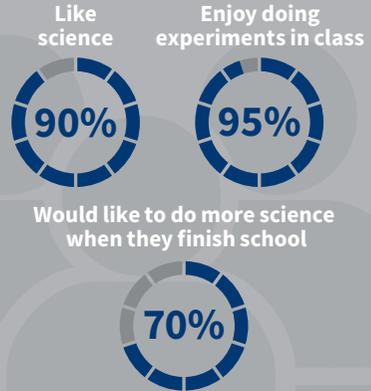- They also report an **increase** in:

Teacher confidence
99%

Teacher knowledge
98%

Teacher skills
99%

Cluster collegiality
98%

Pupil engagement
95%

*Based on data from 520 Headteachers and mentors.

Pupils report**:

A statistically significant **increase in confidence** in their ability to complete science activities from baseline survey to follow up. This increase in confidence is greater in schools reporting higher PCP impact.

In the follow-up survey pupils:

Like science
90%

Enjoy doing experiments in class
95%

Would like to do more science when they finish school
70%

**Based on data from 5512 pupils.

What are the key recommendations?

Following the positive evaluation findings, ROC have suggested that:

- PCP should be sustained and extended, creating a cadre of volunteer mentors working collaboratively to facilitate wider impact.
- PCP could be used to look at ways to enhance primary and secondary partnerships and to help support Early Years/Primary transition in participating clusters.

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"Boosted teachers' confidence in teaching science and led to a change in practice which has had a positive impact on pupil engagement and attainment"

Headteacher, North Lanarkshire Calderhead cluster

Pupils are loving all the different experiments and using the resources.

Our children are excited about Science!

Why should you get involved in PCP?

Involvement in SSERC PCP can help fulfil the requirements of the STEM Education and Training Strategy for Scotland [3].

By 2022 the Scottish Government expects to see:

- Increases in the proportion of people undertaking STEM-related learning, engagement, study and training.
- Increased practitioner engagement in STEM professional learning and increased practitioner confidence in STEM learning.

How can we support you to deliver excellent STEM learning?

SSERC will offer Local Authorities the opportunity to take part in a 2-year programme.

Year 1 - participation in PCP (supported by the Scottish Government, STEM Learning and the Edina Trust).

Year 2 - participation in the PSTT Sustain and Extend Programme (PSTT SEP) (supported by the Primary Science Teaching Trust and the Edina Trust) to provide:

- Further experiential professional learning to develop leaders of CLPL in science and technology.
- Support to extend cluster professional learning programmes.
- Access to Science Resources for Schools grants for classroom resources.

Beyond year 2 - continuing support via our:

- Open experiential professional learning programmes including:
  - face-to-face events;
  - interactive electronic events;
  - SSERC annual conference.
- Termly Bulletins.
- Advisory Service.
- STEM Ambassador Hub co-ordination.

References

[1] Science and Engineering Education Advisory Group (2012), Supporting Scotland's STEM Education and Culture, https://www.gov.scot/binaries/content/documents/govscot/publications/report/2012/02/supporting-scotlands-stem-education-culture-science-engineering-education-advisory-group/documents/00388616-pdf/00388616-pdf/govscot:document/.

[2] Donaldson, G. (2011), Teaching Scotland's Future - Report of a review of teacher education in Scotland, https://www.gov.scot/Resource/Doc/337626/0110852.pdf.

[3] Scottish Government (2017), Science Technology Engineering Mathematics Education and Training Strategy for Scotland, https://beta.gov.scot/publications/science-technology-engineering-mathematics-education-training-strategy-scotland/.

[4] From 2012 to 2017 PCP was subject to external evaluation by the Robert Owen Centre for Educational Change (ROC). For the full evaluation report visit: https://www.sserc.org.uk/professional-learning/evaluations.

"There was evident momentum during the Programme and the mentors have continued to work together systematically after their involvement in the Programme."

Local Authority Officer, Highland

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