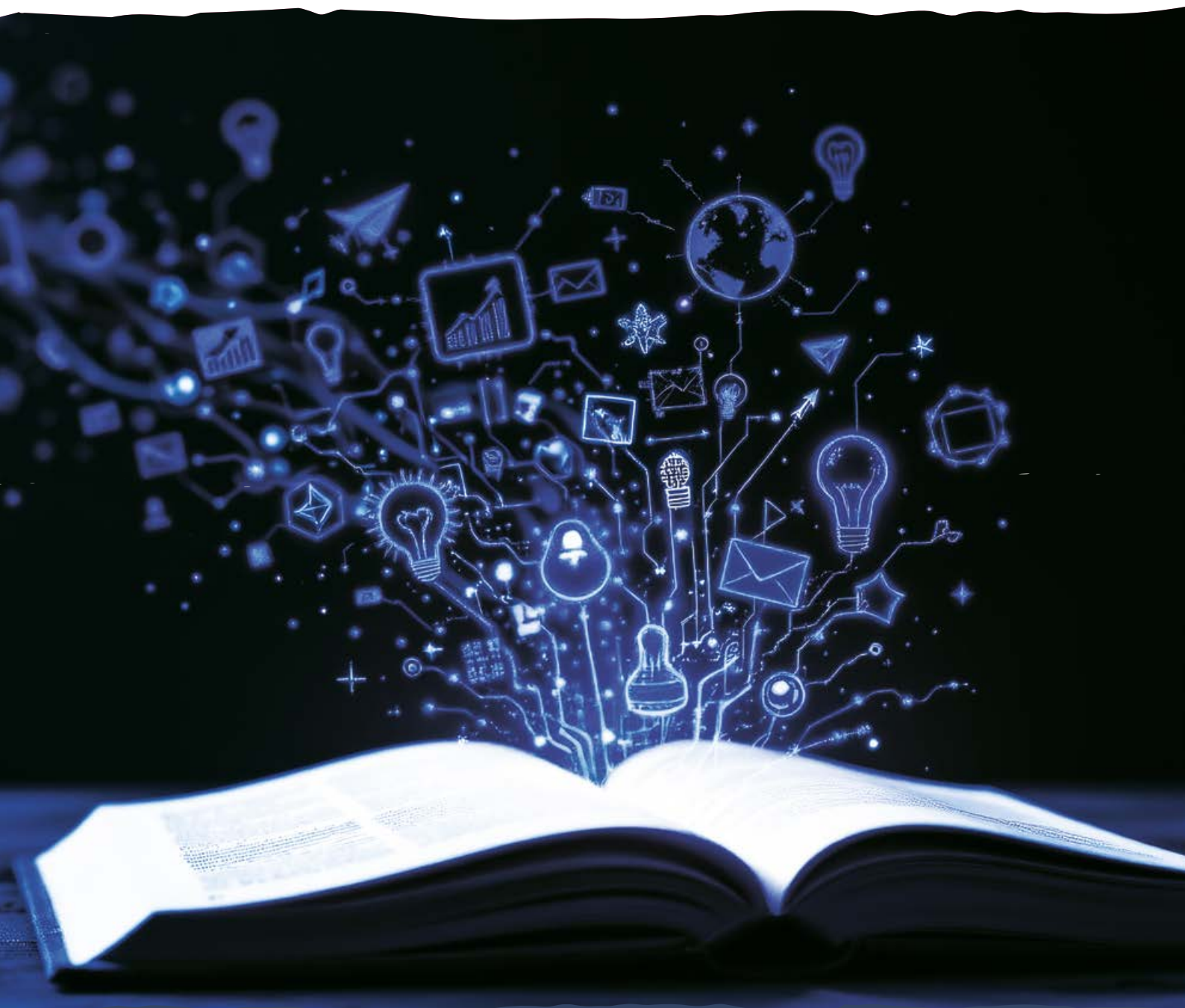




RAiSE Programme Impact Report

Written by Laura McCafferty



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Foreword

RAiSE Final Evaluation Report

The Raising Aspirations in Science Education (RAiSE) Programme has had considerable reach and impact since it began in 2016 and has played a critical role in the success of Scotland's STEM Education and Training Strategy.

I'm delighted to present this foreword to the final RAiSE evaluation report for the Trustees of The Wood Foundation and to illustrate the difference the programme has made in schools and settings across Scotland. As you read through the report, I hope you enjoy the quotes and compelling testimonies from those who have benefited from RAiSE activity and have contributed to its success. The programme has benefitted thousands of primary teachers and also learners, parents and families. We felt it was important that the individual stories of transformation and change were captured and that they were given a voice in the report.

We also hope that the report gives a flavour of the richness and diversity of activities that the programme has supported in so many parts of Scotland. The report can only capture an essence of this, the true reach and scale being so much bigger. The RAiSE Programme stands out as being one of only a few programmes that has made an impact at this scale nationally. Since 2016, over 34,000 educators in 27 local authorities have received professional learning support through RAiSE. One of the key objectives of RAiSE was to improve practitioner confidence in teaching science to ensure all children and young people had equity of access to inspiring, high-quality learning in science and STEM. The programme has achieved this, with our national STEM survey data showing that

confidence levels of primary practitioners in teaching science increased to 81.8% in RAiSE local authorities, 20% higher than the baseline national level. There have been gains too in the teaching of engineering— an area where confidence levels have historically always been low. Through RAiSE support, practitioner confidence levels in teaching engineering in participating local authorities increased from 37.6% to 53.1%, between 2018/19 and 2022/23..

The relentless focus of RAiSE has been to transform the lives of our children and young people, by motivating them through their science learning and inspiring them to consider and pursue STEM careers. The data shows beyond doubt that we have made an impact. In RAiSE authorities, learners are three times more likely to say that STEM subjects are *interesting, fun, enjoyable fun, exciting or useful*. They are also two and a half times more likely to say that will *definitely* or *maybe* study STEM subjects or get a STEM job. Throughout this work, our focus has always been on those most in need including children and young people in the most deprived areas, and those in rural, remote and island communities.

Our view is that this has made an impact on the number of learners choosing science and STEM pathways as they progress into the senior phase. National data shows that the numbers taking science and STEM subjects, across traditional and non-traditional pathways combined, has increased by 15.4% between 2018 and 2025. These impressive gains have been made despite a devastating global pandemic and staffing challenges in science and STEM subjects. We believe that the RAiSE Programme has been key to this success.

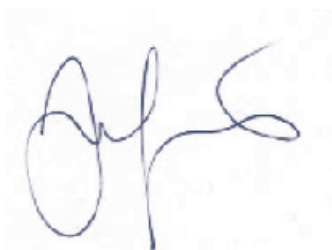
There is a wider strategic impact that must be noted too. RAiSE has been a laboratory of innovation that has supported wider change across the system. The early success of RAiSE, for example, profoundly shaped and guided the development of Scotland's STEM Education and Training Strategy. This led directly to the recruitment of eight STEM Education Officers within Education Scotland and six Improving Gender Balance and Equalities in STEM Officers. These officers have worked hand-in-glove with RAiSE Primary STEM Development Officers in local authorities in a coordinated way to maximise collective impact. Similarly, the high-quality, inspiring curriculum resources produced by RAiSE have been enjoyed by practitioners across the length and breadth of Scotland, in all local authorities, with over 80,000 visits to the RAiSE online resource page since May 2020.

I hope this gives you reassurance that we have worked tirelessly, and with ambition, to deliver on the programme objectives and have collectively achieved what we set out to do through our innovative RAiSE partnership. Others have recognised the value of the programme, with the investment from The Wood Foundation unlocking an additional £3.8 million from other sources including external funders, local authorities, Scottish Government, and also through Education Scotland's STEM Grants Programme.

Our work is not done. Education Scotland will continue to build a vibrant legacy for RAiSE in the coming months and years. Central to this will be ensuring the learning, resources and innovations from RAiSE help to shape an inspiring new national science and STEM curriculum for Scotland's learners.

Thank you to The Wood Foundation Trustees for choosing to invest in Scotland's children and young people, and your desire to secure better experiences and outcomes for them. Thank you for the close partnership working with Education Scotland, Scottish Government and local authorities to stimulate and support strategic change. It has been a pleasure to have co-developed the RAiSE Programme with you and we hope you are as proud of its achievements as we are. We are most grateful for the trust you placed in us to lead this valuable national work.

With every best wish.

A handwritten signature in blue ink, appearing to read 'Ian Menzies', is centered within a light blue rectangular box.

Ian Menzies
Senior Education Officer
Education Scotland

1. Executive Summary

The RAISE (Raising Aspirations in Science Education) programme has been a collaborative initiative involving Education Scotland, The Wood Foundation, the Scottish Government, and participating local authorities, designed around eight programme objectives to enhance the confidence and capabilities of primary school practitioners in delivering high-quality science, technology, engineering, and mathematics (STEM) education.

Launched in 2016 as a pilot across eight local authorities, RAISE demonstrated early success and the programme was extended for national reach. Since its inception, 27 out of Scotland's 32 local authorities have participated in the RAISE programme.

Each participating authority received two years of funding to appoint a dedicated Primary Science/STEM Development Officer (PSDO). Guided by a National Education Officer (NEO), PSDOs were responsible for leading and coordinating professional learning opportunities, as well as fostering practitioner networks and collaboration. This support aimed to strengthen the quality, consistency, and impact of STEM learning and engagement for primary learners.

Over nine years, RAISE has achieved a substantial and measurable impact. More than 34,000 practitioners participated in over 3,500 professional learning events, equating to almost 77,000 hours of CLPL. Confidence in teaching engineering increased by over 15%, and the digital resources created by RAISE have been viewed more than 65,000 times nationally. The initiative has leveraged £1.74 million in STEM grant funding from Education Scotland and a

further £1.2 million of local investment post-programme, reflecting both its effectiveness and the commitment of participating authorities to sustaining its impact. In addition, learners in RAISE authorities are now 2.5 times more likely to consider a STEM-related career, reflecting a considerable shift in attitudes, aspirations and awareness.

Beyond quantitative measures, RAISE's true success lies in its cultural impact. It has succeeded in embedding STEM as a central, cross-curricular component of primary education. It has empowered practitioners to see it as an interdisciplinary approach that nurtures curiosity, creativity, and problem-solving, rather than as a stand alone subject. Through practical, hands-on professional learning, PSDOs have modelled high quality pedagogy and supported teachers to integrate STEM meaningfully across the curriculum. Initiatives such as STEM Mentor and STEM Champion networks have cultivated leadership, collaboration, and peer-to-peer learning that will endure beyond the lifetime of the investment.





The programme has also advanced national priorities such as Learning for Sustainability, outdoor learning and the UN Sustainable Development Goals, positioning STEM as a driver of environmental awareness, social responsibility, and global citizenship. Teachers have gained the skills and confidence to explore sustainability themes and real-world challenges with learners, helping them understand the relevance of STEM to everyday life and future careers.

While RAiSE has achieved considerable success, it has also revealed common challenges across the education system, including disparities in access to resources, staff time constraints, and differing local capacities. The programme's flexible, locally-driven approach allowed these challenges to be addressed strategically, with many authorities embedding STEM within school improvement planning and professional learning calendars. A key learning point has been the importance of sustained investment in networks, professional learning, and resource development over time to ensure continued progress and equity across all contexts.

RAiSE was instrumental in the development of the Scottish Government's STEM Education and Training Strategy (2017) and has been a laboratory of innovation for the strategy over this period. The programme's structure, learning, and delivery approach not only shaped and influenced national strategy but was also a key delivery mechanism for the STEM Strategy ambitions. In addition, the Developing the Young Workforce (DYW) programme (2014) was at the heart of all activity with data demonstrating beyond doubt that young people's

enthusiasm for STEM pathways and careers has risen measurably in participating local authorities.

Building on this, a bespoke RAiSE Strategy was created based on six key themes - *Education Reform, Learning for Sustainability, Collaboration, Wider Impact, Partnerships, and What's Next* - ensuring the programme continues to align with evolving national priorities. These key themes were informed by the RAiSE steering group. Under each key theme we identified continued practice and new approaches (see Appendix 1 for steering group membership and RAiSE Strategy key theme details).

Education Scotland has been tasked by the Scottish Government to lead the review of updating Scotland's curriculum for the first time in fifteen years. This Curriculum Improvement Cycle activity is underway and will impact on all curricular areas as well as the four contexts for learning. The National Education Officer (NEO) is supporting, leading and advising in the sciences and interdisciplinary (IDL) workstreams and an integral part of this work is to share learning from RAiSE to ensure a progressive curriculum and lasting legacy for the programme.

RAiSE has strengthened practitioner confidence, inspired learners, and created a culture of collaboration and innovation in relation to STEM learning. The programme's influence extends well beyond its original scope, leaving a lasting legacy in national policy, professional practice, and Scotland's collective ambition to prepare young people for the challenges and opportunities of the future.

2. Methodology

This impact report draws on insights from across the full nine years of the RAiSE investment. To capture how the programme evolved over time, it brings together a mixture of quantitative and qualitative data, information, and feedback gathered as part of the ongoing evaluation plan.

A key element of the evaluation approach was the annual reports submitted by each participating local authority. These reports provided valuable evidence of activity at local level – highlighting the support delivered, the impact on practitioners and learners, and the difference the investment was making in each context.

In addition, six-monthly reports written by Primary Science and STEM Development Officers (PSDOs) and the National Education Officer (NEO) were reviewed. These offered more regular updates on progress, challenges, and changes in delivery throughout each year.



Together, these reports enabled the identification of common themes and trends, and helped track how practice and impact developed over time.

The RAiSE Interim Evaluation Report, undertaken by the Robert Owen Centre for Educational Change, also informed this analysis, contributing an independent perspective to the evidence base.

Survey data added an additional layer of insight. Baseline, mid-point, and final surveys were used to capture information from local authorities beyond the pilot period, focusing on outcomes, professional learning activity, and practitioner experiences.

To include authentic voices and experiences, the report also draws on interview and focus group transcripts collected during the programme. These qualitative accounts provide rich, contextual detail about how the investment operated in practice, the challenges encountered, and opportunities for future improvement.

Throughout the investment, an evaluation plan guided data collection and analysis. Reflecting agile project management principles, this plan remained flexible, allowing for adaptation in response to changing contexts and priorities.

The report was compiled and written by the National Education Officer, with support from the Evidence and Impact Lead at The Wood Foundation. This collaborative approach ensured that the findings reflected both national oversight and local delivery experience, resulting in a balanced and accurate overview of the programme's impact.

Limitations

While the report draws on a wide range of information, there are a few limitations to consider:

- **Incomplete survey responses:** Not all local authorities participated in every survey, limiting the precision of some longitudinal comparisons.
- **Variation in reporting:** Annual submissions varied in length, format, and level of detail, making direct comparison across authorities more challenging.
- **Self-reported data:** Much of the quantitative and qualitative evidence comes from those directly involved in delivering RAiSE, which may introduce positive bias.
- **Selective participation:** Interview and focus group participants were self-selecting and may not fully represent the wider range of practitioner experiences.
- **Changing context:** Over the nine-year period, broader policy shifts, organisational changes, and external factors - most notably the COVID-19 pandemic - may have influenced outcomes beyond the scope of the RAiSE investment.



3. RAiSE Programme Objectives

The RAiSE Programme was aligned to eight Programme Objectives.



Build capacity at local authority level to deliver coordinated approach to STEM education



Work collegiately to support establishments in meeting the aspirations of the National Improvement Framework



Promote joint curriculum planning to ensure effective progression in STEM learning between sectors



Develop and promote opportunities for all learners to increase their experiences, engagement, enthusiasm and achievement in STEM



Build the confidence, skills, knowledge and enthusiasm of primary school practitioners



Contribute towards curriculum development which supports high quality, relevant and contextualised STEM learning, teaching and assessment



Establish and grow partnerships for STEM education through connections with a wide range of relevant agencies and local, national and international industry



Support the development of skills progression in STEM through real life, contextualised learning opportunities linked to STEM careers

4. The RAiSE Programme and Context

The RAiSE Programme has been delivered through a partnership of Education Scotland, The Wood Foundation, Scottish Government and participating local authorities. The ambition of the programme has been to increase practitioner confidence in delivering high-quality STEM learning and teaching experiences.

RAiSE
has been
embraced
by local
authorities



The Need

RAiSE has been embraced by local authorities thirsty for opportunities to connect young people to real-life STEM learning. Nearly eight in every ten (79%) of teachers surveyed stated they needed support to show learners how to apply STEM skills in new contexts. What's more, a similar proportion (78%) wished for more opportunities to help learners improve in learning sciences and STEM.

While the authorities acknowledged the need to invest in STEM delivery in primary education as a means of addressing real-world problems, they were acutely aware of the challenges ahead. Delivery of STEM learning in participating local authorities varied from school to school, and at times, also within schools, especially around STEM and interdisciplinary learning. This often stemmed from fragmented understanding of STEM, and under-utilisation of relevant technology. This meant that provision of STEM education was often inconsistent and inequitable. It comes as no surprise that a quarter (76%) of surveyed primary school educators wanted to improve their own teaching and learning in STEM through RAiSE.

Despite these challenges, the authorities saw an opportunity in RAiSE to spark interest in young people and deliver interactive and hands-on experiences of learning about STEM and its application in real life. What's more, it became clear that this cannot happen without building collaborative relationships with external organisations and investing in a greater level of connection with fellow educators as an opportunity to share peer-to-peer learning.



Underpinning Structure

Each participating local authority received 70% funding to appoint a dedicated Primary STEM Development Officer (PSDO), with the remaining 30% of the role funded locally. The PSDO was tasked with leading and developing high-quality professional learning, fostering practitioner networking and collaboration, and enhancing the quality of STEM teaching and learning experiences and engagement for primary children.

The PSDOs were supported by the National Education Officer (NEO) for RAiSE, employed by The Wood Foundation and based within Education Scotland. This arrangement ensured continuity of leadership and the effective sharing of best practice across the national network - an essential factor in the programme's success.

While RAiSE initially focused on building practitioner confidence in primary science, it quickly expanded to support broader STEM approaches and the programme aligned with the STEM Education and Training Strategy (Scottish Government, 2017).

The NEO worked in close partnership with the Scottish Government and Education Scotland to ensure RAiSE reflected national education priorities and policy areas. They also collaborated closely with PSDOs, supporting them to meet programme objectives. PSDOs engaged regularly as a national network, sharing practice and learning to strengthen impact.

At the local level, the NEO, local authority leads and PSDOs co-developed bespoke action plans to tailor programme goals to each area's context. A core responsibility of the PSDO was to enhance primary practitioners' confidence in delivering STEM, achieved through direct engagement with schools and staff.

Critically, PSDOs also established strategic partnerships with key STEM education stakeholders, including further and higher education establishments and local and national industries. These collaborations enriched school practice and provided learners with relevant, inspiring STEM learning opportunities.



The Launch of RAiSE

78% of surveyed primary school teachers needed support in creating opportunities to help learners move forward in learning science and STEM



73% of primary school teachers wished to build confidence, deepen knowledge and develop their own skills around STEM



76% of primary school teachers wanted to access more opportunities to develop their own knowledge of STEM subjects



71% of primary school teachers wanted to improve collaboration with their peers and other professionals



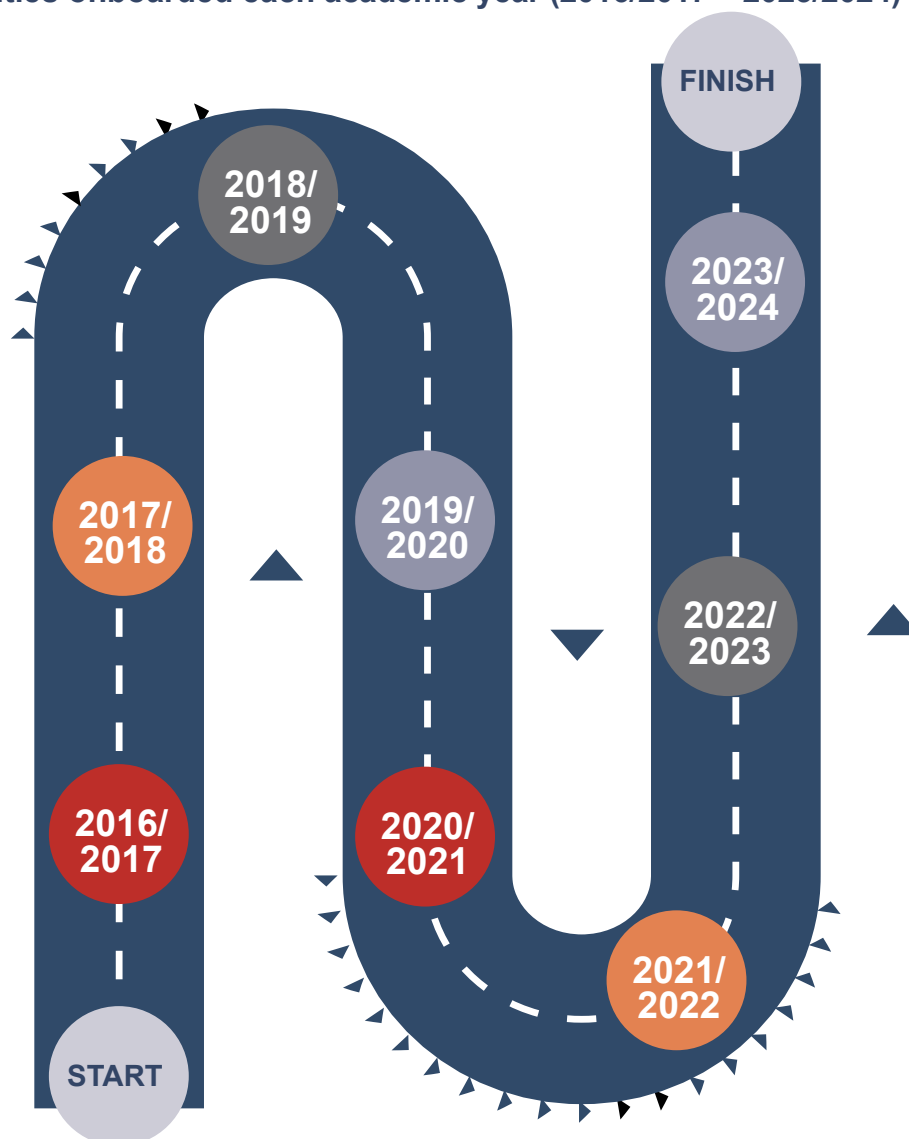
76% of primary school teachers wanted to inspire learners to consider careers in the STEM industry



* findings based on a baseline survey with a sample of 1,362 primary school teachers

The RAiSE pilot programme was established in 2016 and a number of authorities have onboarded each year until academic session 2023/2024.

Local authorities onboarded each academic year (2016/2017 – 2023/2024)



2016/2017

- City of Edinburgh Council
- Moray Council
- The Highland Council
- West Dunbartonshire Council

2017/2018

- Angus Council
- Dumfries and Galloway Council
- Fife Council
- Glasgow City Council

2018/2019

- North Ayrshire Council
- South Ayrshire Council

2019/2020

- Clackmannanshire Council
- Falkirk Council
- North Lanarkshire Council
- Orkney Islands Council

2020/2021

- Comhairle Nan Eilean Siar Council
- West Lothian Council

2021/2022

- Aberdeenshire Council
- Dundee City Council
- Renfrewshire Council
- South Lanarkshire Council

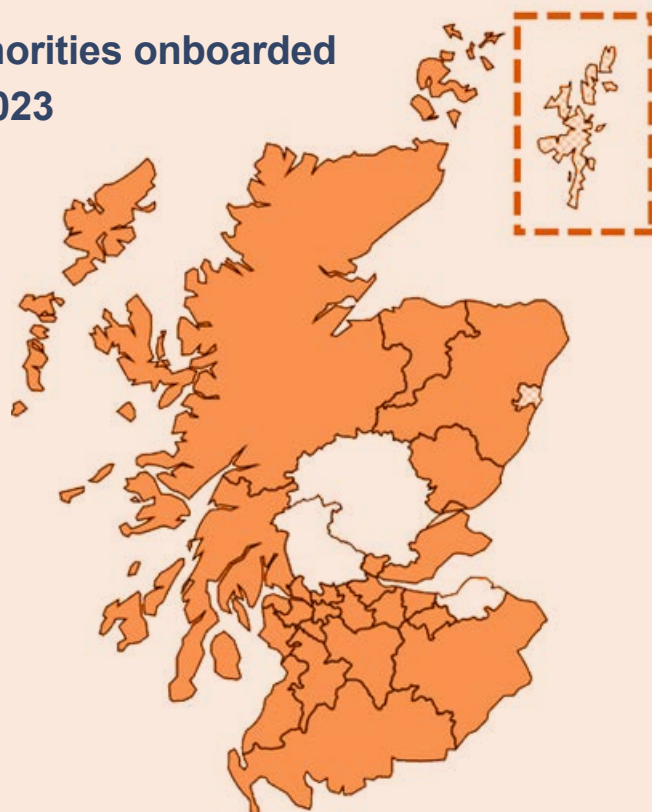
2022/2023

- Midlothian Council
- East Renfrewshire Council

2023/2024

- Argyll and Bute Council
- East Ayrshire Council
- East Dunbartonshire Council
- Inverclyde Council
- Scottish Borders Council

27 local authorities onboarded from 2016-2023



- | | | |
|-------------------------------|-------------------------------|-------------------------------|
| ■ Aberdeenshire Council | ■ East Dunbartonshire Council | ■ North Lanarkshire Council |
| ■ Angus Council | ■ East Renfrewshire Council | ■ Orkney Islands Council |
| ■ Argyll & Bute Council | ■ Falkirk Council | ■ Renfrewshire Council |
| ■ City of Edinburgh Council | ■ Fife Council | ■ Scottish Borders Council |
| ■ Clackmannanshire Council | ■ Glasgow City Council | ■ South Ayrshire Council |
| ■ Comhairle Na Eilean Siar | ■ Inverclyde Council | ■ South Lanarkshire Council |
| ■ Dumfries & Galloway Council | ■ Midlothian Council | ■ The Highland Council |
| ■ Dundee City Council | ■ Moray Council | ■ West Dunbartonshire Council |
| ■ East Ayrshire Council | ■ North Ayrshire Council | ■ West Lothian Council |



RAiSE by Numbers (2016-2025)

Number
of practitioner
engagements:

34,255

Number
of professional
learning
events:

3,511

Cumulative professional
learning hours:

76,935

5. Impact

5.1 Practitioner Confidence



Building Capacity: Professional Learning for Primary STEM Development Officers

Primary STEM Development Officers (PSDOs) came together in-person six times a year. The National Education Officer (NEO) planned professional learning for these in-person days informed by national priorities and survey

feedback in order for PSDOs to continue their lifelong learning journey and be better equipped to support practitioners through their own CLPL delivery. Throughout the programme, **1,356 hours of professional learning** was organised by the NEO for PSDOs. Below are some examples of professional learning planned and delivered.

Woodwork	Computing Science Unplugged - SSERC	Practical Science - Royal Society of Chemistry
Immersive Training Day -Daydream Believers	DNA Jewellery making	Makedo
Climate Smarter -STEMovators	Data Literacy - Data Education Team	Digital Music Making - Sonappa
Outdoor Learning -RHET	Pond Dipping - Dams to Darnley Park Ranger	K'Nex and solar power -Bright Green Hydrogen

Feedback from PSDOs highlighted that hands-on sessions such as immersion in makerspaces or outdoor STEM with park rangers boosted confidence in delivery and

inspired new approaches. Sessions also supported confidence in planning, embedding meta-skills, linking learning to local contexts and global goals.

"By taking part in the hands-on activities in the afternoon, this let me experience these and how I could extend this learning as a teacher and a PSDO."

RAiSE PSDO

"The input from the park ranger was great. Very knowledgeable and inspiring about the outdoors. The trail also helped me envision how I could support similar walks being delivering in my local authority."

RAiSE PSDO

"As always, a valuable experience over the three days, stimulating many ideas and further thinking to apply to development work in our own schools."

RAiSE PSDO

RAiSE CLPL has been informed by national priorities and RAiSE has remained agile and flexible in its approach to ensure CLPL remains relevant and current. The launch of Scotland's 'Learning for Sustainability Action Plan – Target 2030' prompted the NEO to partner with the Education Scotland team leading on Learning for Sustainability (LfS) to plan three professional learning inputs for PSDOs, demonstrating the

"The support of the Education Scotland team has ignited a passion for LfS in me that has grown over the past 6 months. The gap tasks have been enjoyable and valuable and I have shared my experience with schools and practitioners across my local authority."

RAiSE PSDO

"Favourite professional learning of the year, thank you. I will take away how important it is for children to understand what engineering is, how wonderful Kapla is for all stages, both construction resources are excellent for problem solving and collaboration."

Practitioner, East Renfrewshire

interconnectedness between STEM and LfS. These sessions led to PSDOs creating their own professional learning for practitioners in their local authorities, linking place-based learning and Sustainable Development Goals (SDGs) within a local context. PSDOs reported feeling inspired, empowered and better equipped to apply LfS principles in their own context and community.



Empowering Practitioners Through High-Quality Professional Learning

RAiSE has significantly strengthened practitioners' confidence, skills, and knowledge in STEM education by Primary STEM Development Officers (PSDOs) providing high-quality professional learning that is practical, engaging, and directly linked to

classroom delivery. Across different local authorities, teachers consistently reported that CLPL sessions equipped them with new approaches, resources, and confidence to integrate STEM into their teaching. For example, hands-on workshops gave practitioners the skills and resources to teach STEM in real-life, outdoor, and investigative contexts.

PSDOs delivered bespoke support to practitioners including:

- in-person and online CLPL tailored to local authority needs and requests
- team teaching, lesson modelling and curriculum planning
- family learning events
- community STEM events
- CLPL for probationer teachers
- support for STEM Nation Award

Practitioners repeatedly highlighted **the value of hands-on and practical training** delivery format, which has been adopted by the RAiSE team as gold standard throughout the investment.

“It was great to see the range of resources available, especially those which link to topics and Es&Os. The videos of activities was great for ideas too and great to see what can be done on a budget.”

Practitioner, East Dunbartonshire

“Thank you to [the PSDO] for such an informative and hands on professional learning. It was great to see the new resources and have time to use them.”

Practitioner, East Dunbartonshire



This support helped to reduce barriers such as limited access to materials or uncertainty around subject knowledge, leaving teachers *“excited to teach science outcomes in a new way”* (Aberdeenshire practitioner) and better able to demonstrate progression in learners’ skills and understanding.

Crucially, RAiSE also fostered collaboration and leadership through initiatives such as the STEM Mentor and Champion networks. These networks enabled staff to cascade learning, strengthen local expertise, and sustain STEM

development beyond individual training sessions.

PSDOs in Falkirk and South Lanarkshire successfully secured Education Scotland STEM grants, which allowed teachers to be released from class to receive targeted training from PSDOs and subsequently cascade professional learning across their schools, clusters, and wider authorities. The impact of this investment has been significant: in South Lanarkshire, 17 of the original 18 Mentors continued beyond the grant period, while Falkirk retained 7 out of 8 Mentors.

Teachers reported that access to high-quality professional learning, tailored to their needs and supported by curated online resources, has significantly improved their confidence to teach STEM. Electricity.

“Electricity has been the area of Science which I have had least confidence in delivering. I enjoyed all of your videos and found them very informative. The progression from Early to Second Level is clear and the experiments and science behind each part explained well. This has definitely given me the confidence to use these experiments with my class, depending on the stage. I can always refer back to the videos and resources if I need too.”

Practitioner, Falkirk

“I found this session informative, it allowed me to see the areas where we are already covering aspects of STEM. However, I also recognise that we may not always be aware of this at the time. This session will allow me to look at our provision and in our resourcing and ensuring our language covers scientific concepts as well as progressing the learning by covering aspects such as data analysis.”

Practitioner, North Lanarkshire



Another key impact has been the way professional learning has broadened practitioners' understanding of STEM as interdisciplinary and relevant across the curriculum. From engineering with Kapla and Makedo, to linking STEM with literacy, numeracy, and outdoor learning, staff have gained insights into how STEM can be

integrated in meaningful contexts. This has **increased learner engagement** and motivation. Moreover, RAiSE's support in areas such as assessment, progression pathways, and planning whole-school STEM events has strengthened teachers' pedagogical confidence and leadership capacity.

"One of the really interesting sessions that [PSDO] did was on assessment. I think that's something that people felt a bit unsure about, you know for Maths you get testing, and here's all the assessments for literacy, but science, it's a bit harder to kind of get a handle on that. So, I think, giving staff confidence in that has really improved the quality of experience for learners."

STEM Lead, North Lanarkshire

"Taking part in the STEM Leader programme has also given me lots to share with my colleagues. I have developed my leadership skills as I have had opportunities to mentor colleagues. In addition, the STEM Leader programme has supported me to make connections with STEM Leaders in my cluster schools so we can collaborate."

STEM Lead, North Lanarkshire



"The CLPL sessions which I have attended for STEM have been valuable sessions with hands-on learning for staff and access to a range of resources. After becoming STEM leader within my establishment, I relied heavily on the support from [the PSDO] and the STEM CLPL sessions to ensure I was introducing STEM throughout the school at a manageable pace and providing relevant and experiential learning experiences for our learners."

STEM Lead, East Ayrshire

Developing High-Quality STEM Resources for Practitioners

Primary STEM Development Officers (PSDOs) have created innovative, progressive resources aimed at practitioners to deliver high quality STEM learning and teaching experiences. All resources have been created by teachers, for teachers and have been quality assured and piloted by various schools and partners to ensure effectiveness. Resource creation was

All RAiSE resources can be accessed [here](#).



The resources have not solely benefited RAiSE, they are freely available to all, therefore resourcing practitioners nationally to support the creation of practical, interdisciplinary STEM learning and teaching opportunities for all.

RAiSE resources are helping to shape and inform curriculum improvement cycle developments. These resources are well utilised by practitioners (see stats on Appendix 2) and the National Education Officer (NEO) has

informed by survey results addressing gaps and ongoing national priorities to ensure the investment was responsive to local need and priorities. People were always at the heart of RAiSE investment and training was provided to go alongside any resources. What's more, resources were accompanied by bespoke training for local authorities or voiceover presentations to explain resources on the RAiSE page on the STEM Nation Glow site.

shared data around this through the sciences curriculum improvement cycle work. For example, the Science Planning Resource remains the most widely used, reflecting a continued need for high-quality exemplification to support curriculum design and progression.

Collectively, RAiSE resources have had **over 65,000 views to date**.

On the next page is an overview of our most popular and most recent resources.

The Science Planning Resource - This was the first resource created with a planner of useful starting points and suggestions for each of the

“...changed the way I plan science for the better. I’m not scared to look at those Es and Os now!”

Practitioner, East Dunbartonshire

Science Experiences and Outcomes from Early to Second Level. This remains our most viewed resource with over 28,000 views to date.

Technologies Planning Resource - RAiSE survey data and national STEM survey data showed that technologies was an area where practitioners lack confidence. Therefore, the PSDOs worked on creating a planning resource for every Technologies Experience and Outcome similar to the Science Planning Resource. PSDOs worked in ‘technology twos’ to create plans. The pairs were devised from Forms survey feedback where the PSDOs shared their own confidence levels in knowledge for the technology curriculum organisers. This was vital to ensure the planners were of high quality. When the plans were put together, they were shared with Education Scotland’s Digital Team who looked over them and suggested any further enhancements to technology. For example, when looking at assessment, a timeline activity could be completed using a device to incorporate digital literacy rather than it being written on paper as has been done traditionally.

STEM Outdoors - *“The need for the development of values, attitudes, knowledge and skills to be significantly strengthened in the context of Learning for Sustainability, the bringing together Education for Sustainable Development (ESD), Global Citizenship Education (GC) and Outdoor Learning (OL). This was felt to be particularly important given the increased profile and relevance of climate change to the current and future generations of children and young people.”*

(P18 Muir Report). This prompted plans to develop outdoor STEM learning resources. PSDOs created seasonal and anytime outdoor STEM activities across all levels to give some inspiration on taking STEM outdoors.

Sustainable Development Goals (SDGs) -

A strong focus is being placed on the SDGs as these, together with LfS, support Scotland’s journey to Net Zero and a more sustainable future for all. PSDOs made links to these in all context planners created with SSERC. Linking SDGs to context planners was a practical way to instil a sense of global responsibility and awareness to practitioners and in turn, children and young people.

On request from a school, the PSDO in Aberdeenshire created a Second Level resource demonstrating how STEM can support teaching children about the SDGs. This was shared with the wider PSDO network and across local authorities. There was then a wider request for an Early and First Level resource. PSDOs worked on creating a progressive resource focusing on six SDGs at Early Level, progressing to twelve at First Level and covering all seventeen at Second Level. These have been designed to support learners understanding of each of the goals through a STEM context. In addition, the resource exemplifies curriculum coverage as well as interconnectivity across SDGs.

Feedback from practitioners has been positive.

“This is amazing! So easy to use and full of easy to access info and videos. The fact that is progressive is fantastic!”

Practitioner, East Renfrewshire



Construction Resource - The Ekosgen report noted the importance of connecting with industry in order to make real-life links in learning. *Building capacity, confidence and skills of practitioners: Developing the confidence and capability of STEM teachers and practitioners is an ongoing need and continues to be addressed through the STEM Professional Learning Grants Programme and support from local authorities, Education Scotland and key partners. In line with the teaching-related issues identified through engagement with learners, professional learning including gender aware practice, and industry exposure (directly, and via colleges*

and DYW) is required to help practitioners better ground lessons ‘in real life’ and in contemporary business/industry contexts. This is important for building STEM capital across all practitioners and in training courses for teachers and early learning and childcare practitioners. (P40 Ekosgen Report).

The PSDOs created a progressive construction resource which was enhanced by videos from professionals within Persimmon Homes who have a wide range of roles. The videos explore the skills and tools used within jobs as well as the route people took to get there demonstrating pathways outwith academia.

“I can see the Persimmon construction resource linking to other learning in my classroom.”

Practitioner, Celebration Event

“I just wanted to say what a great resource this is! I’ve been looking for something like this for ages!”

Practitioner, Scottish Borders

Engineering – Education Scotland’s annual practitioner survey showed a huge lack of confidence in practitioners in teaching engineering.

Therefore, PSDOs created an engineering ‘toolkit’ which consisted of online CLPL with an introduction to engineering and where it fits in the curriculum (now available for anyone to

access on the RAiSE online page), an overview of the Engineering Habits of Mind and a planner for the book, Rosie Revere Engineer. After RAiSE input, the annual practitioner survey responses were much more positive with an increase from 37.6% of teachers in RAiSE authorities being confident or very confident in delivering engineering in 2018/2019 to 53.1% in 2022/2023 (**up by 15.5%**).

STEM Through Stories – The current NEO was one of the PSDOs in Falkirk prior to taking up post as NEO. Covid-19 descended right in the midst of work and beyond. With literacy and numeracy being at the forefront of recovery, the PSDO created STEM Through Stories planners for all levels demonstrating



STEM on a Budget – RAiSE and national STEM surveys continually highlighted that practitioners felt a lack of resources stood in the way of them delivering STEM learning and teaching experiences. The NEO and PSDOs created bitesize videos showing how simple everyday resources can be used to deliver STEM.

Overall, RAiSE has built practitioner capacity by co-developing engaging, curriculum-linked resources with a strong emphasis on literacy integration, interdisciplinary learning, and progression. These materials have supported staff to move beyond ad-hoc STEM activities, enabling them to deliver progressive lessons with clarity, purpose, and confidence.

Creating Tailored STEM Resources to Meet Local Needs

Primary STEM Development Officers (PSDOs) have created bespoke resources based on local authority needs and requests which supported high-quality STEM teaching and learning. As previously stated, in Aberdeenshire,

how STEM activities can be linked to novels and stories. These remain one of the most popular resources. A voiceover presentation is available on the RAiSE online page explaining how to put a plan together and the NEO delivered CLPL sessions across several local authorities.

“I have a renewed excitement for using stories as a springboard for STEM activities.”

Practitioner, Aberdeenshire

for example, teachers requested a resource linking STEM to the UN Sustainable Development Goals, which was created at Second Level (Early and First Levels were created by fellow PSDOs and all levels shared on our national STEM Nation RAiSE page). This tailored approach, responding directly to practitioner needs, has helped staff see STEM as integral to curriculum delivery rather than an additional stand-alone subject which is vital in an ever growing primary curriculum.

Several local authorities have developed science skills progression frameworks for Early, First, and Second Levels; these are used for tracking pupil progress and are embedded within CLPL. Progression pathways have been revised and mapped to enquiry and meta-skills, with some local authorities implementing three-year rolling programmes. Additional supports, such as skills posters and investigative skills documents, have been created to aid practical STEM teaching. CLPL sessions and moderation activities have involved practitioners in the planning and evaluation of resources, enhancing ownership and relevance.



“The kits were fantastic. They were the highlight of our ‘Electricity’ for all children. Doing things practically allowed the children to fully engage with their learning. As a teacher I used the OneNote resources to firstly teach myself how to use the kits - the videos were fantastic! I then used the videos with the c findings based on a baseline survey with a sample of 1,362 primary school teachers the activities. We also used the PDF Activity documents for activities to use with the kits!”*

Practitioner, Orkney

PSDOs also ensured resources were practical and adaptable for diverse learning contexts, including outdoor and remote learning. North Ayrshire’s Early Level Outdoor Science resource, Midlothian’s maths outdoor learning plans and loan boxes, and Scottish Borders’ STEM pathway from Early to Third Level all demonstrate how resources were tailored to local contexts while promoting equity of access. Notably, North Lanarkshire’s virtual classrooms integrated STEM into remote learning during lockdown, reaching over 20,000 learners and being accessed more than 600,000 times, significantly raising the profile of STEM. Orkney and the Scottish Borders further supported learning through hands-on resource kits for electricity, which teachers valued for enhancing their own understanding and enabling practical, engaging lessons for learners.

Embedding Effective STEM Practice Through In-School Collaboration

RAiSE has built practitioner confidence, skills, and knowledge through a strong emphasis

on in-school support, team teaching, and curriculum redesign. A clear example of this is in Clackmannanshire, where one primary school undertook a full curriculum refresh embedding STEM within interdisciplinary (IDL) contexts. Practitioners engaged in in-service training, where they explored how STEM could be naturally interwoven with literacy, numeracy, health and wellbeing, and global contexts such as the SDGs and UNCRC. Staff were also introduced to hands-on STEM resources and equipment, which improved their confidence in using tools and applying them meaningfully within classroom contexts. The relaunch of STEM across the school during British Science Week further reinforced staff skills, enabling them to deliver engaging and progressive STEM learning. (See Appendix 3)

A similar model of team teaching and modelling has been effective across local authorities. In CNES, staff benefited from shared delivery of woodworking and Makedo activities, where teachers and learners built confidence together in handling tools and engaging in practical STEM projects.

Falkirk, Inverclyde, Scottish Borders and East Ayrshire also highlighted the value of modelling lessons, with practitioners reporting that observing **STEM activities in action helped them better understand pedagogy**, resource use, and learner impact. For example, Falkirk's woodwork project enabled staff to practise tool use in real settings, while Inverclyde's four-step model of planning, demonstration, co-delivery, and teacher-led follow-up gave practitioners the confidence to apply new approaches independently.

RAiSE support has also emphasised contextual and interdisciplinary learning. Practitioners have been encouraged to see how STEM links with real-world contexts and across curricular areas. East Dunbartonshire teachers explored how coding could connect with music or mathematics, for example, programming a micro:bit to become a pedometer and support counting steps on the Daily Mile. East Ayrshire's

"This session, [the PSDO] supported our school to deliver STEM activities which were challenging and engaging for all learners. She delivered a series of lessons which were tailored to upper and lower primary classes using both woodworking and Makedo cardboard tools. The learners and staff have greatly benefited from collaborating with [the PSDO] this session and are keen to continue this collaborative practice going forward."

Practitioner, CNES

"My Bit" project linked STEM to outdoor learning and sustainability. Career links, family learning events, and community engagement opportunities further strengthened practitioner understanding of STEM's relevance beyond the classroom.





Feedback from across authorities consistently highlights that practical, collaborative support has been more impactful than standalone training, with practitioners reporting higher confidence in using resources, explaining underlying science concepts, and making interdisciplinary links. By embedding STEM into whole-school planning, offering hands-on resource training, and modelling lessons alongside teachers, RAiSE has equipped practitioners with the skills and knowledge to deliver meaningful, engaging STEM learning with confidence.

Strengthening STEM Confidence in Early Career Teachers

RAiSE has played a key role in building the confidence, skills, and knowledge of probationer teachers by ensuring STEM is introduced early in their careers through targeted professional learning and practical resources. Across several local authorities, probationer-specific training has focused on how STEM can be integrated into everyday classroom practice, from outdoor learning and story-based approaches to structured science enquiry and engineering design.

Probationer CLPL has also been carefully designed to balance pedagogy with practical strategies. Across RAiSE authorities, large cohorts of new teachers received training on

planning for STEM, using key resources such as STEM Through Stories and science planners, and adopting approaches such as woodwork and STEM challenges. In Falkirk, probationers also received Young STEM Leader training, becoming Tutor Assessors for the programme, which provided them with additional leadership skills and a direct pathway to develop pupil leadership in STEM. In some local authorities, probationers were introduced to STEM loan boxes available, hands-on workshops, and resource creation, enabling immediate application of learning in their classrooms.

Feedback from probationers highlights a shift in mindset and practice as a result of this support. Probationers reported feeling **more confident in delivering science and STEM** activities, moving from isolated weekly lessons towards embedding STEM into interdisciplinary learning. The opportunity to trial experiments, borrow equipment, and link to national initiatives like Read, Write, Count or Young STEM Leader has given probationers practical tools to enhance their teaching.

“The additional science explanation. I have done the activity before with older classes but have not explained the underlying science effectively. I feel more confident to do that now.”

Practitioner, Scottish Borders

“The concept and format of the day were in line with our school improvement plan priorities, as well as authority and national Learning for Sustainability and Climate Change education frameworks.”

Headteacher, Argyll & Bute)



Empowering Practitioners Through STEM Showcases

Several RAiSE local authorities have hosted events to showcase STEM learning and engagement. Events have also provided opportunities for learners and practitioners to engage with wider themes such as sustainability and careers in STEM. In Argyll & Bute, the LANDS25 event gave learners hands-on experiences with building challenges and outdoor learning, while also raising awareness of diverse STEM careers. Feedback from learners reflected excitement and enjoyment, while headteachers and practitioners highlighted how the format aligned with school, local, and national priorities. These large-scale, collaborative experiences not only benefited learners but also helped staff see how STEM could be delivered in engaging, interdisciplinary ways.

In Falkirk, the STEMposium created a platform for schools and ELC settings to share their STEM journeys with peers. The event fostered professional dialogue, encouraged reflection, and provided practical inspiration, with practitioners noting that they left with new ideas, reassurance that STEM can be delivered without expensive resources, and an appreciation of the different stages schools are at in their journeys. The inclusion of learners presenting their learning further demonstrated the impact of STEM in practice and motivated staff to continue

developing their approaches. Through these events, RAiSE has built practitioner confidence by showcasing real examples of STEM teaching, providing space for collaboration, and aligning activities with wider educational priorities. This combination of professional learning, peer support, and visible impact on learners has equipped staff with both the belief and the practical strategies to embed STEM more effectively in their practice.

Embedding STEM in School Improvement and Practice

RAiSE has significantly strengthened practitioner practice by embedding STEM more deeply within school improvement planning and curriculum design. In Clackmannanshire, the number of establishments with STEM explicitly included in their School Improvement Plans increased from just three to fifteen in a single academic session. This shift demonstrates how RAiSE has helped schools move from isolated projects to a more strategic, whole-school approach, often using STEM as a lens to enhance curriculum, digital learning, and outdoor learning.

In terms of curriculum and assessment, STEM projects and professional learning support schools in developing curriculum across the four contexts, ensuring learning is relevant and linked to numeracy, literacy, and meta-skills. Teachers are encouraged to use STEM for assessment

“It was really interesting and fun, we enjoyed being outdoors a lot, I really liked the building challenge.”

Pupil, Argyll & Bute

and to deliver interdisciplinary and inquiry-based learning through projects such as First LEGO League Explore & Challenge and school grounds or garden projects.

Across other authorities, RAiSE has also encouraged innovative and scalable practice. In East Ayrshire, schools have shared effective STEM practice with peers, supporting professional learning networks. In East Renfrewshire, a dedicated STEM Week introduced daily challenges, online sessions with female engineers, and a large-scale quiz, reaching thousands of learners while also showcasing to practitioners the breadth of engaging approaches available. These examples reflect how RAiSE has supported teachers to move beyond individual classroom activities to embedding STEM in wider school culture, curriculum planning, and learner experiences, ensuring that practice is sustainable, relevant, and inspiring.

Developing Confident and Capable STEM Educators

RAiSE has played a pivotal role in building practitioner confidence across Scotland by providing high-quality professional learning, practical resources, and ongoing support that enables teachers to embed STEM in their classrooms. This shift in confidence has extended to pupil leadership too, with teachers describing how projects have grown from being led by a single teacher to involving whole-school participation and pupil-led initiatives.

“I see the teachers [have] gone back and used professional learning (CLPL) with their class and applied it or a skill or resource that we’ve recommended and shared with them...then they have had the confidence to want to share that in a public forum with other practitioners, that they’ve felt confident enough to say look what we did... We’re seeing much, much more of that [teachers adopting ideas from RAiSE CLPL] and I think it is indicative of the fact that teachers are feeling more confident, they’re trying new things, which I don’t they would have tried before had they not come along to a training session.”

PSDO, Dumfries & Galloway



“It just keeps going and because you’re involving more people to do it, to start with it was [a teacher], who was leading it and because it’s grown, other teachers are doing it ...we’re involving all those other people to get on with it and also the kids are leading a lot of it.”

PSDO, Dumfries & Galloway



“RAiSE has introduced fantastic courses and resources that have aided me when teaching STEM as this was something before I felt extremely unconfident in.”

Practitioner, North Lanarkshire

“Having taken part in the experiments I am more confident delivering them.”

Practitioner, East Renfrewshire

“[The PSDO’s] input has made me massively more confident to get stuck in with STEM in the classroom, and the children have loved every minute of it! Thank you!”

Practitioner, Midlothian

“The hands on activities really help me to understand how this can be implemented in to the class.”

Practitioner, East Renfrewshire



A recurring theme across authorities is the value of hands-on, practical CLPL. Practitioners highlighted that being able to trial experiments, challenges, and tools themselves gave them the confidence to replicate activities with learners, particularly in areas they previously felt uncertain about such as engineering, coding, or electricity. Teachers described feeling reassured

that STEM does not require expensive resources and that the support from Primary STEM Development Officers (PSDOs) meant they could experiment and adapt approaches in ways that felt manageable and achievable. This blend of practical experience with theoretical input has been crucial in shifting teachers’ mindsets from hesitation to confidence.

The programme has also supported teachers in overcoming long-standing anxieties about STEM subjects. In East Ayrshire and East Dunbartonshire, for instance, practitioners reflected that training helped them overcome their initial worries about science being “too complicated” and improved their confidence in using benchmarks and Es and Os for planning.

“I really enjoyed how practical it was. As someone who was often asked to leave Science when I was a student at a school because I wasn’t doing it right, I really appreciated the PSDOs ‘have a go’ approach as I didn’t feel there was a right or wrong way to do it. I want to say this session was one of the best CLPLs I have done in a long while! It made me enthusiastic and I found it highly engaging.”

Practitioner, West Lothian

In Glasgow and West Lothian, the introduction of Primary STEM Leaders created a multiplier effect, with confident practitioners inspiring colleagues and raising the profile of STEM across whole schools and communities. Headteachers have reported that this has “transformed” teaching in their settings, leading to more progressive and enjoyable learning experiences for learners.

“Having the support of STEM Glasgow has been hugely beneficial for our school. The level of training offered to our Primary STEM Leader was of a very high quality and the continuing support available has been hugely beneficial to us. The teaching of STEM subjects in our school has been totally transformed and there is a real buzz in the classrooms when it comes to STEM.”

Headteacher, Glasgow

“It really has transformed my own knowledge, understanding and teaching. I feel much more confident in my science pedagogy and better able to not only meet learners’ needs, but also provide progressive and enjoyable science experiences for them.”

Primary STEM Leader, Glasgow

“I have learned a lot about how to teach STEM to my class. In particular using engineering challenges which was something I would never have been confident enough to do before.”

Practitioner, Dundee



Across all participating authorities, RAiSE has enabled teachers to grow in confidence not only as individuals but also as leaders and mentors for others. Teachers who once lacked confidence in STEM now lead coding clubs, present at conferences, or support probationers in developing their own practice. The consistent message from

practitioners is that RAiSE has made STEM more approachable, engaging, and sustainable by building teacher confidence in both their own abilities and in their capacity to support learners and colleagues. This confidence has created a ripple effect, strengthening STEM provision across classrooms, schools, and local authorities.



“The support from the PSDO has been invaluable as our staff are more confident in developing high quality STEM lessons in order to equip our learners for the future. The PSDO has led high-quality professional learning and staff have found these to be a positive experience. Staff who previously did not have the confidence to facilitate investigations or lead learning through the STEM lens are now more confident and are beginning to use STEM as a vehicle to deliver the Broad General Education.”

Headteacher, West Lothian

Overall, RAiSE has built practitioner confidence by demystifying STEM, providing tangible resources and strategies, and creating supportive professional networks. By empowering teachers with knowledge, skills, and enthusiasm, it has enabled STEM to be more visible, accessible, and embedded in schools -contributing to a sustained cultural shift in how STEM is taught and valued in primary education.

“By deepening my own understanding, I have been able to support our teaching staff to develop their own capacity. By auditing and reevaluating our school curriculum, lessons are now well resourced and more relevant for the learners.”

STEM Lead, West Lothian

Practitioner Confidence

Primary STEM Development Officers (PSDOs) provided **tailored support** including team teaching, lesson modelling, and resource development.



In Clackmannanshire, the number of establishments with STEM explicitly included in their SIP **increased from 3 to 15** in an academic session.

×5

South Lanarkshire - **17 out of 18** original mentors continued beyond the grant period. Falkirk - retained **7 out of 8** mentors.



RAiSE resources have **over 65,000** views to date.



15.5% increase in confidence of teaching engineering.



North Lanarkshire virtual classrooms integrated STEM into remote learning during lockdown, reaching **over 20,000 learners and accessed more than 600,000 times.**



1,356 hours of CLPL organised by National Education Officer for Primary STEM Development Officers.



5.2 Learner Engagement



Transforming Learner Opportunities Through Practitioner Confidence

The increased confidence, skills and knowledge of practitioners (developed through the support of the Primary STEM Development Officers), has had a transformative impact on learners' opportunities to engage and achieve in STEM across Scotland.

Primary STEM Development Officers (PSDOs) have played a critical role in building

practitioner capacity through targeted professional learning, resource development and practical in-class support. This, in turn, has led to more meaningful, ambitious and context-rich learning experiences for learners. As practitioners became more confident in embedding STEM across the curriculum and aligning it with key priorities such as LfS, learners benefitted from increased exposure to real-world applications, hands-on problem solving and interdisciplinary learning.

"The STEM curriculum has been rejuvenated with purposeful links made between disciplines and relevant contexts developed. There is a significant improvement in the quality of learning experiences offered to learners which is evident through higher levels of engagement, increased motivation and ambition. Many learners are aspiring to STEM careers. Unintended impact- the high quality learning experiences have created an equity of experience for learners with those with additional support needs able to engage, participate and contribute in line with your peers."

Headteacher, Falkirk

Ekosgen STEM evaluation data shows that in RAiSE local authorities, the sciences are the first choice in terms of preferred subjects across all stages, including the primary sector (P6 and P7). In addition 45.6% of learners reported that they 'definitely' or 'maybe plan to study STEM' after school or get a STEM job meaning learners in RAiSE local authorities are **2.5 times more likely** to definitely or maybe study STEM or get a STEM job. This evidence of RAiSE impact, drawn from Education Scotland and Ekosgen surveys, demonstrates that the approaches

being implemented through RAiSE are helping to remove structural barriers to STEM and are pointing to the direction of reform that is required within the STEM curriculum.

What's more, it has become evident that RAiSE can be a vehicle to engage disengaged learners. Some PSDOs also worked with Additional Support Needs (ASN) settings to ensure learners with additional support needs could access STEM through sensory based and story driven approaches. (See Appendix 4)

Teachers also noted that RAiSE professional learning has helped them create engaging STEM activities across the curriculum, enhancing learners' interest and exposure to scientific language and vocabulary from an early age.

"It's their exposure to the language, it's using scientific language that they maybe wouldn't have in the past because they're getting that chance to explore and try things out themselves and then from a young age they start to think that way and maybe do see a love for science and maths."

Practitioner, Angus

School-wide initiatives, such as engineering competitions and interactions with STEM Ambassadors, have further enriched learning experiences. Teachers reported that these initiatives allowed learners to explore new technologies, lead their own learning, and experience success that boosts confidence and self-belief. Professional learning has been described as invaluable in supporting teachers' creativity, interdisciplinary planning, and professional development, which in turn provides richer learning opportunities and positive outcomes for learners, including enhanced problem-solving, independence, literacy, numeracy, and engagement.



"The children are able to reference STEM learning and related vocabulary in real-world contexts, and make links."

Practitioner, Midlothian

"Our learners have stated they are excited about STEM lessons and enjoy the opportunity to put into practice what they have learned. They are engaged and motivated in their learning experiences and are building their problem solving and independence skills. It is having a positive impact on our attainment as well. Through STEM, reluctant writers are keen to write information reports and this is impacting on developing their literacy skills. Others are finding numeracy and maths is making more sense to them as it is being taught in a practical context. The impact has been positive on staff confidence, the quality of learning experiences and ultimately the outcomes for our learners and their attainment and the support of the PSDO has been invaluable in developing approaches and supporting the beginning of the refresh of our curriculum."

Headteacher, West Lothian

"Yes, learners have demonstrated increased achievement in literacy and numeracy this year due to STEM learning -developing digital skills and knowledge to create new texts and develop numeracy skills has proven really effective."

Practitioner, Midlothian

The widespread delivery of live lessons, STEM festivals and industry-linked events demonstrates how increased practitioner confidence leads to more varied, high quality opportunities for learners to interact with STEM professionals and apply their learning in authentic contexts. For example, in East Renfrewshire, the PSDO created and shared resources for the Glasgow Science Festival Creating Engineers Challenge. All seven clusters engaged which was the highest level of engagement by East Renfrewshire schools in the 18 years of the challenge.

Extending STEM Learning Beyond the Classroom

Several initiatives have been developed to support STEM learning at home, including family STEM Bags, home learning packs for the First LEGO League Discover programme, and STEM themed story-based projects. These resources allow families to explore STEM concepts together, building science capital and encouraging discussion of careers and real-world applications. Family Tinkering Clubs in libraries, multi-session workshops across primary schools, and STEM home challenges have proven particularly effective in sustaining engagement, even in areas of higher deprivation. Teachers reported that STEM-themed family sessions attracted sustained attendance, often including male adults who are traditionally less involved in school learning events.

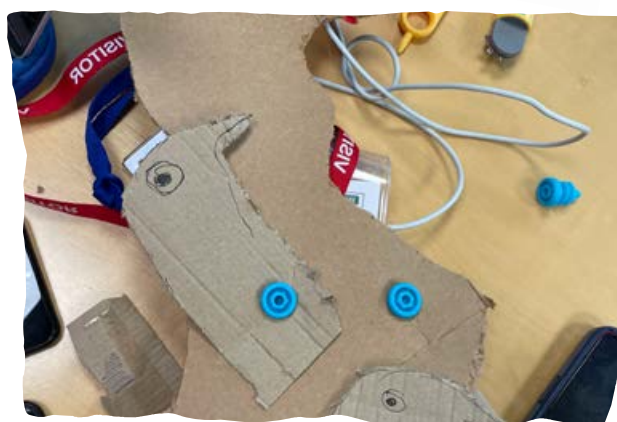
Large-scale community events have also played a significant role in promoting family engagement. For example, a two-day STEM family event in Edinburgh in 2018 attracted over 700 participants, demonstrating the potential to reach communities that are often hard to engage. Similarly, STEM Family Fun workshops and other local initiatives successfully increased awareness, confidence, and participation in STEM among parents and children, with particular attention to promoting gender balance and STEM Capital. These events, combined with STEM Hubs in schools, have been recognised as transformative in fostering sustained STEM engagement.

“Interestingly, most schools commented on the number of male adults who attended the sessions, as the focus for all was engineering.”

(PSDO), East Dumbartonshire

“We also found that after school parental engagement events we run, typically the numbers involved drop over time, but the STEM-themed events saw the numbers sustained. Also, the children were talking about it, there was a buzz about it and other children wanted to be involved, so we’re developing this as part of our curricular map.”

**Principal Teacher,
West Dunbartonshire**



“At one family learning event we were building propeller boats with children, parents and grannies engaging. And I remember one granny got her boat to work and she turned around and said ‘I was always rubbish at science; I’m great at this! Can I take this home with me?’”

Practitioner, West Dunbartonshire

Across the programme, feedback from teachers and parents indicates that family-focused STEM activities create excitement, stimulate discussion, and build skills in problem-solving, creativity, and collaboration. They also provide meaningful opportunities for learners to lead their learning and for families to gain confidence in STEM. Projects such as Family Science Clubs, supported by external grants, further enhance the accessibility of STEM learning for diverse communities. Overall, the RAiSE programme demonstrates that family and community engagement, supported by well-resourced and thoughtfully designed activities, is an effective strategy for increasing STEM interest, confidence, and participation across all age groups.

Inspiring Learners Through Innovative STEM Projects

Increased practitioner confidence and expertise in STEM delivery across Scotland has significantly broadened learners' opportunities to engage in meaningful, hands-on STEM activities.

Many RAiSE authorities have implemented projects and competitions that enhance both access and achievement in STEM. For example, STEMovator's Climate Smarter and Little Lighthouse projects, Institution of Engineering and Technology's First LEGO League and Glasgow Science Centre's Creating Engineers Challenge. Notably, the Dundee and Angus First LEGO League Regional Tournament in 2023 was the largest in Scotland, with several schools advancing to national finals. learners responded enthusiastically to forensic-themed activities, exploring DNA and investigative techniques, demonstrating how cross-curricular approaches can spark interest in STEM careers.

Gaelic resources such as Am Puffin Bodch, developed through the University of Strathclyde, have been used successfully across the Western Isles with a range of ages, supporting inclusive STEM and social engagement.

"I enjoyed this and I liked making our footprints with crayons and our fingerprints with ink. I liked working out who it was and learning about DNA. I want to work in forensics like that too!"

Primary Pupil, CNES

"I thought the poorly puffin was wonderful because we were like the police and we worked out who it was."

Primary Pupil, CNES

The lessons were exciting and so interesting and I had never done anything like this before, they were so good. I didn't know how forensics worked or what sort of things the police did before this.

Primary Pupil, CNES

Digital skills and health-focused STEM learning have also been promoted through initiatives like the DigiInventors Challenge, in collaboration with Digital Health Innovation Centre, engaging **over 800 learners** over 3 years in creating digital solutions aligned with Second Level Curriculum for Excellence outcomes. Across all projects, feedback from learners, teachers, and practitioners highlights high levels of enjoyment, engagement, and the development of STEM skills, problemsolving abilities, and creativity.

Enhancing Transitions Through STEM

Primary STEM Development Officers (PSDOs) have supported STEM focused transition events providing alternative engagement activities to ‘traditional’ transition. These events included hands-on science, engineering, and digital challenges, often supported by industry and higher education partners, which helped learners engage, build skills, and connect learning to real-world STEM careers. Feedback from learners, teachers, and school leaders highlighted increased enthusiasm, high-quality outputs, and positive engagement, particularly **for learners who might not typically participate in other transition activities.**

Multiple digital transition events have also been planned by PSDOs as well as workshops delivered by industry partners. PSDOs have enabled transition experiences that are more inclusive, stimulating, and linked to both prior learning and future STEM pathways.

Connecting Learning to Future STEM Pathways

Increased practitioner confidence and expertise in STEM delivery has enhanced learners’ awareness of STEM careers and aspirations. Across authorities, teachers integrated STEM activities with real-world career contexts, from coding and robotics to forensic science and biomedical experiences. Learners were able to see clear links between classroom learning and future opportunities, which helped spark curiosity, motivation, and ambition. Practitioner-led workshops and events enabled learners to explore a wide range of STEM roles, understand career pathways, and make personal connections to potential STEM futures, often inspiring learners to consider careers they had not previously imagined.

“This is a welcome change to the usual format, having different types of workshops covering STEM areas has been great, the learners have been really engaged. I would like to see more different partners involved in the future as it was great hearing them talk to learners about their jobs.”

P7 Practitioner, Argyll & Bute

“Transition is usually just sports, I like that there are lots of different STEM challenges this year, I don’t really like sport, I loved using the Spheros.”

P7 Pupil, Argyll & Bute



“I had a couple of learners who were nervous about coming and were not keen to do all the sports events, when they found out there were science and engineering activities they became a lot more enthusiastic about attending.”

P7 Practitioner, Argyll & Bute



Advancing Gender Equity in STEM

Increased practitioner confidence and skills in STEM delivery has helped promote gender equity and engagement in STEM. Teachers reported greater participation and interest from girls, supported by initiatives such as makerspaces, coding and engineering clubs, and targeted workshops. Programs like DigiSTEM Clubs and FemEng sessions provided female learners with hands-on STEM experiences, challenged gender stereotypes, and encouraged ongoing participation. Upskilled practitioners were able to sustain and expand these opportunities, delivering inclusive STEM learning both during and beyond the classroom, increasing access and achievement for female learners in particular. (See Appendix 5)

"I was at (a school) and they were doing a Science Skills Academy activity... where the primary school children went to the hospital to learn about biological systems...and it was just fantastic... a fantastic model. And that's linking up hospitals, where the P6 children could see examples of STEM as a career. The doctors were fantastic; they spoke about how they got into their jobs, what science they did in school, what they do in their careers. And they really pushed that science is really important, if you want to be a doctor."

Local Authority Lead, The Highland

"The children were going around the STEM workshops, generally related to career journeys and talking about lots of things, they were so enthused and one of the girls said, 'I really like art so does that mean I could be a games designer?', Wow! Yes! That connection has just been made and you just think wow that could be the thing that that little girl needs to move on and have a STEM type career."

Practitioner, Angus

"I also see the girls more engaged in it which was a big thing for me...I'm hoping to try and do a 'maker space' [and] the girls are just as engaged and interested as the boys are. In the past I wouldn't have seen that."

Practitioner, Dumfries & Galloway





Fostering Pupil Leadership Through STEM

Increased practitioner confidence and skills in STEM delivery has supported the growth of pupil-led learning, empowering learners to take ownership of STEM activities and share knowledge with peers. Initiatives such as Young STEM Leaders, pupil-run clubs, and STEM ambassador programs have enabled learners to lead workshops, manage resources, and deliver activities across primary and secondary stages. These opportunities have fostered creativity, problem-solving, and leadership skills, while also increasing engagement, participation, and achievement in STEM. In many cases, learners have self-directed learning, guided transitions, and even planned to undertake formal leadership awards, demonstrating both sustained interest and confidence in STEM.

“I have used my engagement with RAiSE to involve learners to lead learning in classrooms. We have created STEM boxes for each class to develop creativity/engineering skills. Our School STEM Ambassadors meet weekly to plan and organise resources for STEM activities in classes.”

Practitioner, North Lanarkshire

Engaging Learners Through Hands-On STEM Experiences

Increased practitioner confidence and skills in STEM delivery have enabled a wider range of high-quality STEM events, providing learners with unique, hands-on experiences that extend beyond the classroom. Large-scale events such as science fairs, authority-wide STEM festivals, and themed STEMfests have engaged hundreds of learners and community members. These events offered diverse activities, from physics and biology workshops to STEM in sport and library programmes, allowing learners of all ages and abilities, including those with additional support needs, to explore, participate, and achieve in STEM in new and meaningful ways. (See Appendix 6).



Pupil Engagement

Learners in RAiSE authorities are **2.5 times more likely** to consider STEM careers.



STEM activities **improved literacy, numeracy, and problem-solving skills.**



East Renfrewshire PSDO created and shared resources for the Glasgow Science Festival.



All 7 clusters engaged: highest level of engagement by East Renfrewshire schools in 18 years.

Inclusive approaches enabled ASN learners to access STEM through sensory and story-based methods.



Digital skills and health focused STEM learning have been promoted through initiatives like the Digi-Inventors Challenge engaging over **800 learners over 3 years.**



A two-day STEM family event in Edinburgh in 2018 attracted **over 700 participants.**



5.3 Partnerships

Enhancing STEM Learning Through Partnerships

Partnerships played a central role in the delivery of RAiSE, enabling schools to access industry expertise, real-world STEM experiences, and additional resources. Across authorities, collaborations with universities, businesses, and community organisations facilitated hands-on workshops, projects, and competitions. Learning for Sustainability has also been central, with planning, professional learning, and resources making **explicit connections to the Sustainable Developmental Goals, children's rights, careers, and outdoor learning**.

Several projects have been delivered in partnership with industry and universities. These include *Our SuSTEMable Island*, a renewable energy careers project involving 19 schools in Argyll and Bute. Other initiatives such as *STEMovation* in Dundee involved college learners creating STEM challenges for primary learners. Entries were then displayed in Dundee Science Centre. In addition, introduction of tools benches into 13 schools have strengthened practical and engineering-based learning. Outdoor and sustainability projects have also grown, with Dundee schools receiving raised beds through collaboration with community allotments and justice services.

Strong business partnerships have been built to enhance career awareness and digital skills. Make It Happen, supported by JP Morgan, reached 88% of primary schools and has engaged over 8,000 learners across East Dunbartonshire, delivering learning around app design and creativity.

The Goblin Kit Car programme in Fife exemplifies how RAiSE-facilitated partnerships develop STEM in real-life contexts. learners worked alongside engineers to design and build



cars, strengthening skills in creativity, collaboration, communication, and problem-solving. The project has expanded from 12 schools in 2018 to 29 in 2019, with practitioners reporting high levels of engagement and skill development. Similar cluster transition and engineering partnership models have since been adopted elsewhere, most recently in Scottish Borders.

These partnerships enhanced pupil engagement, promoted problem-solving, creativity, and collaboration, and supported teachers through resources, professional learning, and practical guidance. They also strengthened school-community links and contributed to learners' awareness of STEM careers and real-world applications.

Connecting Transitions Through Partnership

A number of STEM transition events have been developed to strengthen links between primary and secondary schools while embedding clear connections to careers. For example, in Inverclyde all P7 classes participated in sessions with apprentices, graduates, and industry representatives, as well as interactive workshops designed to highlight career pathways. Workshops covered a broad spectrum of disciplines, from plumbing, sewage filtration, and engineering to wind turbine construction, electronics, digital music-making, and shipbuilding. Industry partners included Wind 4 Kids, Diodes, NRS, Sonappa, BAE Systems, Babcock, and Morton in the Community.

Digital transition events have also been implemented across some local authorities. For example, in East Ayrshire, two large-scale projects brought together 51 staff, 561 learners, and 12 partners. The first event engaged 277 learners and 6 STEM partners, while the second reached 284 learners and 11 STEM partners,

with IT specialists also supporting delivery. In addition, discussions with Heriot Watt University staff and education partners have shaped future planning, with agreement to deliver all transition events in May 2026 contributing to a sustainable offer and RAiSE legacy.

Investing in STEM Opportunity and Impact

Significant external funding has been secured to enhance STEM opportunities across schools.

This includes:

Local Authority	Funding
Midlothian	£15,000 from the IET for the Rescuers Engineering Challenge
Orkney	£18,000 approved by the DYW Orkney board for new STEM resources in primary schools
West Lothian	£500 in prizes from the Verdancy Group for a science game competition linked to the Circular Economy Challenge
Dundee	Michelin Scotland Innovation Parc's funding of nine mini LEGO walls for schools that had undertaken Makerspace training
CNES	£700 from British Science Week funding to host a Science Fair in March 2024
East Renfrewshire	£600 x2 from Royal Society of Chemistry 1. DeSTEMber CLPL resources 2. Cluster STEM Mentors support for resources for CLPL programme
Argyll and Bute	£2,000 from Institute of Mechanical Engineering for 'STEMgineers' challenge. STEMgineers is a program of work designed to develop both practitioner confidence in exploring engineering with learners and also develop pupil understanding of engineering principles. Funding paid for resources for 12 classes.
Falkirk	Education Scotland STEM grants x2 1. £5,161 - Designing a teaching resource linking Engineering Design Process with Makedo 2. £7,661 - STEM Mentor Network – training provided and cascaded by Mentors across authority
South Lanarkshire	Education Scotland STEM grant £10,000 - STEM Mentor training focus on engineering/digital technology and training delivered by Mentors
Dundee	£20,000 from Nature Scot for nature schools project

The Rescuers Engineering Challenge, developed in partnership with the National Mining Museum and Heriot Watt University STEM Ambassadors, has become a highly valued programme in Midlothian, now running for two years with further expansion planned. Feedback has highlighted its innovation, strong organisation, and effectiveness in developing teamwork, problem-solving, and engineering skills, with learners and teachers describing it as one of their greatest achievements.

Further targeted initiatives have included a successful joint bid to the Digital Xtra fund with East Renfrewshire's Equity (Digital Inclusion) Officer, supporting a STEM club for twenty girls from one cluster which provided an inclusive, hands-on learning experience. (See Appendix 5)

These projects demonstrate how over £111,000 of funding has been leveraged to provide highquality STEM learning, build equity, and strengthen links to careers and industry.

£1.744 million was also awarded to RAiSE authorities through Education Scotland's STEM grants programme between Rounds 2 and 4.

"The project was well planned and extremely well resourced to ensure learners had everything they needed to demonstrate their ability to achieve the 4 capacities within CfE. My learners loved participating in the Rescuers project, describing it as one of their greatest achievements and experiences in P7."

Practitioner, Midlothian)



Strengthening STEM Through Partnership and Collaboration

Partnerships were pivotal in the delivery of RAiSE events across Scotland, enabling large-scale, hands-on STEM experiences for learners, teachers, and the wider community. Local authorities collaborated with industry partners, STEM Ambassadors, universities, and organisations such as DYW, Wellcome Centre, and STEM-focused charities to design and deliver a wide range of activities. These included STEM festivals, career-focused panels, interactive workshops, STEMfests, roadshows, trashion shows, and showcases that connected learning with real-world applications and careers.

Events often targeted both learners and practitioners, providing opportunities for professional learning while engaging young people with STEM careers. For example, career panels, networking sessions, and workshops allowed learners to meet STEM professionals, while teachers could develop curriculum ideas and build links with industry. Partnerships also supported inclusivity and community engagement, as seen in summer roadshows in Edinburgh for SIMD 1–2 areas and collaborative events that brought together multiple schools or clusters.

Partnership work with STEM Ambassadors has been a recurring strength and ‘speed networking’ events took place in East Dunbartonshire and Scottish Borders prompting connections with local industry partners.

The collaborative model enhanced the scale, variety, and impact of RAiSE events. Partnerships helped embed sustainability by creating repeatable event models, such as the Lochaber STEM Fair, and fostered ongoing connections between schools, industry, and higher education. Across authorities, these relationships strengthened STEM learning, raised awareness of career pathways, and increased engagement for learners, teachers, and communities alike.

Expanding Professional Learning Through Partnership

As previously noted, throughout the programme 1,356 hours of CLPL was organised by the National Education Officer for Primary STEM Development Officers, many of which involved partner delivery such as –

- Climate Smarter + Code vs Climate - STEMovators
- Linking Civil Engineering to sustainability - Institute of Civil Engineering
- Outdoor Learning - RHET
- Digital - Computing Science Unplugged, VEX Go, Vex 123, Sphero Indi - SSERC
- Curriculum Improvement Cycle - Education Scotland
- Powerful Partnerships - The Wood Foundation
- Biodiversity and Electrofishing - Tweed Foundation
- Taking Tools Outdoors - Learning through Landscapes
- Data Literacy - Data Education
- From Coal to Climate Workshop - Summerlee Museum
- Linking enterprise and STEM + Circular Economy Challenge - Young Enterprise Scotland
- Textile Technology - Paisley Museum
- Plastics Workshop - V+A
- Loose Parts Play - ScrapAntics



Partnerships were essential in designing, delivering, and enhancing professional learning (CLPL) for teachers, supporting both curriculum development and STEM engagement. Local authorities collaborated with universities, industry partners, STEM organisations, and charities to provide a wide range of training opportunities across Scotland.

For example, Aberdeenshire worked with Learning Through Landscapes to embed the Rosie Revere Engineer resource into loose parts play sessions. Dundee collaborated with RHET on Nature STEM and Growing Gardens CLPL, and developed ScrapAntics makerspace training. East Dunbartonshire partnered with SDS to deliver sessions on **Meta-skills to over 90 practitioners**, while Falkirk collaborated with the Falkirk Community Trust on STEM Heritage Box training and careers education.

Across Renfrewshire, Scottish Borders, and South Lanarkshire, PSDOs partnered with organisations such as RHET, the Royal Society of Chemistry, GeoBus, and STEM Ambassadors to deliver workshops on chemical changes, agriculture, electricity, and alternative energy. Partnerships also supported embedding STEM across literacy, numeracy, and computing curricula, as seen in West Lothian with Heriot-Watt University, West Lothian College, and SSERC.

These collaborations allowed PSDOs to provide practical, curriculum-linked training, enhance teacher confidence, and build connections to real-world STEM careers, ensuring professional learning was engaging, sustainable, and directly relevant to classroom practice.

Embedding STEM Across the Curriculum

Primary STEM Development Officers (PSDOs) collaborated with local and national organisations - including universities, industry partners, STEM Ambassadors, Rangers Services, and curriculum teams – to develop resources, cross-curricular planning, and real-world learning experiences for learners.

Curriculum links have been strengthened through collaboration with local authority teams in literacy, numeracy, and assessment, resulting in cross-curricular CLPL, co-created resources, and exemplars to support teaching. Specific initiatives include developing Literacy through STEM resources, connecting STEM to Maths and Numeracy pathways, and integrating the RAiSE Engineering Habits of Mind toolkit into planning. Ongoing work includes creating STEM planners that embed links across the curriculum, ensuring cohesive learning in literacy, numeracy, and STEM subjects.

“Introduced learners to a new dimension in Science. Working with business partners has offered learners real world experience of Science and Technology and strengthened community links!”

Practitioner, East Renfrewshire

In the 2022/23 Education Scotland Practitioner Survey, 55.2% of primary practitioners in RAiSE local authorities indicated that their setting had a STEM partner. This represents a 20.6% increase from the 2020/21 survey, when the figure was 34.6%. These findings demonstrate a notable strengthening of STEM partnerships within RAiSE local authorities over the years.



Partnerships

RAiSE local authorities received **£1.744 million** through Education Scotland's STEM grants programme between Rounds 2 and 4.



Leveraged funding from other funding sources
= £111,000+



Strong collaborations with industry, universities, and community organisations enriched STEM learning.



There was an **increase of 20.6%** from 2020/2021 to 2022/2023 in RAiSE authorities having a STEM partner in their setting.



Partnerships supported events, professional learning, and curriculum development.



Projects like Goblin Kit Cars, STEMgineers, and DigiSTEM Clubs **connected learners with realworld STEM contexts.**



5.4 Celebrating the Learning, Inspiring the Future: The RAiSE Legacy Event



On 21 May 2025, the RAiSE Legacy Expo, “Celebrating the Learning, Inspiring the Future”, took place in Glasgow, bringing together teachers, education leaders, and STEM partners to reflect on a decade of transformative impact in primary STEM education.

The day opened with an inspiring keynote from Professor Suzie Imber – space physicist, explorer, and high-altitude mountaineer – whose talk on space, science, and climbing captivated the audience and set the tone for a day of dynamic learning.

Participants then immersed themselves in a wide range of interactive workshops, from *STEM through Nature* and *The Weird and Wonderful World of Mosquitoes* to *Songs, Rhymes and Outdoor Learning*. Sessions, delivered by industry partners and Primary STEM Development Officers (PSDOs), provided both professional development and opportunities for collaboration, ensuring the RAiSE legacy continues to grow. (See full workshop information [here](#)).

Garreth Wood, Chairman of The Wood Foundation, reflected:

“RAiSE has demonstrated that strategic investment in practitioner support and localised implementation leads to sustainable, systemic improvements in STEM education. As Scotland to face evolving workforce demands and global challenges, investments like RAiSE are vital to preparing young people to become critical thinkers, innovators, and problem-solvers, ready to contribute to a diverse and forwardlooking economy.”

Feedback Highlights:

Feedback was overwhelmingly positive, with 9 out of 10 participants recommending the event.

Key themes included:

Outdoor & Nature-Based Learning

- “STEM through Nature was brilliant – so many amazing ideas.”
- “Outdoor learning offered practical strategies for teachers at all levels.”
- “I felt inspired to take those ideas straight into my setting.”

Practical & Engaging Workshops

- “The Royal Society of Chemistry activity was simple, engaging, and easy to resource.”
- “The Reece Lab and Scientific Enquiry sessions boosted my confidence to teach science.”
- “Post-it planning gave clear, practical ways to improve practice.”

Resources & Tools for the Classroom

- “The grab-and-go resources and planners were excellent.”
- “The SDGs resource will be fantastic to use with my class.”
- “I have new knowledge of extensive resources I didn’t know were available.”

Renewed Inspiration & Confidence

- “I left with loads of new ideas and a renewed excitement for STEM.”
- “So many resources I didn’t know were available – I’d take all of it into the classroom.”
- “This event made me see new links across the curriculum.”



Collaboration & Legacy

- “By encouraging networks and working groups, RAiSE has created an amazing legacy.”
- “It was a brilliant opportunity to share what we do and connect with others.”
- “Impossible to choose one highlight – one of the best events I’ve ever attended.”

An online event was also launched on 27 May 2025 with six sections to explore.

- **Welcome and Key Note Speeches** – Listen to the UK Director of The Wood Foundation and the National Education Officer for RAiSE share their thoughts on the RAiSE programme legacy.
- **RAiSE Timeline** - Take a look at which authorities have onboarded across the years and an overview of the number of engagements, events and professional learning hours delivered by our Primary Science/STEM development officers.
- **Event Workshops** - Explore a variety of videos, narrated presentations and additional useful STEM information from our partners who have worked closely with us across the years of the RAiSE programme.

- **RAiSE Resources** - All of these resources have been created by teachers for teachers to give suggested activities, ideas, approaches for high quality STEM learning and teaching experiences.
- **RAiSE Stories** - Read and explore a range of case studies and news stories from across Scotland; showcasing successes and achievements in STEM which could ignite a spark in your own STEM practice.
- **RAiSE Daily STEM Challenges** - A range of STEM themed daily challenges for learners. Clicking on each will take you to a Canva presentation with suggested STEM challenges for learners to participate in.

Having an online event meant there was an equitable offer for those who couldn’t attend on the day. To date, the online event has been viewed more than 600 times.

The RAiSE Legacy Expo was not only a celebration of past achievements but also a powerful catalyst for the future of STEM education in Scotland.

RAiSE Event Highlights

The RAiSE Legacy event **increased visibility and enthusiasm** for STEM.



Events like the RAiSE Legacy event **showcased impact and inspired future practice.**



600+ views of the online RAiSE Legacy Expo page with anytime learning and resources.



“Impossible to choose one highlight – **one of the best events I’ve ever attended.**”
(Event attendee)



5.5 Leadership



The positioning of the National Education Officer within Education Scotland throughout the RAiSE programme has been highly advantageous. This arrangement enabled close collaboration with STEM colleagues and wider teams, while also providing valuable insight into policy priorities and future strategic planning.

Strong partnerships have been instrumental in the success of RAiSE. The National Education Officer (NEO) played a pivotal role in establishing and sustaining these partnerships, ensuring that Primary STEM Development Officers (PSDOs) accessed high-quality professional learning from ‘expert’ partners. This in turn strengthened PSDOs’ capacity to deliver their own professional learning and supported the effective dissemination of resources.

Over the course of the programme, more than **£57,000 in-kind resources** and professional learning opportunities were provided. These included materials such as KAPLA, Makedo, and Let’s Do Engineering activity books, which further enhanced professional practice and enriched STEM learning experiences.

From its inception, RAiSE has focused on building leadership capacity at every level. Many PSDOs have progressed into the following strategic roles; Principal Teachers (STEM and sustainability), Depute Headteacher, Headteacher, Quality Improvement Officer, STEM Education Officer with Education Scotland, RAiSE National Education Officer, Curriculum Support Officers, Principal Social Values Consultant with Jacobs Engineering, SSERC Education Manager for Early Years and Primary, Training and Development Officer

with Learning through Landscapes.

Feedback from former PSDOs highlights the lasting impact of RAiSE, with several noting how their involvement shaped their professional journey and leadership development.



“Leading a strategic approach to STEM can be difficult when you are not a direct line manager of any of the staff you work with. Influencing people through positive relationships, quality resources and timely support were my main tools to get staff on board. Increased understanding of the importance of developing and nurturing positive professional relationships was something I learned very early on. My understanding of the national policy landscape and the affect this has on schools also improved. I also established a network of local and national STEM contacts that continues to be one of my most useful resources.”

Former PSDO



“Being part of RAiSE has had a huge positive impact on me professionally. I was able to participate in a huge range of unique professional learning opportunities covering all aspects of STEM and have been able to maintain a network of colleagues across Scotland who have a wealth of experience and demonstrate a commitment to improving learning and teaching in STEM. Being able to apply my knowledge and skills from my experience as a classroom teacher in the context of delivering CLPL for colleagues has had a huge positive impact on me personally and professionally; I have grown in confidence and developed new in-depth knowledge of pedagogy within STEM and being able to share this with others has been amazing. Working strategically at local authority level has also been an amazing opportunity and I have developed my leadership capacity by leading projects and events across the local authority.”

Former PSDO

RAiSE has been the most significant influence on my career since I began teaching in 2005. Its positive impact within my local authority has enabled me to continue developing professionally, initially as a Primary Science Development Officer and more recently as an Education Support Officer. In this role, I have led on STEM, curriculum, and sustainability initiatives, while continuing to embed STEM across wider learning contexts. I am part of the Scottish Attainment Challenge team, where we work collaboratively to enhance learning and teaching across our schools. STEM is now recognised alongside Literacy, Numeracy, and Learning, Teaching and Assessment, and we ensure consistent messaging across all CLPL opportunities. A key area of focus has been curriculum design, where I've contributed to the development of STEM pathways with strong links to Literacy, Numeracy, and Assessment. I work closely with our Pedagogy Team to deliver school-based STEM workshops. My leadership has grown through managing projects and events at local authority level, including Education Scotland STEM Grants and the SSERC Primary Cluster Programme. I've supported community developments, established a STEM Resource Hub, and led initiatives such as 'Literacy, Science and Sustainability' and the STEM Pupil Leadership Academy. My partnership work spans across our Digital School, Vocational, and Pathways teams, helping to build STEM links and pupil leadership opportunities. Over the last year, I have had the opportunity to be part of the and worked with colleagues from across Scottish education as part of the Sciences Curriculum Improvement Cycle Core Group. RAiSE has been the driving force behind my professional growth, opening doors to leadership, collaboration, and innovation across my local authority. It has not only shaped my career trajectory but continues to inspire new initiatives and partnerships that strengthen STEM education and sustainability for learners and teachers.

Former PSDO



Sustained investment from local authorities further demonstrates the value placed on RAiSE. Between January 2019 and April 2025, authorities that had exited the formal funded phase of the programme collectively invested an estimated £1,269,504 to retain PSDOs on a full-time or parttime basis. This equates to more than 10 years of additional PSDO staff time, funded directly by local authorities. (Salary costs estimated using 2022 PT1 teacher pay scale).

Local authorities who invested in extending the Primary STEM Development Officer role beyond the RAiSE funded period:

Short Term	Angus Argyll and Bute Clackmannanshire	Edinburgh Falkirk Scottish Borders West Lothian
	East Ayrshire East Renfrewshire	
Long Term	Dumfries and Galloway Fife North Ayrshire	North Lanarkshire South Lanarkshire



Leadership Highlights



Local authorities invested over **£1.2 million** postfunding to retain PSDOs, demonstrating longterm commitment



RAiSE built leadership capacity at all levels, with many Primary STEM Development Officers progressing into other strategic roles



The programme influenced and **continues to influence, national policy and curriculum design**



RAiSE Impact

RAiSE resources
have had
65,000+ views



Over £111,000 of funding
leveraged from other funding
sources



15.5% increase
in teacher
confidence in
teaching
engineering



Local authorities
invested £1.2
million
post funding to
retain PSDOs



Learners in RAiSE
authorities are
2.5 times more
likely to consider
STEM careers



The RAiSE
programme
influenced and
continues to
influence national
policy and curriculum design



RAiSE local
authorities received
£1.744 million
through Education
Scotland's STEM
grants between Rounds 2 and 4



5.6 Challenges

Sustaining STEM Learning Through Disruption

RAiSE Primary STEM Development Officers (PSDOs) responded quickly and effectively to the challenges of the Covid-19 pandemic, ensuring that practitioners and learners continued to benefit from the RAiSE programme despite significant disruption to education.

One strong example comes from West Lothian, where the innovative Sways of Learning were developed during lockdown. These were complemented by online professional learning sessions to support delivery, and learners were given opportunities to upload their work and receive feedback. Shared via a newly established Teams space on the West Lothian STEM channel, the resources offered a wide variety of engaging activities. Their popularity was endured beyond lockdown, with practitioners praising their impact and effectiveness—evidenced by 7,480 engagements during Term 3 of 2020/21.

Across North Ayrshire, South Ayrshire, Clackmannanshire, Falkirk, North Lanarkshire, Orkney, CNES, and West Lothian, RAiSE support continued both during the pandemic and throughout the recovery period, when schools placed particular emphasis on literacy, numeracy, and health and wellbeing. To align with these priorities, the PSDO network created interdisciplinary context planners that embedded STEM learning within literacy and numeracy, while also connecting to other areas of the curriculum. These resources provided practical, curriculum-linked support at a time when schools were adapting to new ways of teaching and learning.

The Importance of Time in Sustaining Impact

Primary STEM Development Officers (PSDOs) consistently highlighted that a longer time-frame for their secondments would enhance long-term impact and help to embed sustainable change within local authorities. The first year was typically spent building relationships, establishing trust, and planning professional learning based on local survey findings. Aligning with local authority professional learning calendars in that initial year often proved challenging due to the timing of recruitment and programme onboarding. As a result, much of the early work focused on smallscale, bespoke support, with broader local authority engagement generally emerging in year two.

The local authorities that have seen the greatest long-term impact are those that were able to invest in extending the PSDO role beyond the RAiSE-funded period, ensuring continuity and sustained progress.

Raising Awareness and Extending Reach

Although the RAiSE programme has been running for nine years, there is an ongoing need to promote the programme and high-quality RAiSE resources to newly-qualified teachers and to those who have yet to discover them, including practitioners in local authorities that have not participated in RAiSE.

To address this, the National Education Officer (NEO) contributed to Education Scotland's communications plan, ensuring that information about RAiSE resources and opportunities have been shared more widely. This included targeted use of Education Scotland's social media channels alongside RAiSE's own platforms, helping to extend the programme's reach and visibility.

6. Recommended Next Steps

1. Supporting Curriculum Reform

The National Education Officer's (NEO) positioning within Education Scotland until April 2026 places her at the heart of the Curriculum Improvement Cycle (CIC) at a crucial stage of the programme. This provides strategic opportunities to shape and influence the new sciences curriculum and interdisciplinary learning workstream, drawing on the rich learning and legacy from RAiSE.

The next generation of learners will experience this refreshed curriculum over the coming decade so it is a profoundly important opportunity to be a part of this work. The RAiSE NEO brings deep insight into the kinds of learning that motivate and engage pupils, how to design professional learning that achieves reach and scale, and how to support innovation in both practitioner and learner experience. This expertise strengthens the quality and ambition of the Curriculum Improvement Cycle and supports the development of a curriculum that is dynamic, relevant, and engaging.

2. Exploring Opportunities for Future Funding

The RAiSE programme has benefitted enormously from The Wood Foundation's investment since 2016, which has enabled a decade of transformational impact in primary STEM education. As Scotland progresses through a period of significant curriculum reform, the approaches developed through RAiSE have an important role to play in supporting and resourcing the implementation of the new curriculum. Education Scotland, therefore, intends to explore potential funding

sources to support a new phase of RAiSE. This may include private investors, industry bodies, philanthropic foundations, and STEM-focused organisations. A diversified funding model would support longevity and ensure RAiSE continues to contribute to national priorities.

3. Maintaining momentum around RAiSE Resources

RAiSE has generated an exceptional suite of high-quality resources and exemplification materials. These continue to be highly valued and frequently utilised by practitioners which is evident in increasing page views. To maintain and expand this impact, continued visibility and active promotion are essential. This will be achieved through:

- regularly sharing links to resources through social media and digital platforms
- targeting newly qualified teachers and non-RAiSE authorities to increase the awareness of the suite of resources available
- offering national online sessions to widen reach, increase awareness and support practitioner engagement
- tailoring and updating resources to ensure alignment with the refreshed curriculum ahead of its 2028 launch

These actions, led by Education Scotland, will help ensure that RAiSE resources continue to support practitioners at all stages of their careers and that the programme's influence extends nationally and sustainably.

4. Developing the Young Workforce (DYW) and Industry Connections

RAiSE has demonstrated the powerful impact of meaningful industry engagement from early years onwards. With STEM learning and Developing the Young Workforce (DYW) now more prominent within the National Improvement Framework (NIF), there is an important opportunity to build longterm progression in STEM pathways. Education Scotland will continue to liaise with relevant Scottish Government policy teams and DYW Scotland to strengthen alignment between careers education, industry engagement, and early years/primary STEM learning. This aligns with current national discussions about the skills landscape review, the development of new qualifications, and the expansion of apprenticeship opportunities. These combined efforts will help ensure that the enthusiasm, confidence, and skills developed through RAiSE in primary school continue to be nurtured throughout secondary education, into further education, training, and employment.

5. Future Data Opportunities

The long-term strategic impact of RAiSE is still emerging, particularly as RAiSE learners transition into senior phase secondary STEM pathways. At present, only the pilot local authorities currently have full primary-to-secondary data; broader longitudinal impact will become clearer in the years ahead. The Trends in International Mathematics and Science Study (TIMSS), taking place in 2027 with results published in 2028, presents a valuable opportunity for Education Scotland to gauge the longer-term impact of the RAiSE investment. TIMSS will provide international comparative data on science and mathematics performance, including measures of learner confidence - an area that aligns closely with RAiSE objectives. Combining TIMSS findings with local longitudinal data will help build a

comprehensive evidence base demonstrating RAiSE's long-term impact on learner confidence, aspiration, and achievement.

6. Celebrating and Sharing the RAiSE Story

Education Scotland welcome the opportunity to continue working with The Wood Foundation in the next few months to share the story and successes of RAiSE. The findings of this impact report will be shared with key partners through relevant networks, national meetings, and stakeholder events. Continuing to tell the story of RAiSE will help strengthen its legacy, build wider understanding of its impact, and support future collaboration and system improvement. Education Scotland is committed to doing this in the months ahead.



7. Conclusion

Over the past nine years, the RAiSE (Raising Aspirations in Science Education) programme has made a transformative contribution to STEM education in Scotland's primary sector. What began as a pilot initiative in eight local authorities has grown into a national movement for improvement, engaging 27 local authorities and embedding sustainable approaches to STEM learning, teaching, and leadership.

At its heart, RAiSE has strengthened the confidence, skills, and capacity of primary practitioners to deliver high-quality STEM experiences for all learners. Through targeted professional learning, inschool support, and collaborative networks, teachers have developed the knowledge and assurance to integrate STEM across the curriculum in meaningful, relevant ways. Practitioners report feeling empowered, inspired, and capable of designing creative learning that connects with the real world. Many now act as leaders within their schools and clusters, sustaining the impact of the programme well beyond the funded period.

The growth in practitioner confidence has had a tangible ripple effect on learners. Across Scotland



children and young people are benefiting from richer, more engaging STEM opportunities that develop curiosity, critical thinking, and problem-solving. Learners in RAiSE authorities are now significantly more likely to aspire to STEM-related study or careers, reflecting a marked shift in attitudes, ambition, and understanding. Importantly, the programme has demonstrated that STEM can be a powerful vehicle for equity and inclusion - reaching diverse learners, supporting those with additional needs, and engaging families and communities in shared learning experiences.

Partnership working has been a defining strength of RAiSE. Collaboration between schools, local authorities, Education Scotland, The Wood Foundation, and a wide network of partners, from industry, higher education, and the third sector, has enriched professional learning and connected classrooms to authentic STEM contexts. These relationships have expanded access to expertise, resources, and opportunities, while embedding a culture of collaboration that endures at local and national levels.

The programme's flexibility and responsiveness have also been key to its success. RAiSE has adapted to changing national priorities, including Learning for Sustainability, education reform, and the UN Sustainable Development Goals. It has continued to evolve through challenges such as the COVID-19 pandemic,





maintaining continuity of learning through digital innovation and practitioner support. This agility reflects a model of educational improvement grounded in partnership, reflection, and shared purpose.

While the evidence points to substantial impact, the programme has also highlighted the importance of continuity in embedding change. Sustainable improvement in education takes longterm investment, local leadership, and the maintenance of professional networks. Where local authorities have been able to extend the PSDO role or integrate RAiSE principles into ongoing work, the legacy has been particularly strong.

RAiSE has left a lasting imprint on Scotland's primary education landscape. It has not only enhanced practitioner capacity and learner outcomes but also contributed to shaping national approaches to STEM and curriculum development. The resources, networks, and expertise established through RAiSE continue to influence practice and policy, supporting progression, interdisciplinarity, and real-world

learning across the curriculum.

As the programme concludes, the foundations it has built remain solid and forward-looking. The collective effort of local authorities, practitioners, and partners has created a vibrant community of STEM educators

committed to improving outcomes for learners. Education Scotland will continue to explore opportunities to sustain this momentum - continuing to share learning, strengthen partnerships, and embed STEM as an integral part of Scotland's evolving education system.

RAiSE has demonstrated what can be achieved when ambition, collaboration, and professional learning come together around a shared goal. Its legacy is one of empowerment, innovation, and opportunity - raising not only aspirations in science education, but the confidence and capacity of an entire system to inspire the next generation of learners and problem-solvers.

RAiSE has not only raised aspirations in science education - it has built a foundation for a more innovative, equitable, and future-ready Scotland.

8. References

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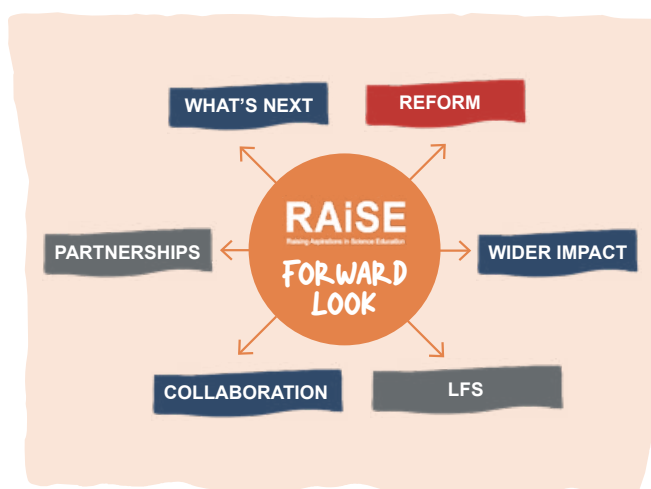


Appendix 1

Steering Group Members

- Laura McCafferty - National Education Officer, RAiSE
- Ali McLachlan - Former UK Director, The Wood Foundation
- Ian Menzies - Senior Education Officer - Education Scotland
- Lizzie Edwards - Scottish Government
- Carrie Lindsay - Association of Directors of Education in Scotland
- Euan Mitchell - Head of Early Years and Primary, SSERC

RAiSE Strategy Key Themes



1. Education Reform

Continued practice

- Staying informed
- Communicating with networks and being responsive

New approaches

- Enhanced connections
- Share what is working
- Learning and teaching

2. Wider Impact

Continued practice

- Resources providing sustainable long-term support
- Local and national networks
- Legacy approach

New approaches

- Communication strategy
- Further strengthening networks
- Promoting RAiSE

3. Learning for Sustainability

Continued practice

- Outdoor learning

New approaches

- Build PSDO capacity
- Focus on SDGs

4. Collaboration

Continued practice

- Education Scotland's STEM Team
- Building capacity and making connections
- Strategic leads

New approaches

- New opportunities in a time of change

5. Partnerships

Continued practice

- Existing partnerships
- National programmes
- SSERC
- STEM careers
- Persimmon Homes

New approaches

- SSERC
- DYW
- STEM and LfS Networks

6. What's next?

Continued practice

- Literacy and numeracy

New approaches

- Review of sciences curriculum
- Increase in importance of LfS
- Progression in learning

Appendix 2

RAiSE Resource Statistics

Top Ten RAiSE Resources

Resource	Number of views (up to 27 June 2025)
Science Planning Resource	26,267
STEM Through Stories	10,912
Technologies Planning Resource	10,795
RAiSE Page	7,424
Context Planners	5,654
STEM on a Budget videos	1,720
Engineering	1,413
Sustainable Development Goals	1,353
STEM Challenges	1,320
North Ayrshire Outdoor Science	1,039

Top three resource views



Appendix 3



Clackmannanshire
Council

Park Primary in Clackmannanshire restructures curriculum to focus on IDL and STEM

Park Primary School has launched a redesigned and restructured curriculum, using interdisciplinary learning (IDL) and STEM to address a range of curricular drivers and priorities.

The process involved in-depth consultation, consideration, and collaboration with a wide variety of stakeholders. This process was:

- Attendance at a Head Teacher event from Education Scotland and the local authority's RAiSE STEM Officer focussed on IDL which inspired the vision to redesign the model.
- Questionnaires and focus groups with families and pupils to understand their thoughts on the current curriculum, as well as consultation with staff.
- Three or four contexts were developed for each stage aligned to CfE and the local authority's STEM planners, as well as two whole-school contexts. These included topics such as popular stories.

- The STEM Officer provided guidance in terms of the STEM E&Os to chart progression, as well as highlighting existing resources and support in how to build upon the school's involvement in the SSERC Primary Cluster programme.

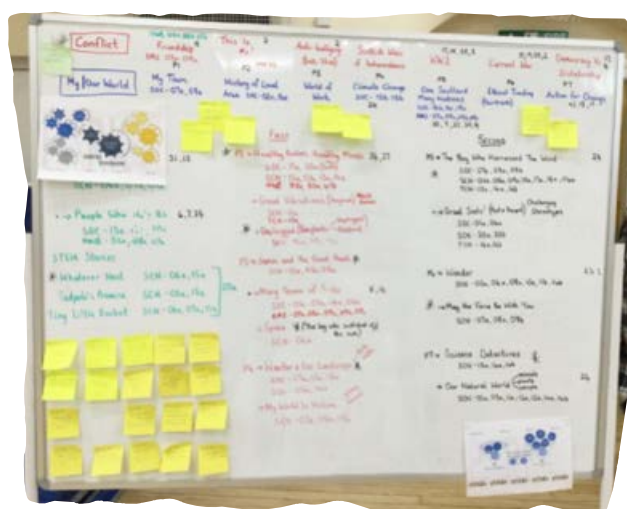
Following this exploratory and early preparation work, a full-day in-service focussed on staff co-creation of planners to align to the contexts and to improve confidence in delivering STEM.

There was also a session aligning the E&Os with themes including literacy, wellbeing, DYW, and Learning for Sustainability, highlighting natural links. The STEM Officer identified resources within the school which could be used to deliver the lessons and demonstrated their potential. There was a discussion about additional equipment and engaging partners.

Staff shared the following about the day:

"The refresh was interactive and hands on and allowed me to see that actually, to integrate science activity across other lessons (embedded) could be achieved with relative ease. The experiments and activities we did were simple but effective."

"Great variety of ideas of how to link science to a range of curricular areas, and useful examples of ideas for the classroom using resources from the school. Group activities enjoyed by all the staff and led to lots of discussion and sharing of ideas."



The STEM Officer supported the creation of accessible STEM resource kits.

A series of events across British Science Week to enhance the profile of STEM across the school and to utilise the resources. The Depute Head Teacher and STEM Officer delivered lessons to classes, as well as inviting local partners such as a representative from SSERC and a reptile enthusiast. Pupils also had the opportunity to take home kit to experiment at home.

Pupils shared the following about British Science Week, highlighting their excitement around STEM:

“I liked it as I got to try something new and once you’ve done something new it encourages to try other new things too.”

“Sometimes we don’t get to do science very often but we have done more science now after science week. I like doing the outdoor stuff and using Chromebooks in class.”

“I love choosing to play with magnets [during free play]. I play with them with my friends.

I like finding out what they can stick to.”

The events gave teachers the opportunity to learn from the delivery of the lessons to increase their confidence.

Jennifer McLean, RAiSE STEM Officer for Clackmannanshire, said:

“The school has made significant changes to its curriculum to ensure that STEM is fully embedded within their contexts. This will increase the number and quality of STEM experiences for the learners. It will ensure a consistent approach to delivering STEM across the school that is progressive and allows for personalisation and choice.”

The new model incorporates a range of areas including STEM, UNCRC, Learning for Sustainability, Global Goals and DYW, with learning opportunities which are connected to the local area and partners.

The new curriculum was launched in August 2022. Evaluation of the approach will be gathered and inform next steps. The STEM Officer has shared the experiences of Park Primary School with other local settings considering embedding STEM and IDL as drivers for a number of priorities.



Appendix 4

Science in Enhanced Provision Settings

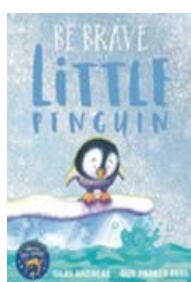
The RAISE Officer for Scottish Borders Council, Alison Heaton, has been working with the teachers and pupils with complex needs at the Leadervally Enhanced Provision@ Peebles to model how science and STEM can be made accessible. This was accomplished through the use of stories and devising simple engaging activities.

RAiSE (Raising Aspirations in Science Education) is a programme of Education Scotland, The Wood Foundation, Scottish Government, and participating local authorities which empowers primary practitioners with the skills, confidence, and networks to develop and deliver motivating and engaging STEM experiences.

The lessons focused on exploring how water changes from one state to another covering the CfE Experience and Outcome SCN 0-05a. Alison used 'Hey Water!' by Antoinette



Portis and 'Don't Be Afraid, Little Penguin'



by Giles Andreae and Guy Parker-Rees as a stimulus and facilitated activities to examine the properties of water in its different states. The learners engaged in various play, investigative, and sensory tasks to understand how ice forms,



melts, and properties of and water.

Activities included observing the speed of

ice melting by 'fishing' in warm and cold water, building an igloo for Pip-Pip the penguin, experiencing the reduced friction of ice by simulating Pip-Pip the penguin splashing in the ocean on a slide, and creating ice lollies with juice and raspberries for a refreshing snack. Alison also highlighted effective questioning which could be used during lessons as formative assessment such as 'How do you know the ice is melting?' 'Where has the ice gone?' and 'How do you make ice lollies?'

Staff noticed that their students were actively involved in their learning and remained focused. The tasks also helped encourage their vocabulary and exploratory skills.



Alison intends to continue her work within Scottish Borders Enhanced Provision settings into the second year of her secondment as a RAiSE officer to build confidence in the teaching of STEM and science within these schools.

"M was fully engaged with Alison's science lesson. He really enjoyed handling and tasting the ice as well as exploring the water once it had melted."

"All pupils stayed on task and learned something from both lessons."

"It was great to see our pupils engage with science."

"Great lessons for both staff and children."

"These lessons demonstrated that our pupils with complex needs can access science."

Appendix 5

East Renfrewshire's DigiSTEM Club 2024

Caroline Collins, Primary STEM Development Officer

In an effort to bridge the gender gap in engineering & technology and empower young girls to pursue careers in STEM fields, East Renfrewshire Council is pleased to announce the launch of a pioneering initiative: The DigiSTEM Club.

Aim & Rationale

Caroline Collins, Primary STEM Development Officer and Jonathan Hull, Principal Teacher of Equity (Digital Inclusion) for East Renfrewshire Council, designed a STEM project for female learners from two East Renfrewshire primary schools, supported by Digital Xtra funding.

The East Renfrewshire DigiSTEM Club was formed in January 2024. It focuses on engineering disciplines and computational thinking skills, with the intended aims of encouraging awareness in girls of future STEM pathways and an increase in the uptake of STEM subjects in secondary, particularly Computing Science and Design Technology.

The club takes place weekly in the East Renfrewshire DigiHub, targeting female learners from two local schools (St John's Primary & Carlibar Primary) during lunch times. Participants have been developing skills in coding, problem solving, construction and engineering & design using Lego Spike Essential resources.

Approach

The DigiSTEM Club aims to provide a supportive and inclusive environment where Primary 6 girls can explore the exciting world of coding, develop valuable technical skills, and cultivate their passion for technology. Through hands-on projects, interactive workshops and mentorship from experienced STEM professionals, participants have the opportunity to unleash their creativity, build confidence and become proficient in programming languages.

The Digital Xtra grant aims to "Inspire, Enable and Engage" young people in Scotland by providing access to innovative and digitally creative experiences regardless of their gender or background. The grant has allowed Caroline and Jonathan to encourage the DigiSTEM Club attendees to explore the world of computing science, engineering and technology with hands-on and interactive activities, sparking their interest through real-world applications of these skills. By presenting engineering, computing science and digital technologies as exciting career options, they hope to contribute to closing the skills gap in the STEM industry.

The development of Meta-Skills and Engineering Habits of Mind have allowed engineering and creativity to effectively link together and create opportunities to develop resourcefulness and collaboration skills. By collaborating on a problem-based project, learners have explored different engineering disciplines, created solutions and extended their knowledge and understanding, using critical thinking and sense-making skills to select the most appropriate strategy to solve a problem.

The Lego Essential STEM Curriculum units have encouraged attendees to become resilient, independent thinkers and allows them to bring their models to life with coding. The play-centred, student-facing approach encourages learner led progression. Now that the learners are more secure and confident in their coding skills, they will progress to using Sphero Bolt in term 4. They will learn how to design and develop algorithms to control various digital coding resources, using block coding techniques as a base for writing their code. They will learn how to apply these skills when tasked with a design challenge where they will use the resources they have become familiar with to fulfil an engineering challenge.

Appendix 5

East Renfrewshire's DigiSTEM Club 2024

Caroline Collins, Primary STEM Development Officer

Impact & Next Steps

The DigiSTEM Club aims to increase diversity and inclusion of female pupils learning digital technology activities and developing Engineering Habits of Mind in an area of high deprivation. Two STEM Ambassadors (a Data Scientist & a Software Engineer) supported the project earlier in term 3 and worked with the learners to further challenge them and develop skills in robotics. This partnership opportunity aimed to dispel negative stereotypes around females in the STEM industry. Pupils will continue to develop skills in coding and engineering, applying the knowledge they have gained along with acquiring new skills in term 4 through the use of Sphero Bolt which will be used to empower the learners to further explore their creativity, coding skills and inventiveness.

Caroline and Jonathan plan to offer practitioners

professional learning in the use of these digital devices and offer schools the opportunity to host their own workshops for their staff and pupils in the future, ensuring sustainability.

A Newly Qualified Teacher has shadowed Caroline & Jonathan's team teaching approach. She intends to share her learning by running an after-school project with Primary 4 learners using the ERC STEM Lending Library Lego Spike Essential kits. The Primary 6 learners will also support their peers at this club in term 4. Mrs Thomson (NQT) said, "The DigiSTEM Club has allowed the learners to develop a range of great skills, including digital literacy, problem solving and creativity. It has allowed me to develop as a teacher of STEM. As a result of the working with Caroline & Jonathan I am now confident enough to organise an extra-curricular club based on what I have learned."

Learner Comments



"The club is really fun. I get a chance to show my creativity and work in a team."



"Doing the engineering and coding to build the project is a challenge. I am also getting better at coding and building things."
"It is really fun and I like coding. I think have developed team working skills. I am getting better at engineering as well."

"I really like when we get a finished product and it works after we have coded it. I am getting the chance to develop my creativity as we are coding our build in a different way."

Appendix 6

Access the RAiSE library [STEM Fairs and other events book](#)

