STEM Nation Award

Application guidance
For community learning and
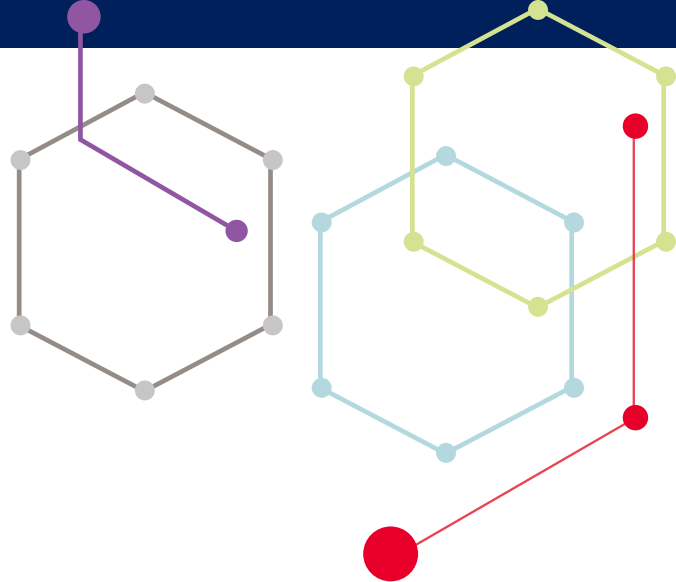development providers

The following terminology is used throughout this guidance:

- 'Practitioner' encompasses staff who are qualified and or registered to work with children, young people, adults and communities.

- The term 'learner' is used to refer to children, young people or adults. The CLD STEM Nation Award is available to those CLD providers working with these learners.

- The term 'provider' is used to refer to community learning and development organisations. This could be, for example, local authorities or voluntary sector organisations.

- 'Community learning and development' (CLD) refers to a coherent and distinctive set of practices, defined by clearly identified competences; it is delivered in diverse settings and sectors, by practitioners with a wide variety of job titles, working with individuals of all ages.

- 'Family learning' encourages family members to learn together as and within a family, with a focus on intergenerational learning. Family learning activities can also be specifically designed to enable parents and carers to learn how to support their children's learning.

- The term 'learning community' is used to refer to both structured and informal groups where collaboration and joint working takes place. This may include, for example, a group of voluntary sector organisations or an established partnership between a CLD provider and a local school.

- The term 'STEM partner' is used to refer to industry partners including employers, further and higher education institutions, academic or professional organisations, third sector organisations and also includes parents or carers who are part of the STEM workforce.

- The term 'STEM partnership' is used to refer to planned and sustained engagement between providers and their STEM partner(s). This is unlikely to include one-off site visits, workshops or competitions.

Contents

An overview of STEM in Scotland

In an increasingly fast-paced and technologically-driven world, Scotland's economic and social development is being driven by cutting-edge advancements in the fields of science, technology, engineering and mathematics (STEM). All sectors of education, training and lifelong learning have a key role to play in equipping Scotland's citizens with the specialised STEM skills and capabilities that will allow them to access these exciting opportunities.

The **STEM Education and Training Strategy for Scotland** sets out a vision which strives to improve STEM engagement across our society to boost our economy and enable all people in Scotland to thrive and adapt to our changing world.

The strategy aims to:
- build the capacity of the education and training system to deliver **excellent** STEM learning so that employers have access to the workforce they need;
- close **equity** gaps in participation and attainment in STEM so that everyone has the opportunity to fulfil their potential and contribute to Scotland's economic prosperity;
- **inspire** young people and adults to study STEM and to continue their learning to obtain more specialist skills; and
- **connect** the STEM education and training offer with labour market needs – both now and in the future – to support employability, improved productivity and inclusive economic growth.

Education Scotland has played a central role in delivering many of the STEM Strategy actions. One of the key actions for our organisation has been to develop a STEM awards programme to encourage and support STEM activity within and across early learning and childcare settings, schools and informal learning settings. This has been an exciting development for Education Scotland and we are pleased to offer community learning and development providers the opportunity to gain recognition for their commitment and achievements in relation to STEM. The awards programme will provide opportunities for CLD providers to participate regardless of whether they are just starting out with STEM or already demonstrate aspects of highly effective STEM practice.

STEM Nation Award programme

What is the purpose of the award? Why should we apply?

The STEM Nation Award programme celebrates, promotes and builds effective practice in STEM education within and across sectors.

STEM Nation Award

All community learning and development providers are eligible to apply for the STEM Nation Award.

The award consists of five elements that you can work towards over time. Providers that achieve all five elements within a three-year period will be eligible for the full STEM Nation Award.

The five STEM Nation Award elements are:
- Leadership in STEM
- STEM learning in the community
- Employability and STEM partnership working
- STEM curriculum and learner progression routes
- Equity and equality in STEM

Excellence

Equity

Inspiration

Connection

Applying for award elements

What is the process?

Providers are advised to complete a self-evaluation of current STEM practice prior to applying for the STEM Nation Award.

There are three simple steps involved in the application process:

1. Registration
You should visit **STEMnation.scot** and complete the online registration form.

2. Gather and submit evidence
After registering for the award, you will have a three-year time period to gather and submit evidence for all five elements of the STEM Nation Award. You should use the template and guidance available on the **STEMnation. scot** website to help prepare your submission.

3. Action plan and validation
After submitting evidence for all five elements, you will be invited to share details of your STEM action plan with the validation team. Your action plan should clearly explain how you intend to share your STEM journey and successes with others. Further guidance is provided later in this document.

Following successful validation, your STEM Nation Award will be valid for three years. Any provider looking to renew their award after this period should prepare a revised STEM action plan and submit evidence demonstrating STEM practice which has been maintained, improved and introduced following the original application.

Self-evaluate and register online

Gather evidence

Submit evidence

Action plan and validation
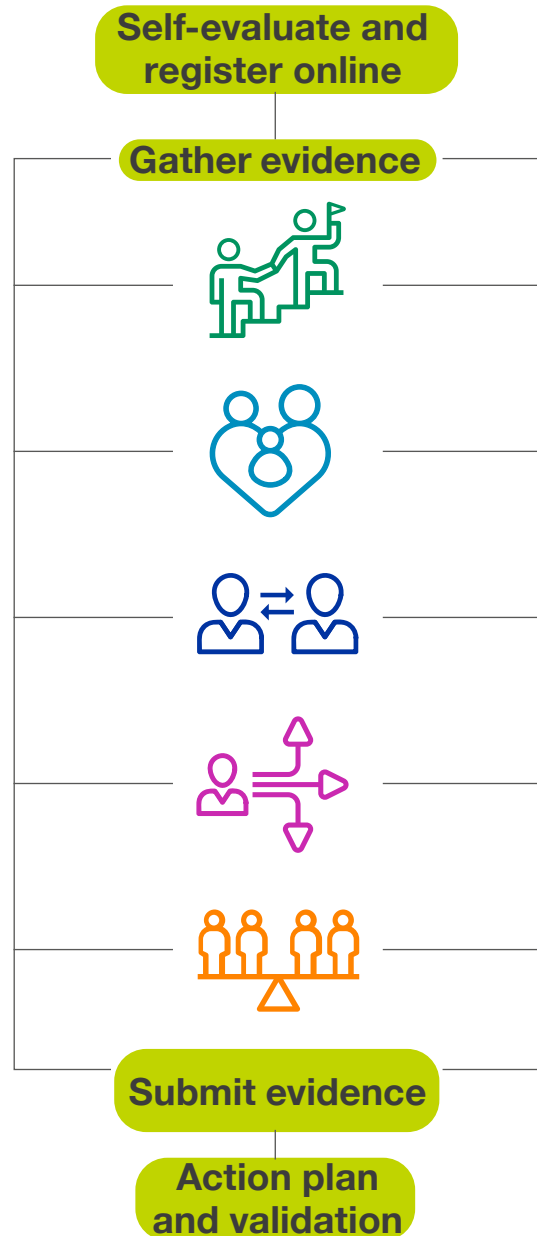
Your regional STEM Education Officer can offer guidance and support with your application. You may wish to contact them via email: **STEM@educationscotland.gov.scot**
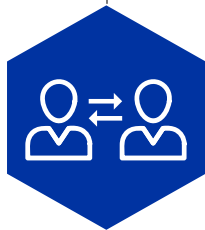
The five elements

Leadership in STEM

This element celebrates effective leadership at all levels including children, young people and adult learners leading STEM learning.

STEM learning in the community

This element recognises commitment to community learning and development practice which is helping to build STEM capital within local communities.

Employability and STEM partnership working

This element celebrates sustained collaboration between providers and their STEM partner(s) to develop learners' STEM and employability skills.
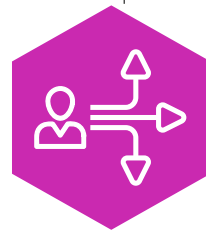
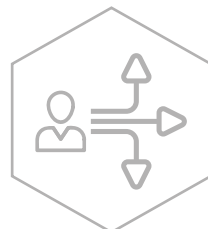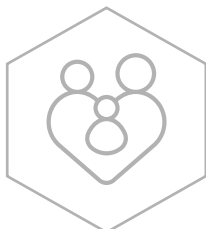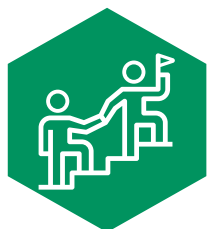**STEM curriculum and learner progression routes**

This element recognises the work of providers in developing an inspiring STEM curriculum and associated learner progression routes.

Equity and equality in STEM

This element celebrates the work providers are undertaking to address the issues of equity and equality in STEM.

STEM Nation Award

Leadership in STEM

Who is this for?
The **Leadership in STEM** element celebrates effective leadership at all levels. Organisation leaders, managers, practitioners and learners in providers applying for this element will all be contributing to the planning for and delivery of **excellence** and **inspiration** in STEM learning.

What does this look like?
- Our shared vision and rationale for STEM was developed in collaboration with a range of stakeholders.
- Where appropriate, a core team of staff provide effective planning, coordination and leadership for STEM.
- We make time for professional dialogue, collegiate learning and self-evaluation to support and inform improvements in STEM.
- Ongoing collaborative and collegiate working helps to build our STEM practice and develop our pedagogy.
- Practitioners demonstrate leadership in STEM learning and are helping to motivate, inspire and support others. We use data and evidence of learners' progress in STEM to help us meet the needs of our learners and promote equity and equality.
- Learners are empowered to take on STEM leadership roles and, in line with the UNCRC, have a say in decisions that affect them, including their STEM learning.

Links to key documents:
- **How good is our community learning and development?**
- **National Improvement Hub – How good is our CLD (HGIOCLD)**

- **Education Scotland: Professional learning and leadership**
- **Young STEM Leader programme**
- **STEM Ambassadors programme**

The online directory at **STEMnation.scot** provides further links to organisations and resources that offer professional learning opportunities and support in this area.
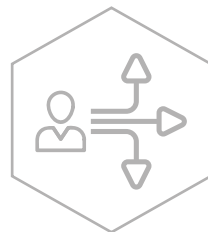
What evidence is required?
You should use the STEM Nation Award evidence template for CLD providers to collate and submit evidence for at least **five out of the six aspects** of this element.

You should consider these three questions as part of the self-evaluation and evidence gathering process:
- What are our current strengths in this area?
- What evidence do we have to support this?
- What are our future development targets?

You can use text, photographs, web links and video links to evidence your strengths. You may also use the notes sections on the evidence template to provide a narrative or further explanation of any visual evidence where required.

STEM learning in the community

Who is this for?

The **STEM learning in the community** element recognises practice and commitment to community learning and development which is helping to build STEM capital. Providers applying for this element will be using STEM to make **connections** with their local community. Providers may choose to focus on adult learning, family learning, youth work or a combination of these depending on the demographics of their learners.

What does this look like?

Adult learning

- Our STEM adult learning programmes are being developed in partnership with learners to build STEM capital. An increasing number of adult learners are becoming involved in the development and delivery of STEM learning programmes for other members of the community.
- Our adult learners are actively and meaningfully involved in STEM community activities such as citizen science projects and science festival activities.
- Our practitioners are aware of potential barriers to participation and work with adult learners to reduce these. Our learners are offered opportunities to gain accreditation for aspects of their STEM learning.
- We use social media and other methods of communication to promote and share details of our STEM-based community learning programmes in order to engage adult learners and the wider community.
- Adult learners working with our provider are gaining an understanding of the importance of STEM skills, employability and progression routes.
- An increasing number of adult learners are developing skills in leadership, problem solving and critical thinking that will enable them to make informed decisions in their everyday lives.

Family learning

- Our STEM family learning programmes are being developed in partnership with learners and their families to build STEM capital.
- Families are taking action to make a difference to where they live through community-based STEM and Learning for Sustainability projects.
- Our practitioners are aware of potential barriers to participation and work with families to reduce these. Parents and families are offered opportunities to gain accreditation for aspects of their STEM learning.
- STEM features regularly in our provider's communications with parents, families, schools and the wider community through social media and the use of other digital technologies.
- Parents and families are gaining an understanding of the importance of STEM skills, employability skills and progression routes.
- We seek opportunities to integrate intergenerational learning into our STEM programmes wherever possible. This is allowing us to engage wider audiences in STEM learning and is helping us to address unconscious bias relating to equity and equality in STEM.
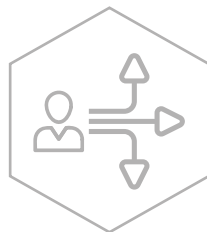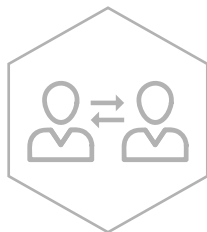
STEM learning in the community

Youth work

- Our STEM youth work activities are being developed in partnership with learners to build STEM capital.
- We work with our learners, parents and our local school(s) to highlight the links between informal STEM learning and formal in-school education. Our learners are also encouraged to participate in wider STEM community events such as citizen science projects and science festival activities.
- Our practitioners are aware of potential barriers to participation and work with young people to reduce these. We work independently and or in collaboration with our local school(s) to provide our learners with opportunities to gain accreditation for their STEM learning.
- STEM features regularly in our provider's communications with youth group members, families and our partners through social media and the use of other digital technologies.
- Young people and their families are gaining an understanding of the importance of STEM skills for employability and lifelong learning.
- Our young people are actively and meaningfully involved in STEM-based elements of youth work programmes. As a result, learners are developing STEM and creativity skills that can be applied in a variety of contexts.

Links to key documents and resources:

- **How good is our community learning and development?**
- **National Improvement Hub – How good is our CLD (HGIOCLD)**

- **Learning together: national action plan**
- **Parentzone Scotland**
- **Education Scotland: Community learning and development**
- **What is family learning?**
- **Family Learning Framework**
- **Engaging parents and families – A toolkit for practitioners**

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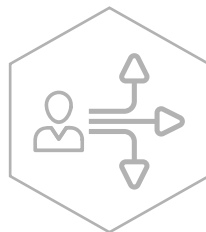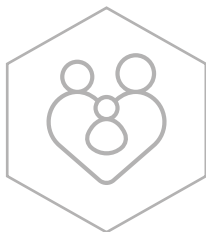
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- What are our future development targets?

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Employability and STEM partnership working

Who is this for?
The **Employability and STEM partnership working** element celebrates sustained collaboration between providers and their STEM partner(s). Providers applying for this element will have developed structured and sustainable partnerships with employers and or STEM partners and stakeholders. These partnerships will be helping to **inspire** learners and will be making **connections** to the world of work.

What does this look like?
- Our partnerships with employers, local college(s) and other STEM stakeholders enable us to deliver a wide range of STEM activities.
- Our partnership work supports professional learning and helps to build practitioner's leadership capacity and understanding of STEM workplaces, training and employability opportunities.
- Employability skills, which may include those outlined in the Career Education Standard (3 – 18), are being developed through STEM contexts.
- We work with our partners to promote positive perceptions of STEM and Learning for Sustainability that challenge stereotypes and preconceptions, inform the development of learning pathways and inspire learners.
- Our practitioners are aware of key STEM industries, including green jobs, and help learners develop the skills needed to support the local economy.
- We support our learners to make effective use of skills-profiling tools to enhance their employment prospects. By highlighting meta-skills, STEM pathways and green jobs we are supporting Scotland's transition to a Net Zero Nation.

Links to key documents:
- **How good is our community learning and development?**
- **National Improvement Hub – How good is our CLD (HGIOCLD)**

- **Building the Curriculum 4: Skills for learning, life and work**
- **Education Scotland: Developing the Young Workforce (DYW)**
- **Education-Employer Partnerships: Key documents and tools**
- **Work Placements Standard**
- **Career Education Standard (3-18)**
- **My World of Work**
- **STEM Ambassadors Network**

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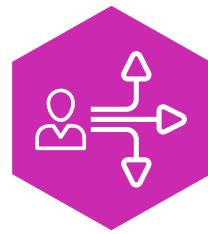
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STEM curriculum and learner progression routes

Who is this for?
The **STEM curriculum and learner progression routes** element recognises the work of providers in developing an **inspiring** STEM curriculum and associated learner progression routes. Providers applying for this element will have considered the needs of all learners when designing their STEM learner progression routes. The STEM curriculum will be delivered through naturally occurring contexts of learning and will focus on the development of STEM skills.

What does this look like?
- STEM is helping us to deliver literacy, numeracy and digital learning through engaging contexts. STEM learning strongly supports Learning for Sustainability, the United Nations Sustainable Development Goals including learning about the climate emergency and threats to biodiversity.
- We are using creative approaches in STEM to promote curiosity, open-mindedness, imagination, problem-solving and diversity.
- Collaboration with learning community colleagues is helping us to improve continuity and progression in STEM learning.
- We are helping learners develop a belief in their own abilities. The support we provide to learners helps them make informed choices about STEM learning and progression routes.
- We encourage all learners to develop a wide range of skills and take account of labour market needs when planning the curriculum to prepare learners for a variety of STEM careers, including green jobs.
- All learners across our provider are given opportunities for personal achievement in STEM learning.

Links to key documents:
- **How good is our community learning and development?**
- **National Improvement Hub – How good is our CLD (HGIOCLD)**

- **Building the Curriculum 3: A framework for learning and teaching**
- **Scotland's Curriculum**
- **Planning for and evaluating creativity**
- **Learning for Sustainability resources**
- **Outdoor learning resources**
- **Digital Learning and Teaching Strategy**

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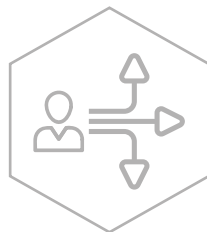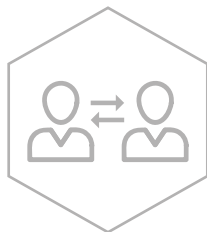
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Equity and equality in STEM

Who is this for?

The **Equity and equality in STEM** element celebrates the work providers are undertaking to address the issues of equity and equality in STEM. Providers applying for this element will have placed **equity** and inclusion at the heart of their STEM curriculum.

What does this look like?

- We are taking steps to improve gender balance, equality of opportunity, equity, diversity and inclusion through STEM.
- Sustained action challenges gender stereotypes and addresses practitioners' own unconscious bias. Our actions and plans are informed by ongoing professional learning relating to equity and equality.
- All learners across our provider are given opportunities for personal achievement in STEM.
- Preconceptions about career and learning pathways are being challenged. We actively seek opportunities to celebrate diversity in the STEM workforce.
- Our achievement tracking processes help us to plan interventions to ensure progress and effective skills development, particularly for learners who face additional barriers.
- STEM learning has a positive impact on attainment and achievement in literacy, numeracy, health and wellbeing and across STEM curricular areas.

Links to key documents:

- **How good is our community learning and development?**
- **National Improvement Hub – How good is our CLD (HGIOCLD)**

- **Education Scotland: Improving gender balance and equalities 3-18**
- **Gender equal play in early learning and childcare**

The online directory at **STEMnation.scot** provides further links to organisations and resources that offer professional learning opportunities and support in this area.

What evidence is required?

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- What are our future development targets?

You can use text, photographs, web links and video links to evidence your strengths. You may also use the notes sections on the evidence template to provide a narrative or further explanation of any visual evidence where required.

Action plan and validation

What happens next?

The STEM Nation Award programme has been designed to help CLD providers improve their STEM practice. It also seeks to build the capacity of all education organisations across Scotland to deliver excellent STEM learning experiences for young people, adults, families and communities. The STEM Nation Award application process involves providers sharing their element evidence and STEM action plan with the validation team.

The **appendix** includes an action plan template that you may wish to use. The template encourages you to outline the strengths of your provider and to identify next steps to support continuous improvement. It also prompts you to explain how you will share your learning and successes with others in your learning community, authority and or region. The task breakdown asks you to consider which staff and stakeholders are responsible for, accountable for, consulted on and informed of each action.

Although this guidance includes an action plan template there is no expectation that all providers will use this tool. You may already have an existing action plan for a STEM working group or a STEM section on your improvement plan. We encourage providers with existing STEM action plans to submit these rather than completing additional paperwork. We do, however, ask that your plan includes explicit details of how you intend to share your STEM practice. This may feature as part of the plan itself or as a supplementary document.

The final stage of the application process is validation. We will contact you once your element evidence has been reviewed to invite you to participate in the next validation window. Validation will be completed on a regional basis and therefore local arrangements may differ slightly. The most up-to-date information for validation in your region will always be available on **STEMnation.scot**.

The STEM Nation Award is valid for a period of three years. Providers looking to renew their award status at the end of this period will be eligible for fast-track approval. You will be asked to submit a revised STEM action plan and a brief update of element evidence. Your submission should demonstrate STEM practice which has been maintained, improved and introduced following your original application. You may wish to use the action plan template in the **appendix**. Further guidance on the element evidence required for fast-track approval can be found on **STEMnation.scot**.

Are you interested in becoming a validator?
We are always looking for people to join our validation team in a number of different roles. You may come from an education or STEM industry background. Validators have the opportunity to see some of the most innovative and exciting STEM practice across Scotland. If you are interested, please contact us at this address:
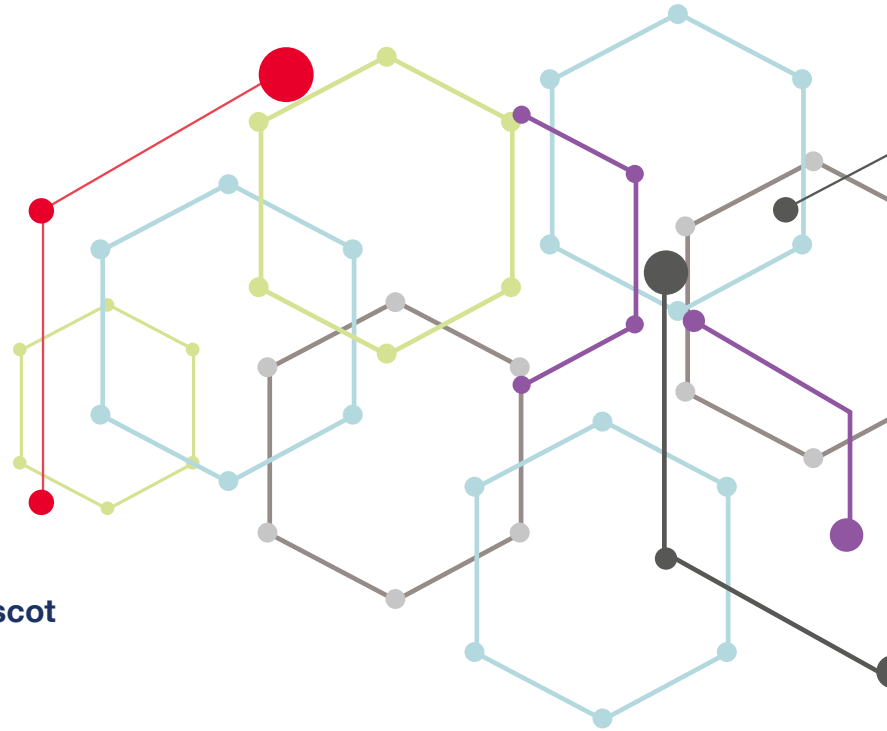**STEM@educationscotland.gov.scot**

Appendix: STEM action plan template

Name of provider	

Staff involved	Key stakeholders

Our current strengths

Start date	Progress review date	Completion date

Successful outcomes What impact do we want to achieve?	**Evidence and evaluation** How will we gather evidence of impact?
Challenges What might hinder success?	**Solutions** How can we overcome these challenges?

Resources and staff development needs
What will we need to support this?

Sharing learning and supporting others
How will we share our learning with others in our learning community / authority / region / country?

Appendix: STEM action plan template

RACI: Who is **R**esponsible, **A**ccountable, **C**onsulted and **I**nformed?		
Breakdown of tasks	**Staff and stakeholders**	**By when?**

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Version control

Document version	Date of publication	Description of changes
1.0	May 2021	Original version
2.0	May 2022	General updates
3.0	February 2023	General updates