STEM self-evaluation and improvement framework

Version for practitioners

http://bit.ly/STEMSEIframework

Starting out		Features of highly-effective practice
QI 1.1 Self-evaluation for self-improvement. We look inwards with staff, learners and partners to self-evaluate our STEM approaches. We are identifying initial strengths and areas for improvement. We have started to gather evidence about the quality of learning and teaching in STEM and progress of learners. We are engaging with the *Career Education Standard* to reflect on current practice. We are beginning to look outwards to learn from others. We use our self-evaluation to look forward and plan our next steps.	1 2 3 4 5 6 Our next steps:	A range of effective approaches are being used to involve staff, learners and partners in our STEM self-evaluation. Learners are put at the centre of this process and have a strong voice. We have a shared understanding of expectations in STEM and of our strengths and our improvement needs. Robust evidence is being gathered to track progress in STEM for all learners. Engagement with a wide range of advice and research helps us reflect on current practice. We actively look outwards to seek good practice in STEM. Our self-evaluation is leading to continuous improvement.
QI 1.2 Leadership of learning. Collegiate and collaborative working to support STEM improvement takes place. Identified staff lead STEM developments. We are reaching out to staff, learners, parents, STEM partners and employers to learn with and from each other. Staff strengths and development needs in STEM have been identified and collegiate working and professional learning opportunities are being planned. Learners are starting to take responsibility for their STEM learning.	1 2 3 4 5 6 Our next steps:	A culture of professional learning and collegiate working exists across our learning community. There is strong leadership of learning by staff. Constructive relationships, internally and with STEM partners, help us to learn with and from each other. Engagement with STEM and DYW research and policy is improving learning. Staff share resources, subject expertise and pedagogies across sectors to build their mutual capacity. STEM is linked to digital skills and learning for sustainability. Learners take on leadership roles in STEM, including as Youth STEM Ambassadors.
QI 1.3 Leadership of change. Through consultation we are developing our understanding of why STEM is important for our learners, their families and our community. Senior leaders have set out the strategic direction for STEM. Leadership in STEM is not overly-dependent on one person. Staff have confidence in the process of change and have contributed to the plan for improvement. We are reflecting on our practice to ensure changes lead to improvement, social justice and equity for learners.	1 2 3 4 5 6 Our next steps:	Our shared vision for STEM reflects the uniqueness of our setting and takes account of labour market information. Strategic leaders effectively guide and manage the direction and pace of change and staff demonstrate collective responsibility for STEM. STEM supports DYW, Scottish Attainment Challenge and National Improvement Framework priorities. Time for professional dialogue, collegiate learning and self-evaluation is protected. We monitor and evaluate impact of changes on outcomes for all learners.
QI 1.5 Management of resources to promote equity. We audit available STEM resources, including digital technologies, to see what can be used to enhance learning. This includes a focus on learning resources which tackle stereotypes and promote equity and equality through positive STEM role models. We are exploring ways to use our indoor and outdoor spaces creatively to support STEM.	1 2 3 4 5 6 Our next steps:	Best use of available resources, including digital technologies, enables us to create motivating, hands-on STEM learning experiences. Indoor and outdoor learning environments fully support STEM learning. Resources challenge learners at all levels and support independent learning. Stakeholders are enabling us to source additional resources. Resources are allocated to those pursuing different STEM pathways in a way that ensures equality and equity.
QI 2.2 Curriculum. We engage with STEM challenges, themed weeks and events to build our confidence and understanding of STEM and to help us develop our curriculum. We develop the rationale and design of our STEM curriculum collegiately. We are learning to weave sciences, technologies, engineering, mathematics and digital skills together. We are trying new pedagogies to develop STEM skills for learning, life and work through play and active learning.	1 2 3 4 5 6 Our next steps:	We have a strong rationale and shared vision for STEM. STEM is effectively embedded across the four contexts of learning. Collegiate working across STEM staff, colleges and employers, ensures coherent curriculum planning, progression and learner pathways. Our STEM curriculum is creative and motivating and aligned to learners' aspirations and labour market needs. Curriculum developments are planned with stakeholders including our local college and employers. Children develop play and practice skills in STEM.

Starting out		Features of highly-effective practice
QI 2.3 Learning, teaching and assessment. Our STEM pedagogy is developing and we are exploring how different environments and approaches can be used to motivate and engage learners. Staff share successes and practice to enhance learning and teaching and ensure a more consistent approach. We are starting to engage with the *Benchmarks for Assessment* and are reviewing the way we gather and moderate evidence to monitor and track learners' progress in STEM.	1 2 3 4 5 6 Our next steps:	STEM pedagogy promotes inquiry-based, experiential and challenging learning that reflects the needs and interests of learners. Creativity, curiosity, investigation, invention, discovery and problem solving are enhanced through STEM. A range of evidence is gathered to assess progress and to provide high-quality feedback to learners. The *Benchmarks for Assessment* are being used to support moderation of STEM across all ages and stages. We monitor and track learners' progress across STEM using robust evidence.
QI 2.5 Family learning. Families are being consulted to better understand their needs and aspirations in relation to STEM. We are reaching out to parents to involve them in our STEM planning, events and activities. Colleagues from our learning community, including early learning and childcare, are sharing approaches to parental and family engagement.	1 2 3 4 5 6 Our next steps:	Family and parental engagement is integral to our STEM activities, events and communications. This is helping to build STEM capital. The diversity of the STEM workforce and the value of different STEM pathways are promoted to families, especially to those facing barriers to STEM employment (SIMD/ deprivation, ethnicity, disability, gender and care-experienced learners).
QI 2.6 Transitions. Consultation and collaboration with learning community colleagues and partners is helping to improve transitions, information-sharing and pathways in STEM. Visits to other settings in our learning community, including our college and early learning and childcare settings, help build our understanding of learners' journeys in STEM and how progression in learning across transitions can be improved.	1 2 3 4 5 6 Our next steps:	Learners make progress through well-planned transitions and are supported to make informed choices about STEM careers and pathways including apprenticeships. Tailored programmes help those needing additional support. There is progression in STEM learning and skills development across all curriculum areas at all stages of learning. Tracking, monitoring & profiling helps learners identify their strengths, skills and next steps in learning.
QI 2.7 Partnerships. We are exploring opportunities to engage in partnership working with parents/carers, our regional college, STEM Ambassadors and employers to enhance STEM learning and teaching and promote STEM careers. An understanding of the different contexts in which we work and the purpose of partnership working is developing.	1 2 3 4 5 6 Our next steps:	Sustainable relationships have been built with a wide range of STEM partners and employers. Partnerships are based on our shared values, vision and aims and the *Work Placement Standard* and *Guidance on School/Employer Partnerships*. We have a clear strategy for growing new and existing partnerships and jointly plan and evaluate work to enhance our STEM offer.
QI 3.1 Ensuring wellbeing, equality and inclusion. STEM is beginning to enhance wellbeing and outcomes for learners. Opportunities to promote equality, diversity, inclusion and equity through STEM are being explored. Our understanding of gender equality and stereotyping in STEM is developing. STEM learning materials, books and displays are being reviewed to ensure they promote diversity and tackle stereotypes.	1 2 3 4 5 6 Our next steps:	All learners feel safe, healthy, achieving, nurtured, active, respected, responsible and included in STEM activities. STEM builds positive relationships across our learning community. STEM activities focus strongly on equality, diversity, inclusion and equity. We monitor and track progress of learners (SIMD, ethnicity, disability, gender and care-experienced learners). Sustained action addresses unconscious bias and promotes gender balance.
QI 3.2 Raising attainment & achievement/*Securing children's progress.* Learners are being provided with opportunities for personal achievement in STEM through STEM clubs, challenges, competitions and other experiences. Approaches to raising attainment and achievement, including in literacy and numeracy, through STEM are being trialled.	1 2 3 4 5 6 Our next steps:	We are raising attainment in literacy, numeracy and STEM areas, particularly for the most disadvantaged learners. We develop STEM skills and celebrate and accredit achievements. STEM-related *Benchmarks for Assessment* support moderation and inform professional judgement. Robust tracking and monitoring informs interventions. STEM is increasing positive destinations.
QI 3.3 Creativity and employability. STEM careers fairs and *My World of Work* website are raising the profile of STEM skills and careers. Creativity, entrepreneurship and innovation are being introduced to STEM learning. The expertise of young people themselves is helping to build our digital skills. We are engaging with the *Careers Education Standard*.	1 2 3 4 5 6 Our next steps:	Creativity, entrepreneurship, innovation & digital skills are embedded in STEM learning. Employers and partners help us develop STEM skills linked to the world of work. Employability skills help learners make informed choices about learning pathways. The *Career Education Standard*. *Work*