



THE YOUNG STEM LEADER PROGRAMME

Inspiring and developing young people through STEM

Annual Report

Academic year 2019/20

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YOUNGSTEM
Leader

led by



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In the last 12 months, there has been significant progress in the development of the Young STEM Leader Programme. The level of enthusiasm for the programme across all of Scotland is very encouraging, encompassing both formal and non-formal education and community settings. In preparation for full national launch in Summer 2020, we are proud to be facilitating the development of hundreds of peer STEM role models who are engaging their peers with STEM subjects and careers.

Alastair MacGregor

CEO, SSERC



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The Young STEM Leader Programme offers a unique opportunity for young people to discover, create, inspire and lead in STEM, as well as develop a range of highly desirable and transferable personal skills.

I have no doubt that this programme will dramatically enhance engagement and widen access to STEM learning for many children in Scotland, raising their attainment and achievement whilst closing the attainment gap in the process.

Graeme Rough

Project Manager, Young STEM Leader Programme



1. Introduction

This annual report is the first to be prepared by the Young STEM Leader Programme Project Manager, who took up his post in early 2019. It details the key project deliverables to date and looks ahead to the targets for the next academic year. As with any aspect of the programme, our Project Manager and his team are delighted to give further information on the programme or any of the points contained within this report.

2. Overview of the Young STEM Leader Programme (YSLP)



Young people in Scotland have the chance to inspire, lead and mentor their peers through the creation and delivery of STEM activities, events and interactions within their schools, communities and youth groups.

The programme aims to inspire more young people to develop an interest in STEM and pursue the study of STEM subjects and relevant future pathways. In its *Strategy for STEM Education and Training (2017)*, the Scottish Government committed to establish 'a new Young STEM Leader Programme to stimulate and strengthen the development of peer mentoring and inspiration in STEM for young people by young people.'

As well as enabling Young STEM Leaders (YSLs) to develop important leadership, communication and employability skills, working towards a YSLP Award will also motivate young people to progress their STEM studies and perhaps eventually embark on a career in STEM.

Above all else, this programme aims to promote STEM curiosity in young people and to encourage them to learn about the world around them in a fun and engaging way.



2. Overview of the Young STEM Leader Programme (YSLP) (continued)

The Scottish Government-funded YSLP is led by SSERC in partnership with:

- the four Scottish Science Centres – ongoing support in venue hosting, recommendations for external organisations to support YSLP
- three Scottish STEM Ambassador Hubs – ongoing support linking YSLP to STEM Ambassador Programme, providing feedback on developed content
- Science Festivals – opportunities to link YSLP to planned events, providing feedback on developed content
- Young Scot – formed co-design group (young volunteers) and supported formation of Youth Steering group, offering Young Scot rewards/ incentives to YSLs who complete the programme
- YouthLink Scotland, enhanced support to offer YSLP in the community and youth work sector, venue hosting and ongoing partnership working, linking YSLP to digital youth work community
- Science Skills Academy – supporting the awareness raising and implementation of YSLP in Scottish Highlands and Islands.
- Education Scotland – enhanced support in all areas of YSLP, providing particular support in quality assurance and review of all developed framework and supporting documentation
- Scottish Mentoring Network – early project support providing mentoring award opportunity, knowledge and expertise to YSLP Project Team

3. Project Team



The Young STEM Leader Project Team was formed in early 2019 with the major development work launching in March 2019 following the appointment of the Project Manager. Initially, programme frameworks were developed based on extensive preparatory work completed by SSERC CEO, wider staff and external consultants. The team also includes Project Officer Jamie Menzies. Roles within the team are:

Project Manager - a member of the SSERC Wider STEM Engagement Team, leading a small team working with the partner organisations to develop and deliver a Young STEM Leader Programme.

Project Officer - part of a small project team working with the partner organisations to support the development and delivery of the Young STEM Leader Programme

4. Initial research



Before agreeing the structure, style and content for YSLP, extensive research was carried out into existing awards and qualifications that are on offer to young people in Scotland and the UK. A sample of the awards researched:

- All STEM related N4, N5 and H National Qualifications, SQA
- Community Achievement Award, Kelvin College
- CREST Awards, British Science Association
- CfE Benchmarks (all levels and curriculum areas), Education Scotland
- Duke of Edinburgh Award
- Duke of York iDEA Award
- Go4Set and Engineering Education Scheme, Engineering Development Trust
- Hi 5, Dynamic Youth and Youth Achievement awards, Youth Scotland
- Industrial Cadets Award
- John Muir Award, John Muir Trust
- Many Wider Achievement and National Progression Awards, SQA
- Personal Development Award, SQA
- Prince's Trust Achieve Programme
- Queen's Guide Award, Girlguiding Scotland
- Queens Badge, Boys' Brigade
- Saltire Awards
- Sports Leadership Qualifications (SLQ)
- Young Scot Awards
- YPI Scotland

On completion of our research, it became clear that the concept of a Young STEM Leader Programme (Strategy for STEM Education and Training, 2017) offered the opportunity to create a new and unique programme.

5. Programme versions, levels, content and associated awards



After wide-ranging research, exploration and consultation with focus groups made up of young people, educators and youth workers, the Project Team formed the core structure of the programme: the levels, progression pathways within the programme and the format for delivery models which would be offered to centres. Later, the core values and themes for the programme across all levels, as well as the specific focuses for each level were also agreed.

The YSLP is offered in two versions:

Non-formal version, digitally badged or certificated

Formal version, SCQF credit rated by SQA

The non-formal version of the programme is offered at CfE Second, Third and Fourth Levels (YSL2, YSL3 and YSL4) and is underpinned by a framework that identifies the skills, knowledge and behaviours expected of a YSL at each curricular level. The non-formal version and its levels allows centres to offer the programme to YSLs who are predominantly but not exclusively of upper primary age. This 'light touch' version allows young people to complete YSLP without the centre having to engage in the increased level of verification that formal SCQF awards or qualifications require. It is anticipated that the majority of YSLP delivering centres for the non-formal levels will be primary schools or youth/community groups who work with younger children.

The formal version of the programme is offered at SCQF Levels 4, 5 and 6 (YSL4, YSL5 and YSL6), credit rated by SQA and underpinned by learning outcomes and performance criteria for each level. SCQF credit points and Insight data are included within the formal version of the programme. The formal version and its levels allow centres to offer the programme to YSLs who are predominantly but not exclusively of upper secondary age. The levels in the formal version allow young people to gain a formal award to enhance the qualifications and awards they may already hold or are working towards. As with any formal award, an additional layer of verification is required, however, the Project Team have simplified this process and offer full support throughout.

5. Programme versions, levels, content and associated awards (continued)



Across all levels, gaining a YSLP Award requires young people to plan and deliver STEM activities, events and interactions in their school, community, or youth group, acting as positive role models in the process. In addition to these core values, each level within each version has its own specific focus:

Programme version	Programme level	Specific content
Non-formal	YSL2	Leadership skills, qualities and behaviours; challenging stereotypes, misconceptions and outdated views in STEM
Non-formal	YSL3	Opportunities, pathways and futures in STEM and how to access these; the YSL's own potential in STEM
Non-formal	YSL4	The impact of STEM and its ability to solve problems; Scotland's role in STEM; teamwork, collaboration and sharing skills
Formal	YSL4	The impact of STEM and its ability to solve problems; Scotland's role in STEM; teamwork, collaboration and sharing skills
Formal	YSL5	Opportunities, pathways and futures in STEM and how to access these; the YSL's own potential in STEM, opportunities in all settings such as FE, HE and the apprenticeship family
Formal	YSL6	Leadership skills, qualities and behaviours; challenging stereotypes, misconceptions and outdated views in STEM; health and safety; safeguarding



6. Key deliverables in 2019/20

Directed by the work plan, original bid document and other project specifications, the deliverables listed below have been met since the project started in March 2020.

Programme framework deliverables

In reference to point 4 above, all six programme levels have been developed, subject to rigorous quality assurance and consultation activity involving a vast range of young people and practitioners (see points 6 and 7). Core documents which have been produced are:

- Programme Support Notes for each level, six separate documents which offer support and guidance to those delivering the programme
- Activity Pack – non formal, a single document providing activities and resource signposting to allow Tutor Assessors to train/prepare YSLs for their leadership journey
- Activity Pack – formal, two documents for YSL5 and YSL6 which provide activities and resource signposting to allow Tutor Assessors to train/prepare YSLs for their leadership journey
- Handbook, the core, over-arching document that details the entire programme to those interested in, or taking part in, the YSLP
- Young STEM Leader Log, six separate documents which allow YSLs to evidence their journey through the programme

Wider programme deliverables

- Initial research into existing programmes and award schemes in STEM or otherwise
- The design and development of a six-level programme and framework, including over-arching content for all levels and specific content per level
- The production of documentation including Support Notes, Logs and Activity Packs per programme level, with a supporting Handbook for Tutor Assessors
- Formation of a brand, logo, visual style and supporting guidelines for the programme

5. Key deliverables in 2019/20 (continued)



Wider programme deliverables (continued)

- Social media campaigns to raise programme awareness and build base of programme participants and advocates*
- Plan and launch programme pilot (YSL2 and YSL6) ensuring geographical balance across Scotland
- SCQF credit rating of YSL6 by SQA
- Development and delivery of programme information sessions to inform centres of the programme and the opportunities it offers**
- Development and delivery of training programme for Tutor Assessors to deliver the programme in their centres
- The creation of a digital certification process for Young STEM Leaders, trained Tutor Assessors and YSLP Delivering Centres
- Production of Quality Assurance, Verification and Certification policies to ensure credible certification and robust delivery of the programme by centres
- Website build to support pilot year delivery
- Production of case study materials to inspire and support new programme uptake nationally***
- Appointment of evaluation team (University of Stirling, Dr Alison Hennessey) to review pilot phase and subsequent year of programme delivery****
- Appointment of web design consultants to create online digital platform for all participants to access, evidence and deliver the programme
- Attendance at a range of high profile or bespoke education events in Scotland to share information on YSLP – STEM Holyrood, Scottish Learning Festival, STEM Ambassador conferences, etc.
- A governance structure established where the Steering Group (partner representatives) and SSERC Board have project overview and are consulted on an ongoing basis – see section 9

* Our YSLP Twitter page has approximately 1000 followers to date, tweets on our TA training programme gaining 4000 impressions, 200 engagements, @YoungSTEMLeader

** See YSLP Coverage and Engagement Report 2020

*** Case study materials detail YSLP implementation in 3 High School and 2 Primary School settings. More case studies will be published across 2020, see <https://www.yslpilot.scot/case-studies>

**** Evaluation report will be delivered in two phases: phase 1 in September 2020; phase 2 in December 2022

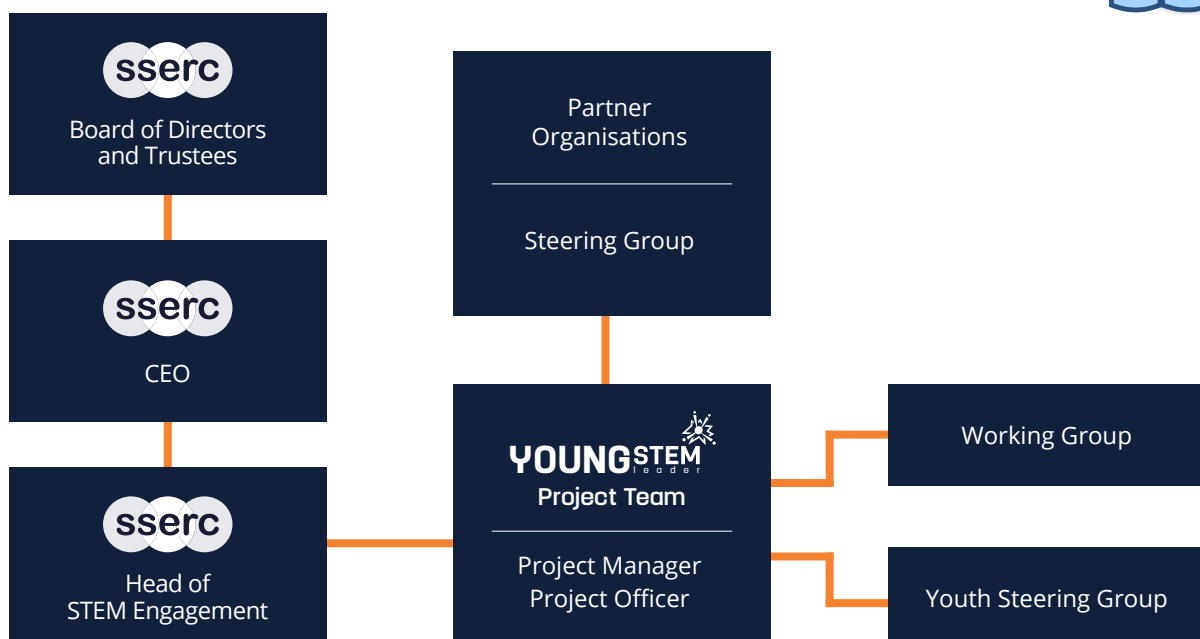
7. Development partners and supporting groups



The Project Team continues to make great use of the expertise, talent, and knowledge available, building on existing, and creating new, highly effective working relationships between SSERC and others. To date, we have:

- continued to liaise with all partners to the project, seeking their views and feedback on all developed content. Quarterly Steering Group meetings are held between SSERC and the partners. The Project Manager also provides monthly reports in line with project governance structure (see section 8)
- created a Youth Steering Group (YSG) to sample the voice of young people, gaining valued views and feedback on the developed content. The YSG has co-developed many aspects of the framework
- created a Working Group made up of Education Officers, Teachers, Youth Workers, Science Communicators, and those holding other relevant posts, to support the development of all programme content
- formed a quality assurance working system with the STEM Team at Education Scotland to review award documentation, informing changes to enhance quality and add value to the programme

8. Project Governance Structure



9. Contracted development partners



The Project Team has contracted three main external organisations who support the development and production of programme content.

- JH Digital Design to provide graphic design of digital and print publications, third-party web testing, branding, and logo production, etc.;
- Pogo Studio to build the online platform (post-pilot) to allow all programme users to deliver/complete the programme via the Young STEM Leader Website;
- Sports Leader Qualifications (SLQ) to support the development of framework and supporting materials for the formal levels of the programme and to assist the credit rating application submissions to SQA.



of STEM leadership activity
as a result of YSLP



earned by
Young STEM Leaders



have taken part in
the programme

10. Pilot



YSL2 and YSL6 were the first levels of the programme to be developed and were completed in time to pilot at the start of the academic year 2019/20. The original plan was to have a primary school, secondary school and community group in all six regional improvement collaboratives in Scotland. However, the publicity of the programme exceeded initial expectations and over 70 centres (rather than 18) took part. A summary of information on the pilot is presented below.

- Over 70 centres (schools, community/youth groups) have participated in the pilot of YSL2 and YSL6
- There are pilot centres in all Regional Improvement Collaboratives in Scotland, representing 23 local authorities
- Approximately 100 Tutor Assessors have completed the training offered by SSERC to deliver the programme in their respective centres
- 600 young people (aged 8-25) have taken part in the programme
- 146 Young STEM Leaders have been certificated at SCQF Level 6
- 438 SCQF credit points have been earned by Young STEM Leaders
- Over 2000 Insight tariff points were generated for relevant centres
- Estimated 10,000 hours of STEM leadership activity as a result of YSLP

11. Next steps: preparing for full national launch



The Project Team aim to ensure every young person in Scotland has access to the programme via their school, community or youth group by the end of 2022. The intermediate uptake target – set during the pilot year – is that 400 centres will be active within the programme by the end of 2020. Our current data as we prepare for full national launch in academic year 2020/21:

595 practitioners representing 436 centres have attended our information sessions

336 practitioners representing 250 centres have subsequently registered to become trained Tutor Assessors to deliver the programme

Our online training programme launches in late May 2020 and will run across the remainder of the year. Training is predominantly online and comes in three options: non-formal levels, formal levels, all levels.

We intend to hold a national launch event, ideally with ministerial reception, when centres reopen to young people. The event will be designed so that Young STEM Leaders have a key role in hosting, again, identifying the power of a STEM event being led by young people who are positive role models and inspirational figures in our national learning community.

