



THE YOUNG STEM LEADER PROGRAMME

Inspiring and developing young people through STEM

Annual Report

Academic year 2021/22

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YOUNGSTEM
Leader

led by



Introduction and foreword



The Young STEM Leader Programme has seen excellent growth this year, and it's been wonderful to see so much variation in the leadership activities being delivered by young people across Scotland – 10,000 of them in fact! As our schools, colleges and CLD groups moved away from blended or online learning, Young STEM Leaders were able to fully immerse themselves in STEM. This year also saw the growth of our Tutor Assessor community, which I am proud to say involves over 1,500 committed and passionate educators. I'm looking forward to seeing the growth of the programme as we move into our next phase, hoping to engage with every single learning community in Scotland.

Jamie Menzies

Programme Manager, Young STEM Leader Programme



This is the third Young STEM Leader Annual Report and the progress over this period of time– despite the challenges of the pandemic – has been phenomenal.

The Young STEM Leader programme continues to form an important part of the wider achievement agenda in both primary and secondary schools across the length and breadth of Scotland:

- enhanced by being SCQF credit and levelled and attracting both insight and UCAS points and recognition.
- not tied down by awarding body bureaucracy.
- supported by a robust approach to quality assurance that is non-intrusive.
- providing appropriate progression opportunities from BGE through to the senior phase and beyond.



I am really encouraged by the findings of the independent external evaluation of the programme, which evidences that young people are creating and planning STEM activities for others, developing and building their leadership, communication and employability skills, and helping to build STEM capital within their learning communities.

I look forward to the continued expansion of the programme, with the potential for further framework development at First Level and SCQF Level 7, while always ensuring it remains inclusive to all learners.

Alastair MacGregor

CEO, SSERC

Programme Overview

1. Introduction

This report details the achievements and deliverables of the Young STEM Leader Programme led by SSERC during the academic year 2021/2022.

For any queries related to the content of this report, please contact Jamie Menzies, YSLP Programme Manager, on Jamie.Menzies@sserc.scot.

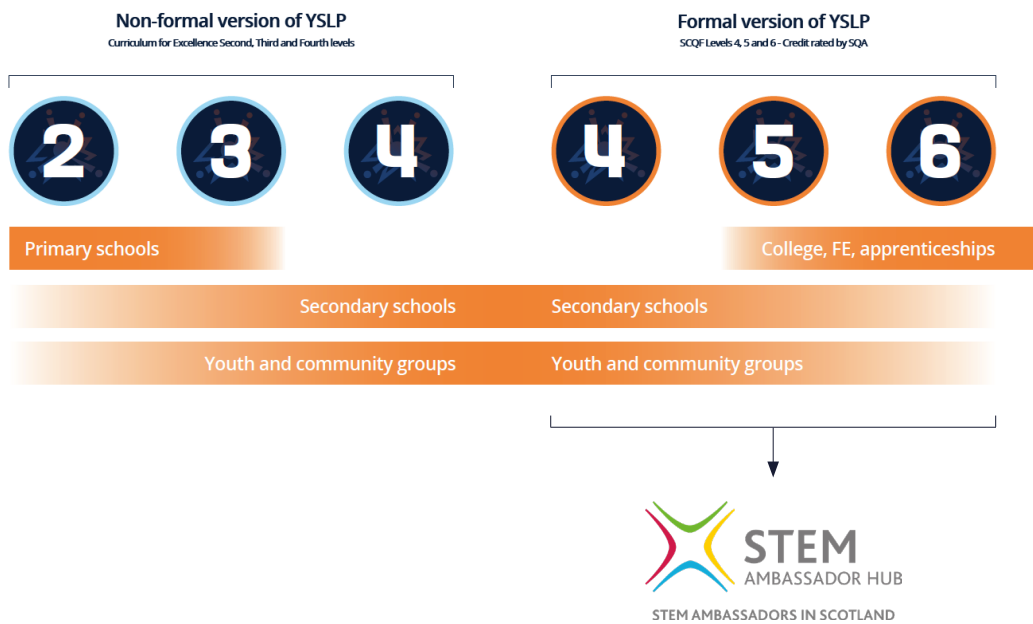
2. About the programme

The programme is open to all young people in Scotland to inspire, lead and mentor their peers through the creation and delivery of STEM activities, events and interactions within schools, communities and youth groups.

YSLP is available across six levels split into two versions:

- The non-formal version of YSLP is offered at Curriculum for Excellence Second, Third and Fourth Levels (YSL2, YSL3 and YSL4 (NF)). Typically delivered in primary schools, the BGE phase of secondary schools and in youth and community settings, these awards are made up of four digital badges: Discover, Create, Inspire and Lead. Completing the four digital badges satisfies the requirements of the award at these levels.
- The formal version of YSLP is offered at SCQF Levels 4, 5 and 6 (YSL4 (F), YSL5 and YSL6). Typically delivered in the senior phase of secondary schools, youth and community groups and some further education/ apprenticeship programmes, the formal awards consist of eight learning outcomes (LOs) with associated performance criteria and minimum action required. These awards are SCQF credit rated and levelled by SQA.





3. Staffing and Governance

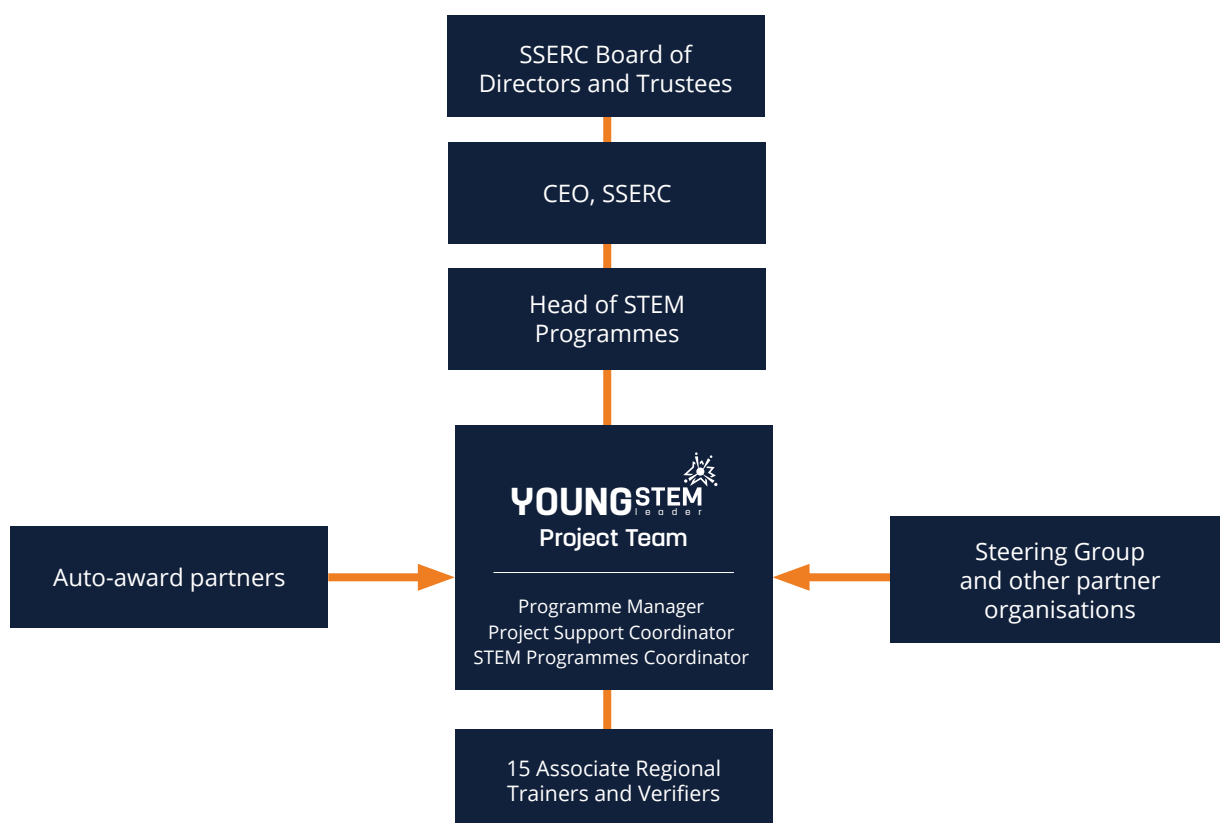
The Scottish Government-funded YSLP is led by SSERC in partnership with the following organisations who formed part of the original YSLP Steering Group. These organisations support the delivery and implementation of YSLP across Scotland.



3. Staffing and Governance (continued)

The YSLP team based at SSERC work with partner organisations to coordinate the programme at a national level, including overseeing the training and quality assurance procedures, developing award content and coordinating regional appointees.

Jamie Menzies	Programme Manager
Laura Gordon	STEM Programmes Officer
Gayle Thomson	Project Support Coordinator
Graeme Rough	Head of STEM Programmes



The team of 15 Associate Regional Trainers and Verifiers (ARTAVs) support quality assurance and training at a regional level. The team is made up of teachers and community workers who already have an existing Tutor Assessor role within their centre, but act as consultants for SSERC to support YSLP deliverables.

The remit of the ARTAV team includes:

- External verification
- Delivering YSLP professional learning
- Supporting YSLP activity within their local area
- Developing YSLP resources
- Supporting other SSERC programmes, including STEM Ambassadors in Scotland and Education Industry Partnerships

3. Staffing and Governance (continued)

SSERC adopts a Regional Improvement Collaborative model in terms of how we allocate ARTAVs to areas of Scotland. Each of the ARTAVs makes a valuable contribution to the success of the award through their expertise, insights and knowledge.



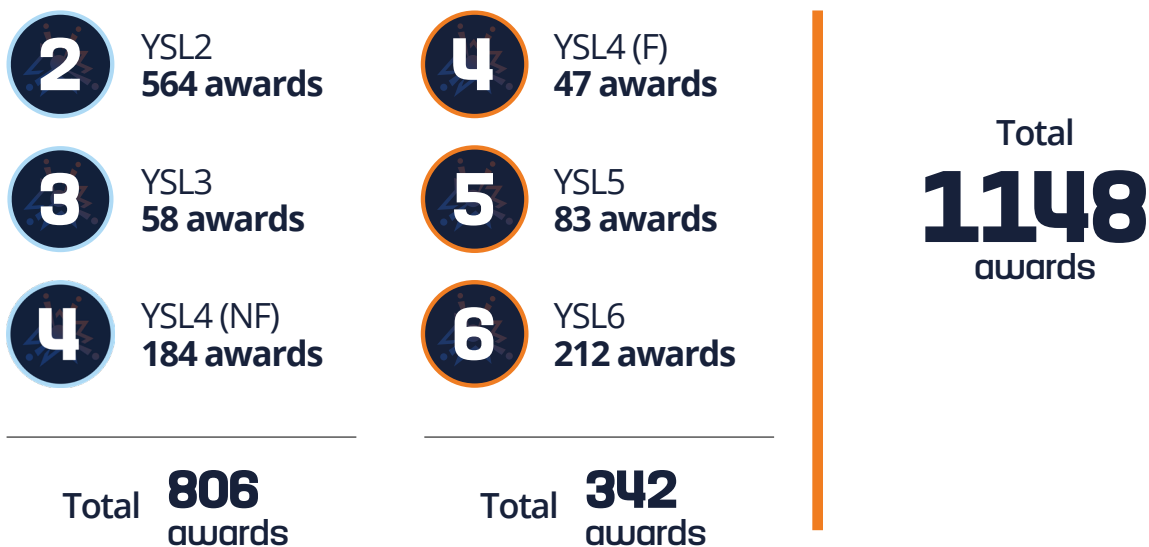
4. Participation

Participation in YSLP Programmes this academic year continued to grow, with an estimated 10,000 YSLs engaging with the programme across each of Scotland's 32 Local Authority Areas.



We were pleased to see many YSLs completing an award, despite challenges faced with a move back to exam qualifications.

Awards issued during academic year 2021/2022



Please see [Appendix 1](#) for a breakdown of certification by centre for Academic Year 2021/2022.

Deliverables in Academic Year 2021/2022

5. Training and Professional Learning



The YSLP and ARTAV teams delivered a total of 102 professional learning sessions this session, totalling 177 hours. This included a mixture of online, face-to-face or blended sessions.

Professional learning sessions delivered included:

- Information Sessions
- Tutor Assessor Training – a two-hour session covering an overview of award frameworks, assessment and quality assurance
- Tutor Assessor Connections – monthly networking and spotlight sessions for Tutor Assessors
- Kickstart Sessions – refresher training for Tutor Assessors
- Webinars – covering quality assurance and assessment
- Ongoing support, networking and conference presentations

Over 1300 attendances were made at YSLP events during this session. This includes open access sessions delivered online by the YSLP team as well as bespoke training for specific organisations including Local Authorities, schools and youth work settings. Bespoke Tutor Assessor training has also been delivered to cohorts, schools, clusters, organisations and local authorities across Scotland, this will continue into next session and beyond.





6. #YoungSTEMLeaderWeek

Following a successful launch in 2020, #YoungSTEMLeaderWeek returned in October 2021. The week is used as an opportunity to launch the programme in participating centres, for Young STEM Leaders to lead activities around a particular theme, or for new leaders to engage in some exciting online experiences. For the first time, an online Tutor Assessor Conference was held with over 100 delegates taking part.

Each day was set around a specific theme linked to the programme, with a mix of activities available:

- **Activities** for Tutor Assessors to deliver to YSLs, and for YSLs to lead to their audiences.
- **Challenges** that YSLs could take part in and share on social media using the hashtag #YoungSTEMLeaderWeek
- **Live events** to inspire and engage YSLs, led by our partner organisations such as Dynamic Earth, Education Scotland, STEM Ambassadors in Scotland and Leidos. Over 1000 young people took part in these online events.
- **Professional learning** for Tutor Assessors, including our first ever Tutor Assessor Conference attended by over 100 delegates.

Young STEM Leader Week will take place again from 31 October – 4 November 2022 with the theme **Future of STEM**.

7. Auto-awards

The YSLP team have been engaging with various STEM award providers to align YSLP to existing awards and frameworks. This provides the opportunity for young people completing other programmes to gain additional recognition through a Young STEM Leader award. This session, around 20% of YSLP awards were achieved through an auto-award route.



Existing auto awards are listed below:

Award provider	Agreement
 	<ul style="list-style-type: none"> • Industrial Cadets Gold Project carries an auto-award for YSL6 • Industrial Cadets Bronze Project carries an auto-award for YSL4 (non-formal) • FunSTEM Programme carries an auto-award for YSL2
	<ul style="list-style-type: none"> • Primary Class carries an auto-award for YSL2 • Entry Class carries an auto-award for YSL3 • Development Class carries auto-awards for YSL4, YSL5 and YSL6 • Professional Class carries auto-awards for YSL5
 	<p>Auto-award for YSL6 with the Industrial Biotechnology Innovation Centre (IBioIC) Leaders in Science Programme</p>
	<p>Completing a formal YSLP award can satisfy the <i>Skills and Volunteering</i> component of a Duke of Edinburgh Bronze, Silver or Gold award providing the activities take place over the prescribed DofE timescales.</p>
	<p>Completing YSL6 satisfies the requirements of The Boys' Brigade Queens Badge.</p>
 <p>Young Engineers and Science Clubs Scotland</p>	<p>Climate Smarter project carries an auto-award for YSL2.</p>
	<p>Schools Air Race Challenge carries auto-awards for YSL2 and YSL3</p>

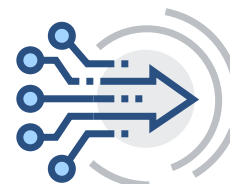
8. Evaluation

A three year evaluation by the University of Stirling on the Young STEM Leader Programme is published alongside this report. To read the evaluation report, [click here](#).



9. Development activity in 2021/2022

In addition to what has been mentioned above, a number of other developments took place within the YSLP this year, including



- New components of the YSLP online platform were launched, including:
 - Automated internal verification
 - Automated certification
 - Ongoing adjustments to improve the user journey through the website
- A new STEM Programmes Coordinator and three new ARTAVs joined the team.
- A grant fund from the Institute of Physics was launched to support YSLs in delivering physics-based activities in their centres.
- YSLP was showcased at a number of conferences and events, including the Digital Youth Work conference, the Scottish Learning Festival, the STEM Teaching and Inspiration Awards for Scotland and the Fife STEM Connectivity festival.
- The YSLP team welcomed its first college centre to the programme, Dundee & Angus College.
- The YSL5 and YSL4 awards were delivered through the DYW Live strand of the eSgoil online learning platform.
- In partnership with SLQ, the new STEM Leaders Qualification was launched in England, based on the existing Young STEM Leader frameworks.
- New e-Modules were developed in partnership with Education Scotland's Improving Gender Balance and Equalities team and Dynamic Earth.
- Development of YSLP Masterclasses, a set of resources for the formal levels to support the front-loaded teaching section of the YSL4, YSL5 or YSL6 award to be delivered as a one day event.
- Development of Standards Guidance resources, a set of documents containing example evidence and commentary from Young STEM Leader Logs at all levels.

9. Development activity in 2021/2022 (continued)

Deliverable	Description
<p>1 All local authorities have YSLP activity.</p>	<ul style="list-style-type: none"> • Between April and June 2021, the YSLP and ARTAV team will engage with undersubscribed local authorities (e.g., through RAiSE team, Ed Scot STEM Officers) and identify strategies to increase participation. • By June 2022 – 7,000 young people will have participated in the Young STEM Leader Programme.
<p>2 Quality assurance of the YSLP</p>	<ul style="list-style-type: none"> • The YSLP team will continue to embed high standards of quality assurance across the formal and non-formal versions of the programme. • As a result of any issues identified within quality assurance, there will need to be resource allocated to amendments to YSLP resources. • Based on a quality assurance review, the team will develop standardisation materials for each level of the programme including: <ul style="list-style-type: none"> ◦ Exemplar Log evidence ◦ Standardisation professional learning ◦ Exemplar Internal Verification paperwork
<p>3 Professional learning delivery</p>	<ul style="list-style-type: none"> • We will deliver targeted training programmes to undersubscribed local authorities as identified by the YSLP Project Team and team of ARTAVs. • YSLP/ARTAV team will continue to provide a high-quality professional learning offer for new and existing Tutor Assessors, including: Information Sessions, Tutor Assessor Training, TA Connections, Webinars, Kickstart Sessions.

9. Development activity in 2021/2022 (continued)

Deliverable	Description
<p>4 Non-mainstream delivery of YSLP</p>	<ul style="list-style-type: none"> • We will develop an ASN working group comprised of existing Tutor Assessors working with young people with Additional Support Needs to inform the strengths, challenges and potential solutions to making the YSLP more accessible to all. • Based on the report from the CLD working group, develop a training package specifically for Community Learning and Development practitioners delivering the YSLP. • Work to provide opportunities for young people to access the programme where the award is not being delivered in school, such as continuing to deliver YSLP on the eSgoil platform.
<p>5 Marketing and communications</p>	<ul style="list-style-type: none"> • Continue to deliver effective marketing and communication activities related to YSLP, including case studies, social media and publications. • Deliver the annual Young STEM Leader Week online event in October/November 2022.
<p>6 Auto-awards and partnerships</p>	<ul style="list-style-type: none"> • Seek new opportunities to engage with other STEM providers in developing auto-awards, such as Young Engineers and Science Clubs (YESC). • Continue to embed YSLP into other products offered by SSERC STEM Engagement where appropriate, such as Nuffield Research Placements, ENTHUSE Partnerships, Education Industry Partnerships.

10. Quality Assurance



External verification activity was carried out 58 times this academic year, with a majority of centres achieving an *Accepted* or *Accepted with Recommendations* result. External verification is undertaken by the ARTAV team, with three possible results:

Accepted

- The centre is applying the standards of the award correctly. No major action(s) required.

Accepted with recommendations

- The centre is applying the standards of the award correctly. However, in some areas, recommendations will be made to improve practice.
- Action should be taken prior to next cohort.

Not accepted

- The centre is not applying the standards of the award correctly.
- Action must be taken prior to certification, and awards can only be issued on successful completion of these actions.
- Sanctions may be imposed for continual *Not Accepted* submissions, although this is very rare.

Non-formal External Verification Results 2021/2022

Level	# Completed EVs	Accepted	Recommendations	Not accepted
YSL2	18	12 (67%)	6 (33%)	0
YSL3	7	5 (71%)	1 (14%)	1 (14%)
YSL4	2	1 (50%)	1 (50%)	0
Total	27	18	8	1

10. Quality Assurance (continued)

Formal External Verification Results 2021/2022

Level	# Completed EVs	Accepted	Recommendations	Not accepted
YSL4	4	2 (50%)	2 (50%)	0
YSL5	3	3 (100%)	0	0
YSL6	24	14 (58%)	8 (33%)	2 (8%)
Total	31	19	10	2

The quality assurance processes of the YSLP allows SSERC to maintain the integrity, standards and values of the award.

11. YSLP Beyond Scotland

Scottish Government and SSERC Board approval allowed for a new joint venture between SSERC and Sports Leaders Qualification (SLQ) to develop and launch a new STEM Leader award for schools in England.

Two levels of a new Qualification in STEM Leadership have been developed:

- Level 1 Qualification in STEM Leadership (Key Stage 3/Years 7 and 8), broadly equivalent to SSERC's YSL4 award.
- Level 2 Qualification in STEM Leadership (Key Stage 4/Years 9 and 10, broadly equivalent to SSERC's YSL5 award.

In November 2021, SLQ launched the STEM Leaders programme into the English secondary education market via a joint venture with SSERC. Developed in partnership with SSERC, STEM Leaders encourages learners to inspire, lead and mentor their peers through the creation and delivery of STEM activities events and interactions within their schools, communities or youth groups.

During this pilot year, Pioneer STEM centres have helped support and shape the development of the programme, providing valuable feedback and sharing good practice with potential new STEM centres. Over 300 learners have engaged in the programme and will continue to develop their leadership skills within their setting.



Appendix 1: Certification 2021/2022

Number of Certificates Issued by Centre & Level Aug 2021 - July 2022

Primary Schools

Centre	Local Authority	2	3	4	4	5	6
Dalbeattie Primary School	Dumfries & Galloway	15					
Fintry Primary School	Dundee	18	7				
Craigdhu Primary School	East Dunbartonshire	5					
Bellyeoman Primary School	Fife	5					
Dunnikier Primary School	Fife	52					
Leslie Primary School	Fife	24					
Tulliallan Primary School	Fife	28					
Caldercuilt Primary School	Glasgow	29					
Hillhead Primary School	Glasgow	42					
St Marnock's Primary School	Glasgow	9					
Condorrat Primary School	North Lanarkshire	40					
Woodlands Primary School	North Lanarkshire	40					
Kirklandneuk Primary School	Renfrewshire	9					
Crawforddyke Primary School	South Lanarkshire	48					
Our Lady and St Anne's Primary School	South Lanarkshire	8					
Kirkhill Primary School	West Lothian	17					
Linlithgow Bridge Primary School	West Lothian	20					
Livingston Village Primary School	West Lothian	13					
My Online Schooling	National	31					

Secondary Schools

Centre	Local Authority	2	3	4	4	5	6
International School Aberdeen	Aberdeen			9			
Mackie Academy	Aberdeenshire				3		
Carnoustie High School	Angus			2			
Monifieth High School	Angus				12	16	4
Oban High School	Argyll and Bute						1
Dumfries Academy	Dumfries and Galloway						12
St Joseph's College	Dumfries and Galloway						3
Bearsden Academy	East Dunbartonshire			6			4
Douglas Academy	East Dunbartonshire					10	
Turnbull High School	East Dunbartonshire						4
Ross High School	East Lothian						5
Barrhead High School	East Renfrewshire			6			
Eastwood High School	East Renfrewshire			5			
Mearns Castle High School	East Renfrewshire			6			1
Williamwood High School	East Renfrewshire					18	
Woodfarm High School	East Renfrewshire			24			
Boroughmuir High School	Edinburgh						14
Merchiston Castle School	Edinburgh City			12			
Larbert High School	Falkirk			4			
Balwearie High School	Fife						1
Inverkeithing High School	Fife		35				
Kirkcaldy High School	Fife			5			

Secondary Schools (continued)

Centre	Local Authority	2	3	4	4	5	6
Madras College	Fife			12			
Queen Anne High School	Fife						4
Waid Academy	Fife						12
Woodmill High School	Fife						3
Hillhead High School	Glasgow						1
Hillpark Secondary School	Glasgow			4			
Holyrood RC Secondary School	Glasgow			4			15
King's Park Secondary School	Glasgow			32			
St Andrew's RC Secondary School	Glasgow					12	10
St Paul's RC High School	Glasgow			6			
St Thomas Aquinas Secondary School	Glasgow			5			
Farr High School	Highland						3
Glen Urquhart High School	Highland				13		
Kingussie High School	Highland						3
Port Glasgow High School	Inverclyde						4
Greenwood Academy	North Ayrshire			4			
St Matthew's Academy	North Ayrshire						16
Buchanan High School	North Lanarkshire				8		1
Coatbridge High School	North Lanarkshire						10
Dalziel High School	North Lanarkshire					2	5
St Andrew's High School	North Lanarkshire						7
St Margaret's High School	North Lanarkshire			11			

Secondary Schools (continued)

Centre	Local Authority	2	3	4	4	5	6
Taylor High School	North Lanarkshire				6		
Kinross High School	Perth and Kinross						2
St John's RC Academy	Perth and Kinross						8
Castlehead High School	Renfrewshire					9	
Park Mains High School	Renfrewshire						9
Jedburgh Grammar School	Scottish Borders				2		
Peebles High School	Scottish Borders						3
Marr College	South Ayrshire		16				
Biggar High School	South Lanarkshire				3		16
Calderglen High School	South Lanarkshire			5			5
Duncanrig Secondary School	South Lanarkshire						3
Hamilton College	South Lanarkshire						3
St Peter the Apostle High School	West Dunbartonshire						8
Broxburn Academy	West Lothian			3			
James Young High School	West Lothian			6			
Linlithgow Academy	West Lothian					8	4

Further Education

Centre	Local Authority	2	3	4	4	5	6
Dundee and Angus College	Dundee						8

Community Learning and Development

Centre	Local Authority	2	3	4	4	5	6
Field Studies Council	National			13			
Youth 1st	Fife					8	
North Ayrshire Council - Family Learning	North Ayrshire	101					
NLC Digital Pathfinder	North Lanarkshire	6					
South Lanarkshire Council Youth, Family & Community Learning	South Lanarkshire	4					

	2	3	4	4	5	6	Total awards 2021-2022
Total Awards	564	58	184	47	83	212	1148