



THE YOUNG STEM LEADER PROGRAMME

Inspiring and developing young people through STEM

Annual Report

Academic year 2022/23

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Leader
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Introduction and foreword



This year has seen the highest number of YSLs achieve award certificates since the programme started, around 3,500 learners completed one of our six levels of the programme. It is thanks to the dedication of our committed network of over 2,000 Tutor Assessors that the Programme is seeing such an impact across the country. New for this session is the introduction of the Award in STEM Leadership at SCQF Level 7 – which will be available to all centres in June 2024 – that acts to enhance the uptake of the programme for learners working in the senior phase of secondary school, further education or within employment programmes. I'm also encouraged by the inclusion of the programme within STEM, wider achievement or employability initiatives by Local Authorities and the achievements by learners taking part in programmes offered by one of our Auto Award partners. The continued expansion of the programme will provide more opportunities for every young person in Scotland to engage with the programme at one or more stages of their learning journey, and I'm looking forward to seeing how it grows and develops in future.



Jamie Menzies

Programme Manager, Young STEM Leader Programme (2022/23)



The Young STEM Leader programme continues to go from strength to strength, as evidenced by the contents of this annual report. Growth in terms of the number of centres and learners, growth in terms of geographical reach, and growth in terms of the introduction of the SCQF Level 7 version of the programme. This new level would not have been possible had it not been for the support of Ocean Winds, not just in a financial sense, but also in terms of their expertise and innovation, recognising the need for the award and a general increase in leadership opportunities for young people. It is encouraging to see this type of educational support from the renewable energy sector, recognising the benefit for learners that this type of wider achievement offers.

The education landscape will continue to evolve and change. With recent reports calling for the broadening of achievement during the Senior Phase to include wider skills and experiences beyond those gained in discrete subjects, the Young STEM Leader programme is well-placed to be at the heart of this recognition of the wider achievement agenda.



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 2022/2023. For queries related to the content of this report, please contact Graeme Rough, Head of STEM Programmes, at Graeme.Rough@sserc.scot.

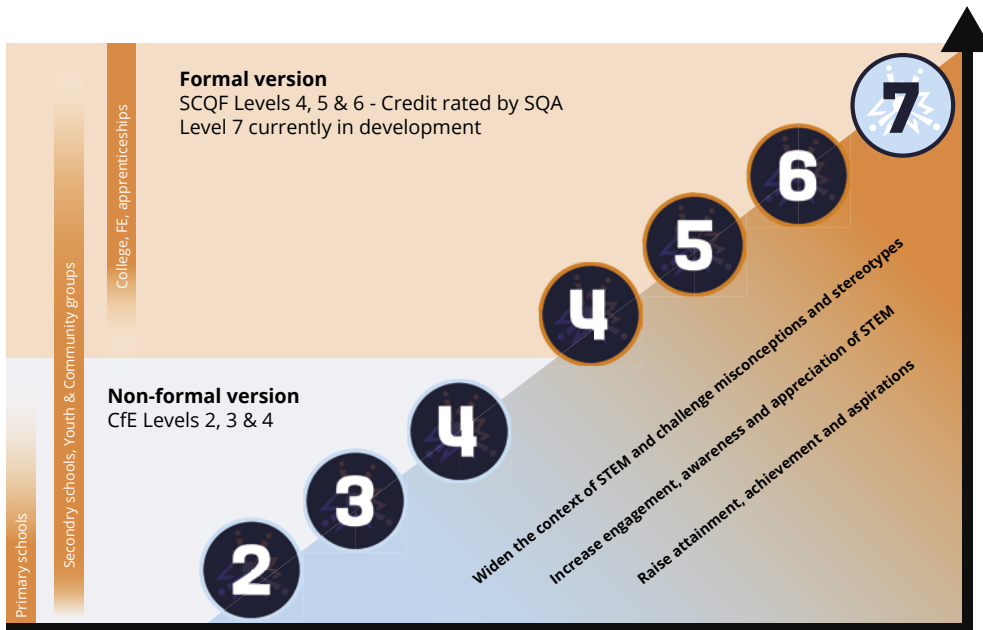
2. About the programme



The Young STEM Leader Programme (YSLP) was designed to enable 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. Throughout this process, Young STEM Leaders (YSLs) compile evidence to satisfy the particular requirements of each of the award specifications across six levels:

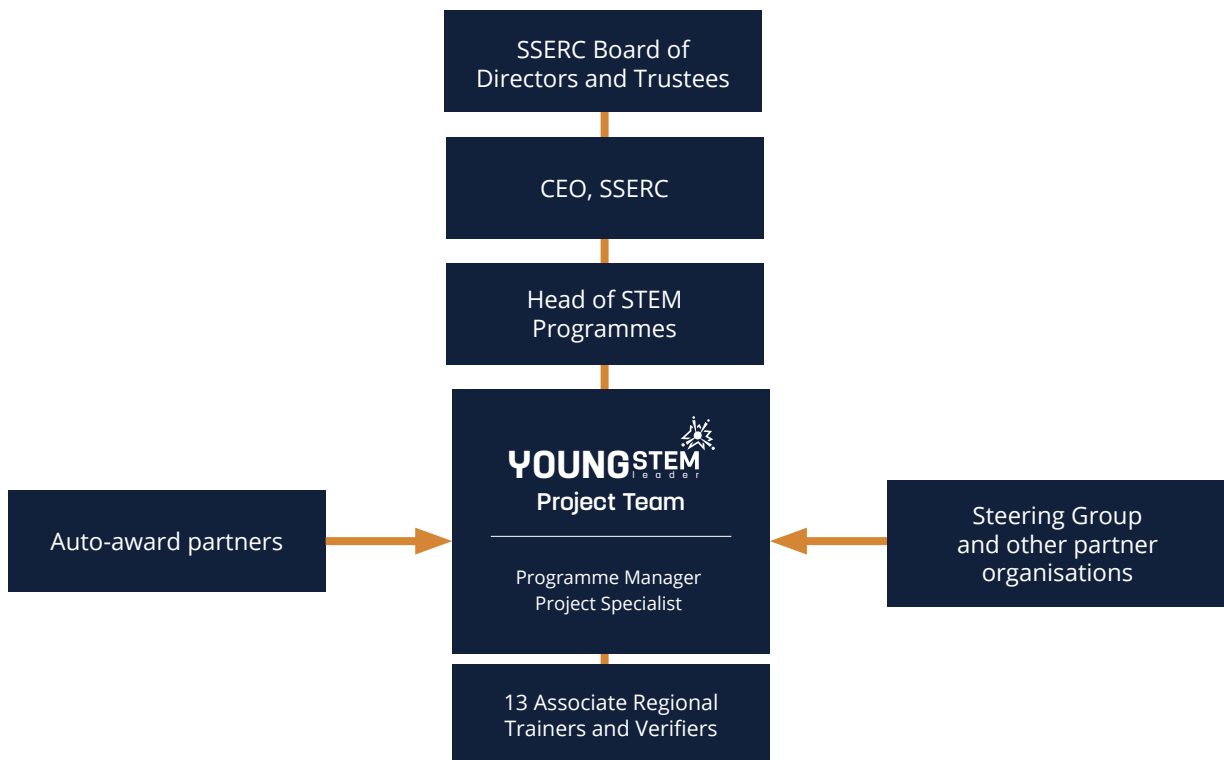
- The non-formal programme is offered at Curriculum for Excellence Second, Third and Fourth Levels (known as YSL2, YSL3 and YSL4 (non-formal)). Each of these awards comprises four badges (Discover, Create, Inspire and Lead) and the completion of all four leads to an award certificate for the YSLs. These awards are delivered typically in primary schools, the Broad General Education (S1-3) in Secondary schools, and in community settings working with learners at these curricular levels.
- The formal version of the programme comprises three awards at Scottish Credit and Qualifications Framework (SCQF) Levels 4, 5 and 6 (YSL4 (formal), YSL5 and YSL6). Typically delivered in the senior phase of secondary schools, youth and community groups and a limited number of further education settings. The formal awards consist of eight Learning Outcomes (LOs) which have associated evidence requirements. Since these awards are on the SCQF, learners achieve SCQF Credit Points for achieving an award, UCAS Tariff Points for YSL6, and the awards are included on Insight for the Senior Phase.
- **New for 2023** is the Award in STEM Leadership at SCQF Level 7 (STEM Leader 7). This award is designed for learners aged 16+ in the Senior Phase, Further Education and other educational settings – including community learning. Through completing a research project focused on the UN Sustainable Development Goals, learners will gather and submit evidence across six Learning Outcomes, supported by a supporter and the Tutor Assessors in centre. A pilot of the STEM Leader 7 award will take place starting in September 2023 with around 20 centres, and will be open to all registered Delivering Centres starting in June 2024.

STEM Pathways



3. Staffing and Governance

The Scottish Government-funded YSLP is led by SSERC in partnership with a number of STEM and young-people focused organisations across Scotland. The YSLP Team at SSERC work with these partner organisations to coordinate the programme at a national level, including overseeing the training and quality assurance procedures, developing award content and coordinating the team of regional trainers/verifiers.



3. Staffing and Governance (continued)

The team of 13 Associate Regional Trainers and Verifiers (ARTAVs) undertake YSLP quality assurance, deliver Professional Learning (locally, regionally and nationally) and are involved in providing direct support to the network of trained YSLP Tutor Assessors.

The remit of the ARTAV Team includes:

- Completing External Verifications
- Delivering YSLP Professional Learning, including Tutor Assessor Training, Information Sessions and Tutor Assessor Connections.
- Supporting YSLP activity within their local area (defined by the Regional Improvement Collaboratives).
- Supporting other SSERC initiatives, such as Education Industry Partnerships or the development of Professional Learning (e.g. SSERC's new course The M in STEM: Collaborative approaches to improve learning).

Each of the ARTAV team makes a valuable contribution to the roll-out, implementation and success of the award through their individual expertise. More information about the YSLP staffing team can be found at www.youngstemleader.scot/the-team.



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

It is estimated that over 15,000 Young STEM Leaders have engaged with the programme since its inception – around 5,000 of those learners engaging for the first time in 2022/23. The programme is operational in each of Scotland's 32 Local Authority areas.



Awards issued during academic year 2022/2023

Award level	Number of award certificates issued	Number of auto-awards	Total awards for this level
2 YSL2	1071	1167	2238
3 YSL3	357	63	420
4 YSL4 (NF)	30	178	208
4 YSL4 (F)	99	11	110
5 YSL5	102	26	128
6 YSL6	259	48	307

1918
award certificates

1493
auto-award certificates

3411
awards issued

Please see [Appendix 1](#) for a breakdown of certification by centre for Academic Year 2022/2023.

5. Training and Professional Learning



The YSLP and ARTAV teams delivered 87 Professional Learning events this session, attended by a total of 1110 delegates.

Professional Learning sessions delivered included:

- Information sessions: Introductions to the YSLP for practitioners and centres that are completely new to the programme
- Tutor Assessor Training: a two-hour session covering an overview of award frameworks, assessment and quality assurance. Typically, these sessions cover the non-formal programme, the formal programme, or both, and occasionally specialist sessions are offered for practitioners from specific areas, e.g. Primary teachers.
- Tutor Assessor Connections: monthly networking and spotlight sessions for Tutor Assessors.
- Kickstart Sessions: Refresher training for Tutor Assessors
- Webinars covering quality assurance and assessment
- Conference presentations and workshops presented by the SSERC and ARTAV teams.

The YSLP and ARTAV teams have continued to offer bespoke Information and Training sessions to Local Authorities, clusters, schools and other organisations, supported by partners – in particular the RAiSE network. SSERC are committed to ensuring that learners within every learning community in Scotland are engaged with the programme.





6. #YoungSTEMLeaderWeek 2022

The third annual #YoungSTEMLeaderWeek – the celebration week for the Young STEM Leader Programme – took place in October 2022. This week was designed as a platform for Delivering Centres to launch and/or showcase the work of Young STEM Leaders in their centre and beyond, and included a number of in-person and online events centred around the theme The Future of STEM.

Each day of the week had a specific theme, such as The Future of Space, The Future of Energy and The Future of Nature, and included a number of programmed events and experiences:

- **Activities** for Tutor Assessors to deliver to YSLs, and for YSLs to lead to their chosen audiences, such as a food web activity for the Future of Nature.
- Daily **challenges** for YSLs to engage with on social media, using the tag #YoungSTEMLeaderWeek – which in total was used 335 times.
- **Live events** led by partner organisations including STEM Ambassadors
- For the first time, **Tutor Assessor Meet Ups**, the first in-person informal networking meetings taking place at 7 different locations across Scotland.

7. Auto-awards



Achieving an auto-award for YSLP means receiving an award certificate for participation in a partner STEM programme. This is often achieved through no extra work by the learner, although some auto-award agreements involve extra steps required to meet the requirements of a particular award level. Auto-awards provide the opportunity for young people to be recognised for their achievements in partner programmes that align with the values, ethos and assessment requirements of the YSLP.

This academic year, 43% of YSLP awards were achieved through an auto-awards route, highlighting the value of partnerships in contributing to the success of the programme and in recognising the achievements of YSLs.

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 (IBiolC) 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>The Climate Smarter and Carbon Capture and Storage projects both carry auto-awards for YSL2</p>
	<p>Schools Air Race Challenge carries auto-awards for YSL2 and YSL3</p>

8. Quality Assurance



Quality assurance for YSLP takes place in two stages:

- Internal Verification happens in-centre, between a Tutor Assessor and a nominated Internal Verifier. All centres must complete Internal Verification prior to applying for award certificates.
- External Verification is undertaken by SSERC at certification stage. There are a number of reasons that centres may be externally verified, but primarily the process is triggered when a centre submits award certificate requests for a particular level for the first time, or when a centre submits certificate requests for a level that was previously Not Accepted during the most recent External Verification for that level.

There are three possible External Verification 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.

8. Quality Assurance (continued)

Non-formal External Verification Results 2022/2023

Level	Completed EVs	Accepted	Recommendations	Not accepted*
YSL2	34	24 (71% ↑)	9 (26% ↓)	1 (3% ↑)
YSL3	5	4 (80% ↑)	1 (20% ↑)	0 ↓
YSL4	3	2 (67% ↑)	0 ↓	1 (33% ↑)
Total	42	30 (71% ↑)	10 (24% ↓)	2 (5% ↑)

Formal External Verification Results 2022/2023

Level	Completed EVs	Accepted	Recommendations	Not accepted*
YSL4	9	7 (78% ↑)	2 (22% ↓)	0
YSL5	12	10 (84% ↓)	2 (16% ↑)	0
YSL6	22	17 (78% ↑)	4 (18% ↓)	1 (4% ↓)
Total	43	34 (79% ↑)	10 (19% ↓)	2 (5% ↓)

At the time of writing, there are a number of pending External Verifications in which the result has not yet been determined, and these have not been included in the above tables.

Arrows represent an increase or decrease on academic year 21/22

*Additional support will be provided by the SSERC Team to provide a pathway to an accepted result.

9. Award in STEM Leadership at SCQF Level 7



Following growing demand among the educational community for both a CfE First Level and SCQF Level 7 award, with support of Ocean Winds and the SCQF Partnership, the Young STEM Leader Team has been working in partnership to develop a new Award in STEM Leadership at SCQF Level 7. This new award is designed for colleges, senior phase learners and community settings with a specific focus on Learning for Sustainability and the Sustainable Development Goals. Taking part in the award will comprise learners undertaking a research project, with assessment being holistic and based on project outputs – rather than the traditional Young STEM Leader Log.

A small writing group was formed consisting of existing Tutor Assessors and representatives from colleges, SQA and Zero Waste Scotland to produce an initial award framework, outlining the six Learning Outcomes that STEM Leaders will achieve as part of a project-based award. As of August 2023, SSERC are undergoing the credit rating process with SQA.

Over twenty centres have been recruited to take part in a limited award pilot starting in September 2023. The award will be available to all centres in Scotland starting in June 2024.

"Ocean Winds made an early commitment to support STEM education in Scottish schools by partnering with SSERC. Part of the strength in that partnership has been SSERC's understanding of needs and opportunities. We therefore welcomed the chance to fund YSL7, extending the well regarded YSL programme. The feedback about YSL7 and the Ocean Winds support has been fantastic and reinforces our belief that we are making a difference in encouraging students towards STEM related careers, including in our offshore wind sector."

Mark Baxter, Caledonia Offshore Wind Farm Project Director



STEM LEADER



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10. YSLP Beyond Scotland

The STEM Leaders programme in England is gaining momentum across the secondary education sector and community sector. Now in its second year, the Leadership Skills Foundation has delivered numerous information and support webinars to provide context as to why leadership skill development through STEM is vital for young people today. Such an offer empowers them to drive their future and become change-makers within their community.

Ellie Peacock (Deputy Head of Science Academy at The Mountbatten School) stated, when asked recently how she thinks the programme has prepared her learners for the next steps in education or future employment:

"They have developed skills which will play a key role in future personal development. Many have been keen to support STEM clubs and events on a more regular basis and have spoken really positively of their experience."

"We wanted our students to leave school with skills and qualifications alongside the standard GCSE's we offer, the content and qualification on offer ticked the boxes for us."



Participation in Leadership Skills Foundation's STEM Leaders Award

	Number of Learners	Number of Centres
2021/2022	338	16
2022/2023	193 (new)	13 (new)

Appendix 1: Certification 2022/2023

Number of certificates issued by centre & level | August 2022 – July 2023

Primary Schools

Centre	Local Authority	2	3	4	4	5	6
Aberchirder Primary School	Aberdeenshire	1					
Meiklemill Primary School	Aberdeenshire	25					
Skene School	Aberdeenshire	21					
Isla Primary School	Angus	21					
Southmuir Primary School	Angus	25					
Timmergreens Primary School	Angus	48					
Garlieston Primary School	Dumfries & Galloway	28					
Fintry Primary School	Dundee	19	10				
Rosebank Primary School	Dundee	10					
Sidlaw View Primary School	Dundee	12					
St Mary's RC Primary School	Dundee	22					
St Pius X RC Primary School	Dundee	19					
Holy Trinity Primary School	East Dunbartonshire	7					
Mosshead Primary School	East Dunbartonshire	17					
Thomas Muir Primary School	East Dunbartonshire	99					
Carolside Primary School	East Renfrewshire		23				
Maidenhill Primary School	East Renfrewshire	66					
St Mark's Primary School	East Renfrewshire	11					
Balgreen Primary School	Edinburgh	50					

Primary Schools (continued)

Centre	Local Authority	2	3	4	4	5	6
Stoneyhill Primary School	Edinburgh	24					
Bantaskin Primary School	Falkirk	30					
Bowhouse Primary School	Falkirk	21					
Head of Muir Primary School	Falkirk	41					
Canmore Primary School	Fife	58					
Carnock Primary School	Fife	7					
Colinsburgh Primary School	Fife	17					
Crossgates Primary School	Fife	28					
Leslie Primary School	Fife	26	27				
Lochgelly South Primary School	Fife	21					
Lumphinnans Primary School	Fife	21					
Newport Primary School	Fife	13					
Barmulloch Primary School	Glasgow	11					
Our Lady of Peace Primary School	Glasgow	14					
Parkview Primary School	Glasgow	17					
St Charles' Primary School	Glasgow	28					
St Francis of Assisi RC Primary School	Glasgow	10					
St Rose of Lima Primary School	Glasgow	8					
Dingwall Primary School	Highland	22					
St Anne's Primary School	Highland	2					
Bun Sgoil Lacasdail	Na h-Eileanan Siar	23					
Castlepark Primary School	North Ayrshire	7					

Primary Schools (continued)

Centre	Local Authority	2	3	4	4	5	6
Loudoun Montgomery Primary School	North Ayrshire	16					
St Bridget's Primary School	North Ayrshire	65					
Condorrat Primary School	North Lanarkshire	17					
Holy Cross Primary School	North Lanarkshire	57					
Kilsyth Primary School	North Lanarkshire	22					
Woodlands Primary School	North Lanarkshire	30					
Aberuthven Primary School	Perth & Kinross	18	8				
Errol Primary School	Perth & Kinross	26					
Forgandenny Primary School	Perth & Kinross	20					
Fossoway Primary School	Perth & Kinross	21					
Glenlyon Primary School	Perth & Kinross	2					
Grandtully Primary School	Perth & Kinross	17					
Newhill Primary School	Perth & Kinross	31					
Ruthvenfield Primary School	Perth & Kinross	21					
Fordbank Primary School	Renfrewshire	7					
Kirklandneuk Primary School	Renfrewshire	10	7				
Rashielea Primary School	Renfrewshire	36					
St Anthony's Primary School	Renfrewshire	24					
St Charles' Primary School	Renfrewshire	31					
Todholm Primary School	Renfrewshire	66					
St Peter's Primary School	Scottish Borders	13					
Blackwood Primary School	South Lanarkshire	13					

Primary Schools (continued)

Centre	Local Authority	2	3	4	4	5	6
Braehead Primary School	South Lanarkshire	5					
Burgh Primary School	South Lanarkshire	28					
Burnside Primary School	South Lanarkshire	59					
Carstairs Primary School	South Lanarkshire	20					
James Aiton Primary School	South Lanarkshire	22					
Mossneuk Primary School	South Lanarkshire	31					
New Lanark Primary School	South Lanarkshire	7					
St Bride's Primary School	South Lanarkshire	47					
St John's Primary School	South Lanarkshire	8					
Kirkhill Primary School	West Lothian	11					
Linlithgow Bridge Primary School	West Lothian	11					
Livingston Village Primary School	West Lothian	8					
St Joseph's RC Primary School	West Lothian	35					

Secondary Schools

Centre	Local Authority	2	3	4	4	5	6
Albyn School	Aberdeen			6			
Hazlehead Academy	Aberdeen	5					
International School Aberdeen	Aberdeen			12			1
Lochside Academy	Aberdeen						6
St Machar Academy	Aberdeen						1
St Margaret's School for Girls	Aberdeen			6			
Aberdeen Grammar School	Aberdeen City						2
Alford Academy	Aberdeenshire						2
Banff Academy	Aberdeenshire		3		6		1
Mackie Academy	Aberdeenshire				4		4
Carnoustie High School	Angus			1			
Forfar Academy	Angus		13			9	
Oban High School	Argyll & Bute						1
Dumfries Academy	Dumfries & Galloway						8
Park School	East Ayrshire	13					
Stewarton Academy	East Ayrshire			9	6	5	
Bearsden Academy	East Dunbartonshire			6			
Boclair Academy	East Dunbartonshire		5		5	7	
Douglas Academy	East Dunbartonshire					1	
Kirkintilloch High School	East Dunbartonshire						4
Turnbull High School	East Dunbartonshire						2
Ross High School	East Lothian	10					4

Secondary Schools (continued)

Centre	Local Authority	2	3	4	4	5	6
Eastwood High School	East Renfrewshire						9
Mearns Castle High School	East Renfrewshire						6
St Luke's High School	East Renfrewshire			5			
St Ninian's High School	East Renfrewshire				4	3	10
Williamwood High School	East Renfrewshire					16	18
Woodfarm High School	East Renfrewshire	8		12			6
Balerno Community High School	Edinburgh				8		
Boroughmuir High School	Edinburgh						7
Currie Community High School	Edinburgh			11			
Merchiston Castle School	Edinburgh			6			
Stewart's Melville College	Edinburgh					8	
Bo'ness Academy	Falkirk		13				
Larbert High School	Falkirk			4			
Balwearie High School	Fife						10
Inverkeithing High School	Fife		42				
Lochgelly High School	Fife	5					
Queen Anne High School	Fife						5
St Columba's RC High School	Fife						1
Waid Academy	Fife				8		
Castlemilk High School	Glasgow						8
Holyrood RC Secondary School	Glasgow						12
Hyndland Secondary School	Glasgow			8			

Secondary Schools (continued)

Centre	Local Authority	2	3	4	4	5	6
Jordanhill School	Glasgow			12			
King's Park Secondary School	Glasgow		28	47			
Notre Dame High School	Glasgow			6		12	
Rosshall Academy	Glasgow					1	
Sgoil Ghàidhlig Ghlaschu (Glasgow Gaelic School)	Glasgow			14			
St Andrew's RC Secondary School	Glasgow		1	2		10	4
St Paul's High School	Glasgow				2		
The Glasgow Academy	Glasgow City	91					
Dingwall Academy	Highland						15
Farr High School	Highland						5
Fortrose Academy	Highland	11					
St Stephen's High School	Inverclyde						2
Penicuik High School	Midlothian						2
Elgin Academy	Moray					11	
Milne's High School	Moray						1
My Online Schooling	National	35					
Ardrossan Academy	North Ayrshire		23				
Auchenharvie Academy	North Ayrshire					6	
Kilwinning Academy	North Ayrshire	13					
Radio City School	North Ayrshire			7			
St Matthew's Academy	North Ayrshire					2	4
Airdrie Academy	North Lanarkshire			5			

Secondary Schools (continued)

Centre	Local Authority	2	3	4	4	5	6
Buchanan High School	North Lanarkshire				8		
Coatbridge High School	North Lanarkshire			6			
Cumbernauld Academy	North Lanarkshire	2					
Dalziel High School	North Lanarkshire				6	13	2
St Aidan's High School	North Lanarkshire			5			4
St Andrew's High School	North Lanarkshire						11
St Margaret's High School	North Lanarkshire		18	4			
Kinross High School	Perth & Kinross			1			
Castlehead High School	Renfrewshire					11	
Gleniffer High School	Renfrewshire			4			
Gryffe High School	Renfrewshire						8
Park Mains High School	Renfrewshire						8
Renfrew High School	Renfrewshire		8				
St Andrew's Academy	Renfrewshire					5	
Jedburgh Grammar School	Scottish Borders						2
Peebles High School	Scottish Borders						6
Marr College	South Ayrshire		5		6		
Biggar High School	South Lanarkshire						18
Calderglen High School	South Lanarkshire			3			12
Duncanrig Secondary School	South Lanarkshire						4
Hamilton College	South Lanarkshire						6
Lesmahagow High School	South Lanarkshire			11			

Secondary Schools (continued)

Centre	Local Authority	2	3	4	4	5	6
Stonelaw High School	South Lanarkshire			10			
Strathaven Academy	South Lanarkshire		14	2			
Dunblane High School	Stirling		4				
St Peter the Apostle High School	West Dunbartonshire			5			10
Broxburn Academy	West Lothian					5	
Cedarbank School	West Lothian				2		
Inveralmond Community High School	West Lothian	4					
St Margaret's Academy	West Lothian					5	4

Further Education

Centre	Local Authority	2	3	4	4	5	6
Dundee and Angus College	Dundee						6
West College Scotland	Inverclyde					4	

Community Learning and Development

Centre	Local Authority	2	3	4	4	5	6
North Ayrshire Council - Family Learning	North Ayrshire	122	13				
11th Wishaw Rainbow & Brownie Unit	North Lanarkshire	14					
North Lanarkshire Council - Virtual School	North Lanarkshire	2			1		
Field Studies Council	National	22					