

Professional Learning in STEM

Findings from the Annual STEM Provider Data Gathering 2019/20

October 2021

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Executive summary

Introduction

This report presents the key findings from Education Scotland's Annual STEM Provider Data Gathering Exercise covering academic year 2019/20.

As with many activities, Education Scotland's annual STEM data gathering exercise was affected by the COVID pandemic. Education Scotland took the decision early in the pandemic not to issue the STEM practitioner surveys for 2019/20 covering early learning and childcare, ASN, primary, secondary and community learning and development sectors, as well as school-based technical support staff. This was in recognition of the great disruption to education and the pressures on educators to adapt to online and remote teaching.

However, we were aware that quite a number of providers of STEM professional learning had continued to gather professional learning data over academic year 2019/20 and were keen to share it. It was also clear that providers had transformed their approaches to professional learning in light of the pandemic and, in many cases, were experiencing encouraging demand. Education Scotland, therefore, decided to gather data from STEM professional learning providers as far as was reasonable, and as far as the capacity and contexts of providers allowed. The provider data in 2019/20 also includes returns from settings and organisations receiving *Enhancing Professional Learning in STEM* grant funding from Education Scotland. This is one of the reasons the number of returns is greater than that received in 2017/18 and 2018/19. The provider data covers the period from 01 August 2019 to 31 July 2020 and so provides a useful snapshot of provision of STEM professional learning over the academic year leading up to and including the pandemic.

Education Scotland has continued to gather and analyse data relating to STEM career-long professional learning (CLPL) provision within Scotland since 2016/17 to inform and support the ongoing implementation of the STEM Education and Training Strategy (2017)¹.

The findings from the surveys² provide valuable insights into the professional learning needs of practitioners; the challenges they face in accessing professional learning and their professional learning priorities. The survey findings have been used by Education Scotland to help shape the national professional learning offer, including the projects supported through the Enhancing Professional Learning in STEM Grants Programme. A wide range of partner organisations have also used the survey findings to help them align their professional learning programmes and strategies to the needs of practitioners.

Education Scotland will continue to measure progress against the following STEM Strategy key performance indicator:

¹ STEM Education and Training Strategy: <http://bit.ly/STEMstrategy>

² Education Scotland's STEM Summary page on the NIH: <https://education.gov.scot/improvement/learning-resources/a-summary-of-stem-resources/>

³ First Annual Report of the STEM Education and Training Strategy: <https://www.gov.scot/publications/stem-strategy-education-training-scotland-first-annual-report/>

⁴ Second Annual Report of the STEM Education and Training Strategy: <https://www.gov.scot/publications/stem-strategy-education-training-scotland-second-annual-report/>

⁵ Third Annual Report of the STEM Education and Training Strategy: <https://www.gov.scot/publications/stem-strategy-education-training-scotland-third-annual-report/>

Increased practitioner confidence in STEM learning in the early years, primary years and in community learning and development (CLD) settings and increased practitioner engagement in STEM professional learning opportunities.

- *Increase the cumulative hours of STEM professional learning accessed by early years, schools and CLD practitioners annually.*

Progress against this key performance indicator, and others, are reported on annually with detailed findings available through the First STEM Strategy Annual Report³ and Second STEM Strategy Annual Report⁴. An abbreviated Third STEM Strategy Annual Report⁵ has also been published.

Education Scotland will issue the annual STEM practitioner surveys for 2020/21 by November 2021. We will also launch a new STEM data gathering exercise in the same timeframe. This will provide valuable data as we move into the last year of the current STEM Education and Training Strategy and reflect on progress made since the Strategy was launched in 2017.

Key findings

Number of responses – The number of provider responses increased by 84.2% from 57 responses in 2018/19 to 105 responses in 2019/20. 82 out of the 105 responses were from unique providers.

STEM CLPL hours delivered – The total number of cumulative hours of professional learning provided by the 82 respondents between 1 August 2019 and 31 July 2020 was 149,968 cumulative hours. This compares with 130,145 cumulative hours in 2018/19. This is an increase of 15.2%.

Attendee numbers per sector – The top three sectors per attendee number at STEM CLPL sessions:

- Primary 37.5% (15,146 attendees)
- Unknown 30.9% (12,517 attendees)
- Secondary 16.4% (6,620 attendees)

The total number of attendees at STEM CLPL sessions in 2019/20 was 40,436. This compares with 42,647 attendees in 2018/19.

Number of STEM CLPL sessions delivered – The total number of STEM CLPL sessions provided in 2019/20 was 2377. This compares with 1297 sessions delivered in 2018/19.

Types of organisations providing STEM CLPL – The top three types of organisations providing STEM CLPL in 2019/20 were:

- Local authority 51.3% (76,938 hours)
- National organisation 34.0% (50,954 hours)
- Individual setting or cluster 6.1% (9,094 hours)

Sectors accessing STEM CLPL – The top three sectors accessing STEM CLPL were:

- Primary 47.9% (71,804 hours)
- Secondary 20.6% (30,900 hours)
- Unknown 13.0% (19,518 hours)

Theme of STEM CLPL provided – The top three aspects of STEM CLPL hours provided were:

- Sciences 27.1%
- Mathematics 20.7%
- Technologies 17.8%

Geographical analysis – The number of STEM CLPL hours delivered and attendees per Regional Improvement Collaborative (RIC).

RIC	2018/19 Number of attendees	2018/19 Number of STEM CLPL hours	2019/20 Number of attendees	2019/20 Number of STEM CLPL hours
FVWL	5,681	14,366	2,455	7,209
Independent	1,536	5,614	274	1,409
Northern Alliance	5,230	16,366	4,263	13,712
South East	4,440	14,579	4,442	24,515
South West	8,358	18,234	3,920	9,635
Tayside	2,140	5,879	1,636	4,570
Unknown	8,197	26,095	12,517	47,399
West Partnership	7,065	29,012	10,929	41,519
Total	42,647	130,145	40,436	149,968

Table 1: Number of STEM CLPL hours and attendees per RIC for 2018/19 & 2019/20

Annual STEM Provider Data Gathering 2019/2020 Findings

About the data gathering exercise

Background

The purpose of the Annual STEM Provider Data Gathering Exercise is to track the provision of STEM career-long professional learning (CLPL) to the following groups and sectors:

- Early learning and childcare (ELC) practitioners
- Primary school practitioners
- Additional support needs practitioners
- Classroom assistants
- Secondary school practitioners
- School-based technical support staff
- College/FE practitioners
- Community learning and development (CLD) practitioners.

Why did we ask for this data?

A key commitment in the STEM Education and Training Strategy is to enhance the provision of professional learning in STEM. As we progress with our plans, we want to be sure that practitioners have appropriate access to high-quality professional learning that meets their needs. We also need to ensure that there is an equity of provision across all sectors, geographical areas and work patterns and that the priorities of various groups and sectors are being met. This data will help us to allocate resources to where they are needed most to address gaps and imbalances.

Structure and purpose

This provider data was predominantly gathered through an Excel Tracker document that was distributed to a range of STEM providers in October 2020. It was promoted to contacts in the following organisations: local authorities, college STEM hubs, higher education, science centre and festival contacts, third sector partners, learned societies and a range of STEM provider organisations. The data gathering was promoted via email and other communication channels including Education Scotland's STEM bulletin, STEM Blog and through Twitter. Providers were asked to provide their retrospective data for the STEM CLPL they delivered between 1 August 2018 and 31 July 2019.

The data gathering findings have played, and will continue to play, a crucial role in shaping the implementation of the CLPL actions in the STEM Education and Training Strategy (<http://bit.ly/STEMstrategy>).

The findings directly influenced the framing of the Enhancing Professional Learning in STEM Grants Programme across three rounds of funding:

Round 1 (2018/20) – £758,662 awarded to 24 professional learning programmes

Round 2 (2019/21) – £2.26 million allocated to 140 professional learning programmes

Round 3 (2021/22) – £435K allocated to 84 professional learning programmes.

This provider report highlights priority areas for action and gaps that need to be addressed. The evidence provided by the data gathering is also directly informing the work and CLPL offer of Education Scotland's regional teams. These teams are playing an important role in supporting and coordinating professional learning in STEM.

Number of returns

2017/18 Provider CLPL survey	44 data returns
2018/19 Provider CLPL survey	57 data returns
2019/20 Provider CLPL survey	105 data returns

Table 2: Number of returns for the 2017/18, 2018/19 and 2019/20 annual data gathering exercises

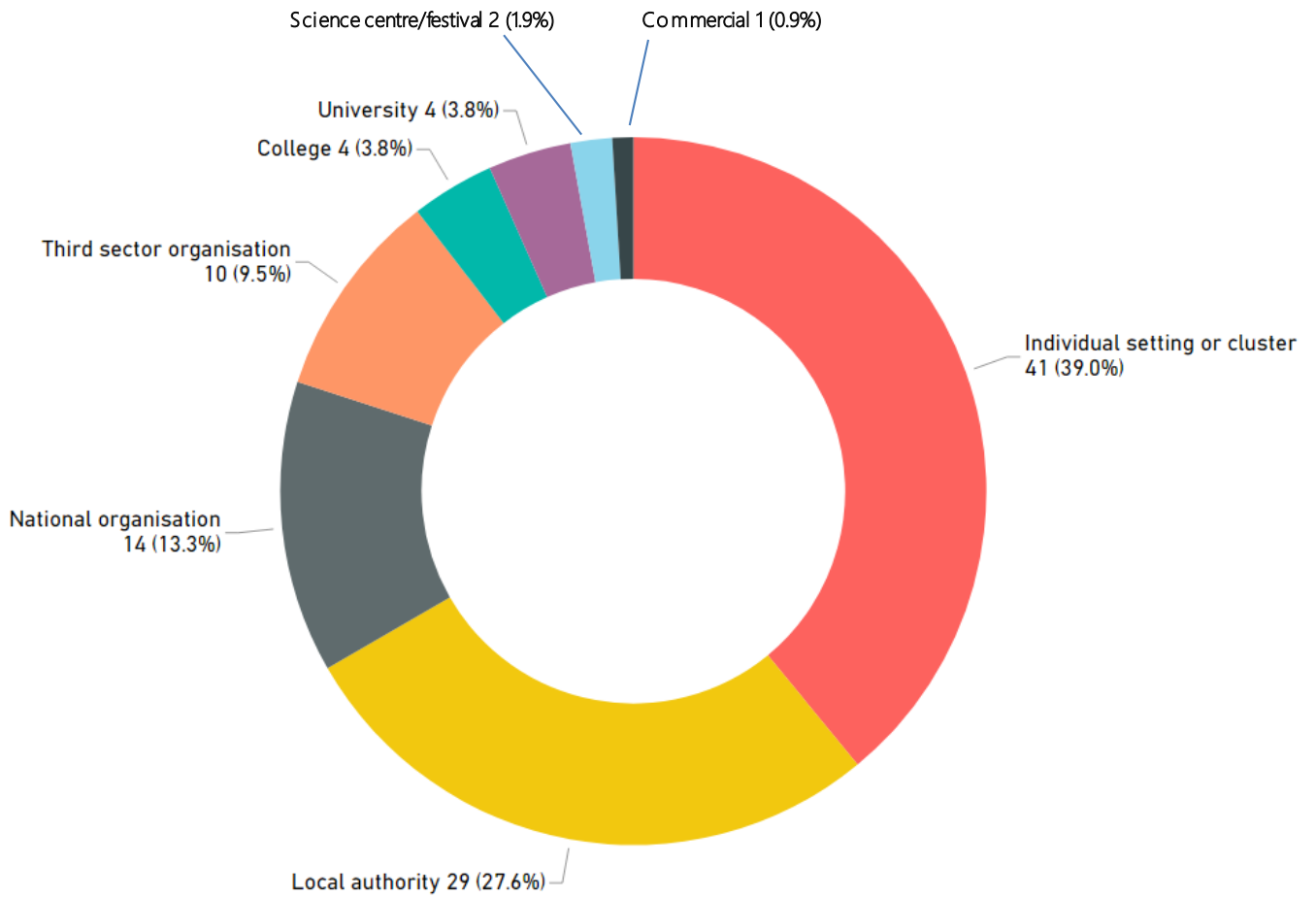


Figure 1: Breakdown of 2019/20 data returns by organisation type

The number of STEM provider data returns increased from 44 responses in 2017/18 to 105 responses in 2019/20. This includes returns from 82 unique providers.

Number of cumulative hours of STEM CLPL accessed

The **total number of cumulative hours** of STEM CLPL delivered between 1 August 2019 and 31 July 2020 was 149,968 hours.

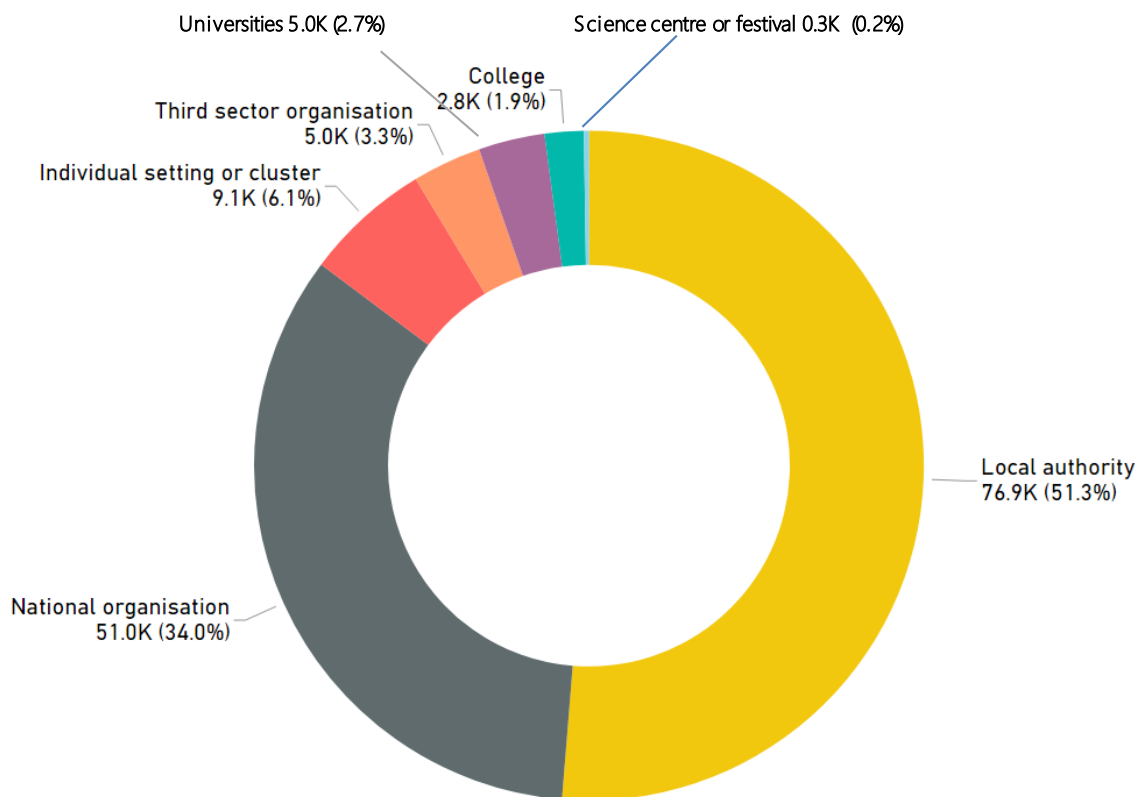


Figure 2: Number of cumulative hours of STEM CLPL in 2019/20 by organisation type

Type of organisation	Total cumulative hours of STEM CLPL delivered
College	2,824
Commercial	2
Individual setting or cluster	9,094
Local authority	76,938
National organisation	50,954
Science centre or festival	362
Third sector organisation	5,005
University	4,789
Total	149,968

Table 3: Number of CLPL hours delivered in 2019/20 by organisation type

Hours of STEM CLPL provided per sector

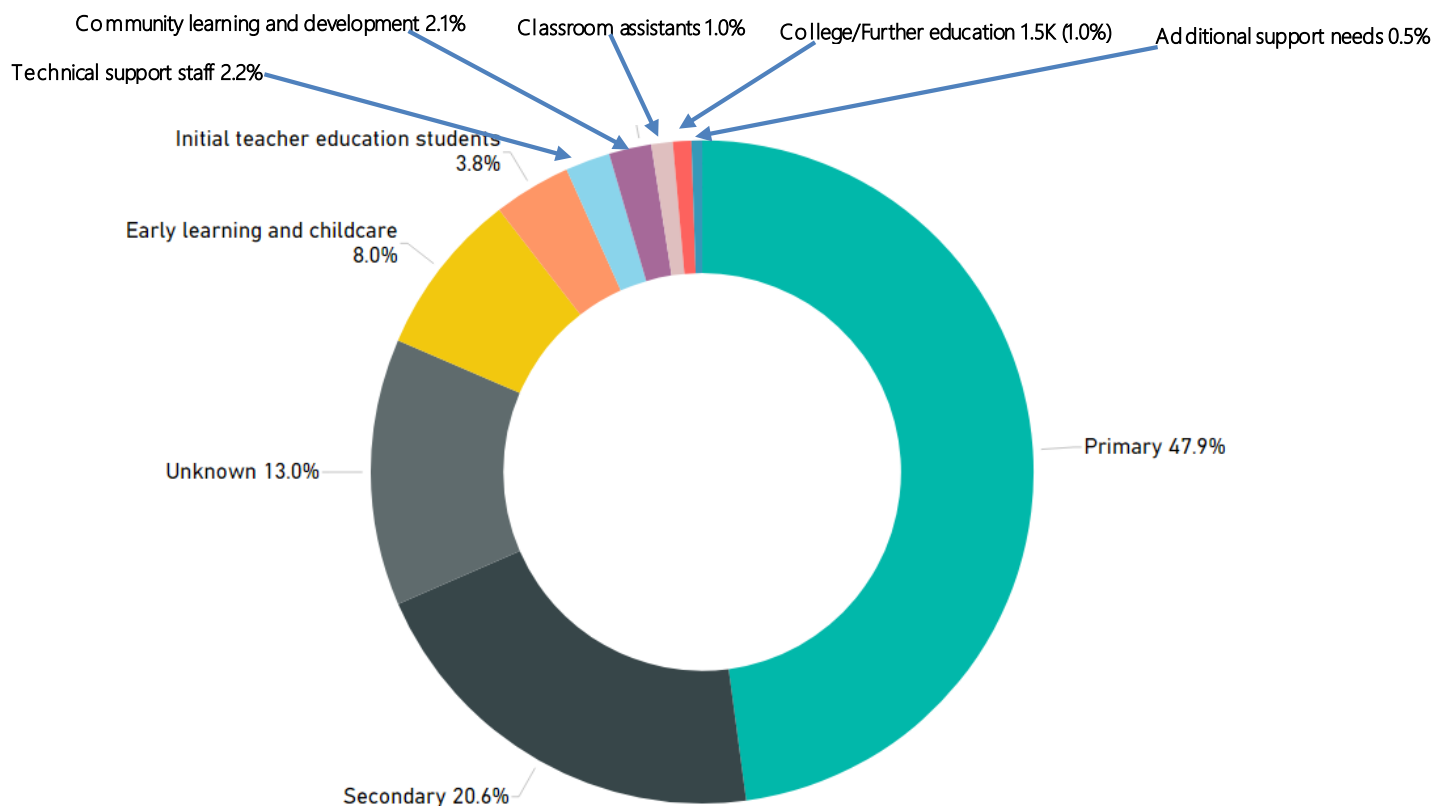


Figure 3: % breakdown of hours of STEM CLPL 2019/20 delivered by sector

Sector	Cumulative hours
Additional support needs (school sector)	779
Classroom assistants (school sector)	1,567
College/Further education	1,347
Community learning and development	3,099
Early learning and childcare	12,007
Initial teacher education students	5,671
Primary	71,804
Secondary	30,900
Technical support staff (school sector)	3,275
Unknown	19,518
Total	149,968

Table 4: Number of STEM CLPL hours 2019/20 delivered by sector

13% of STEM CLPL provided in 2019/20 has been labelled as “Unknown sector”. This is because sectoral data is not always gathered from attendees attending professional learning sessions. Capturing this data may also have been more challenging in 2020 due to the pandemic and the rapid shift to new online approaches to delivering professional learning.

Target sector	2017/18 Total cumulative hours	2018/19 Total cumulative hours	2019/20 Total cumulative hours	% increase/decrease from 2018/19
Additional support needs (school sector)	696	547	799	increase of 42.4%
Classroom assistants (school sector)	734	342	1,567	increase of 358.2%
College/Further education	11,552	7,100	1,347	decrease of 81%
Community learning and development	404	3,486	3,099	decrease of 11.1%
Early learning and childcare	8,883	5,622	12,007	increase of 113.6%
Initial teacher education students	3,722	3,645	5,671	increase of 55.6%
Primary	50,897	57,009	71,804	increase of 25.9%
Secondary	29,606	42,447	30,880	decrease of 27.3%
Technical support staff (school sector)	3,475	4,512	3,275	decrease of 27.4%
Unknown	0	5,436	19,518	increase of 259.1%
Total	109,969	130,145	149,968	

Table 5: Hours of STEM CLPL 2017/18, 2018/19 & 2019/20 delivered by sector

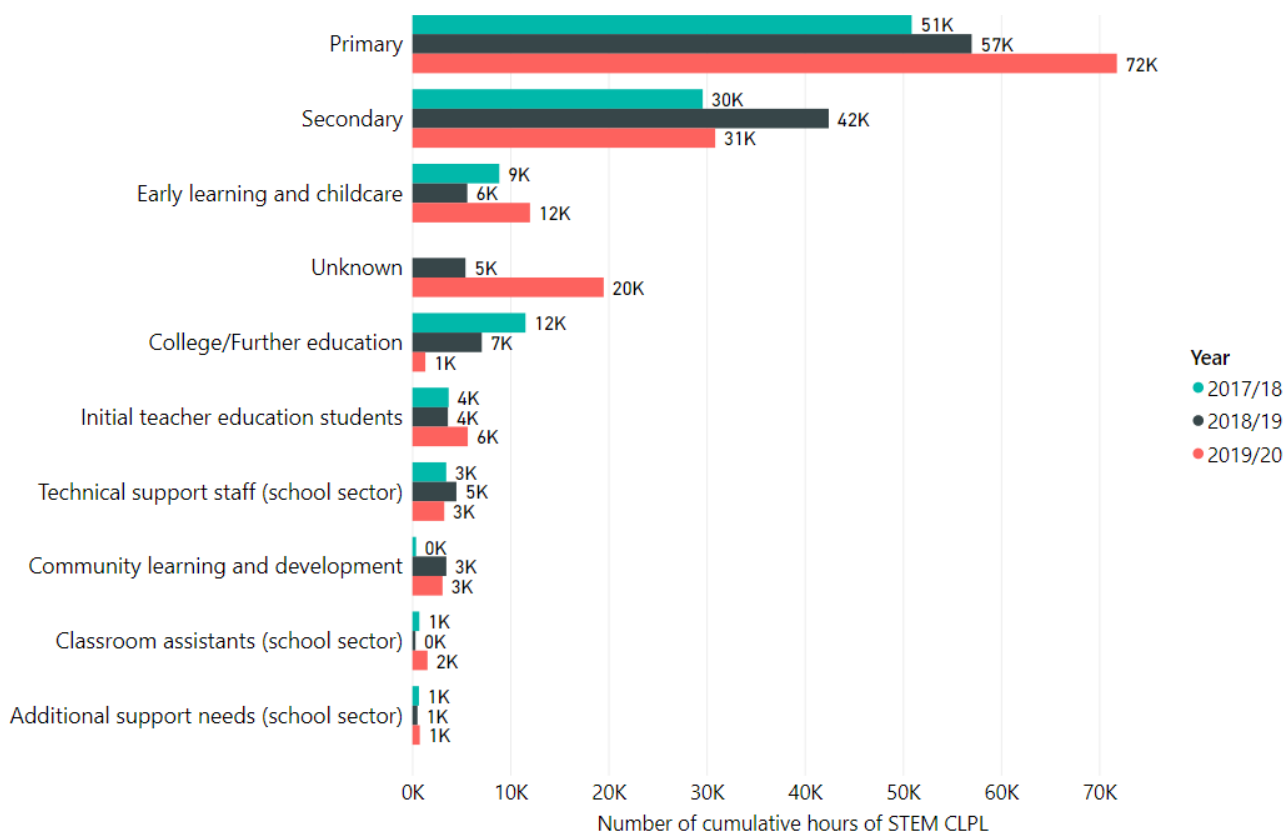


Figure 4: Hours of STEM CLPL delivered in 2017/18, 2018/19 & 2019/20 by sector

The increase in professional learning provision in 2029/20 is attributable, in part, to the increasing reach of the Raising Aspirations in Science Education (RAiSE) Programme. The RAiSE Programme is a partnership involving The Wood Foundation, Scottish Government, Education Scotland and participating local authorities. Participating local authorities receive funding to recruit a Primary Science Development Officer to lead and coordinate STEM professional learning across their settings and schools.

Attendees of STEM CLPL

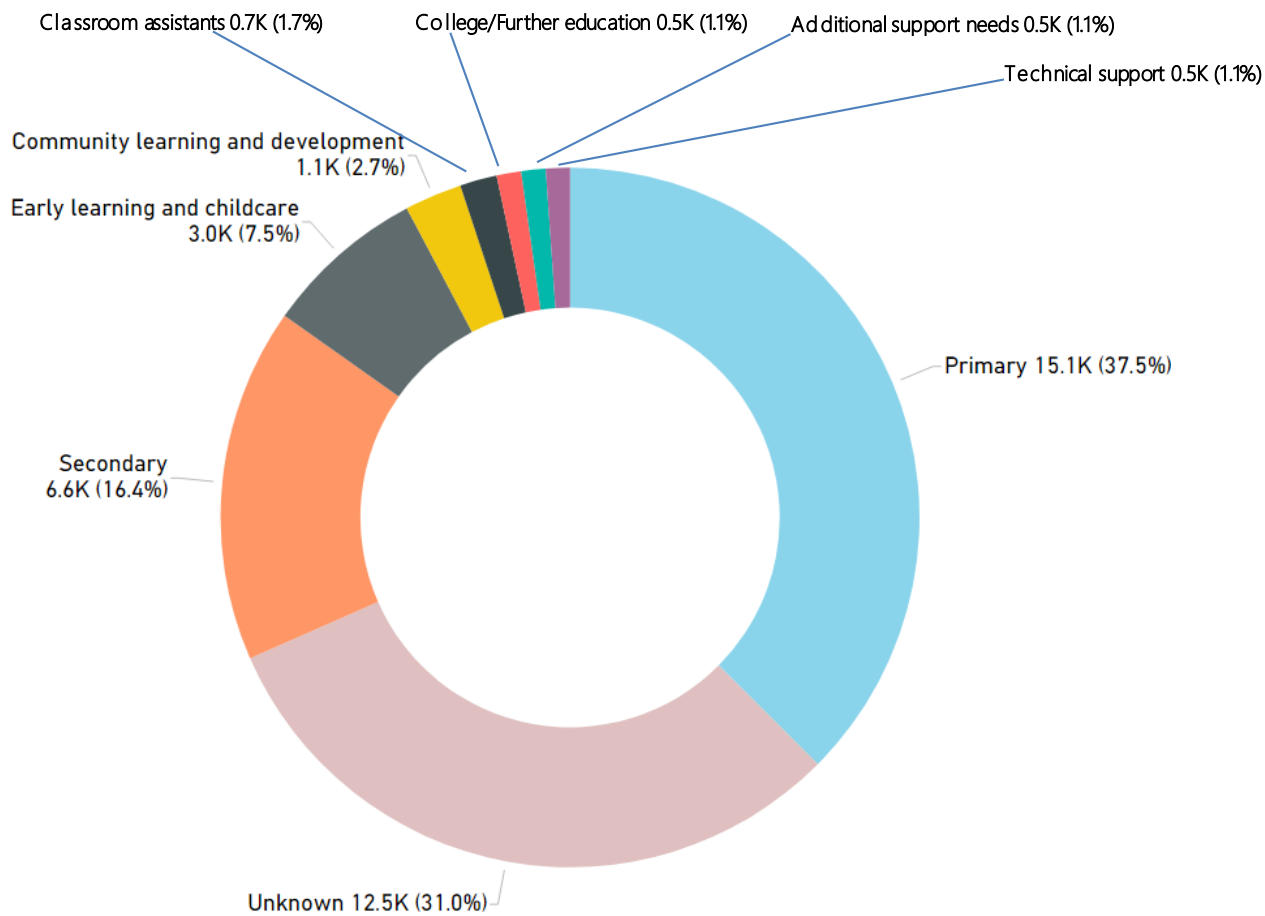


Figure 5 Number of STEM professional learning attendees per sector in 2019/20

Sector	Total attendees
Additional support needs (school sector)	457
Classroom assistants (school sector)	690
College/Further education	460
Community learning and development	1074
Early learning and childcare	3024
Primary	15146
Secondary	6620
Technical support (school sector)	448
Unknown	12517
Total	40436

Table 6: Number of STEM professional learning attendees per sector in 2019/20

Initial Teacher Education students (total of 425 attendees) are included within Secondary sector totals.

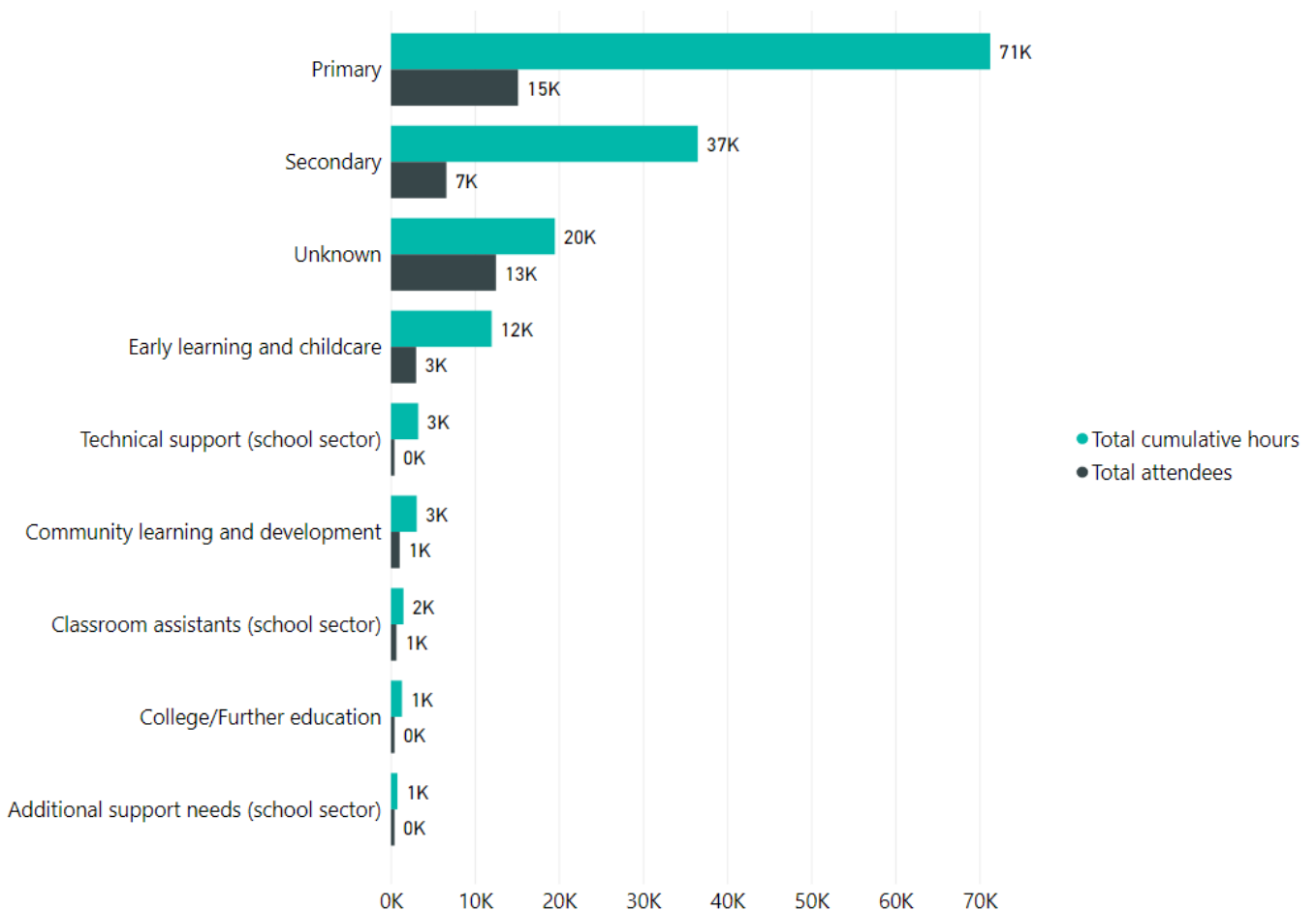


Figure 6: Number of STEM CLPL attendees and cumulative hours per sector in 2019/20

Target sector	2018/19 Attendee numbers	2019/20 Attendee numbers	% increase/decrease from 2018/19
Additional support needs (school sector)	262	457	increase of 74.4%
Classroom assistants (school sector)	75	690	increase of 820%
College/Further education	1410	460	decrease of 67.4%
Community learning and development	1742	1074	decrease of 38.3%
Early learning and childcare	3598	3024	decrease of 15.9%
Primary	20504	15146	decrease of 15.9%
Secondary	12907	6620	decrease of 48.7%
Technical support staff (school sector)	451	448	decrease of 0.7%
Unknown	1698	12517	increase of 637.2%
Total	42647	40436	

Table 7: Number of attendees per sector at STEM CLPL sessions in 2018/2019 and 2019/20

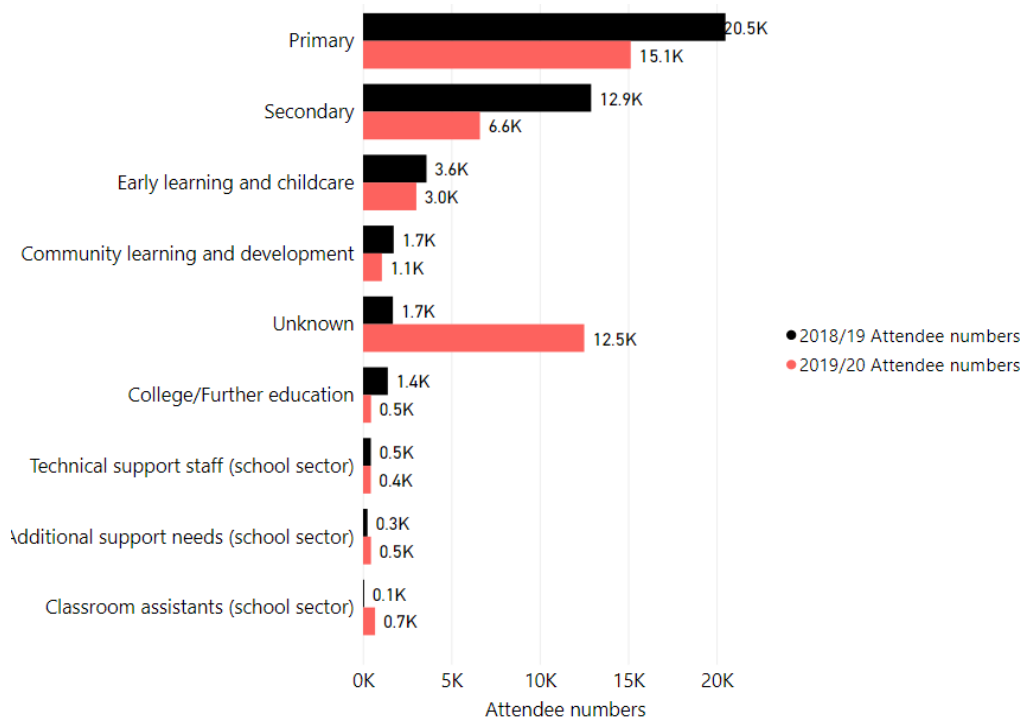


Figure 7: Number of attendees per sector at STEM CLPL sessions in 2018/19 and 2019/20

12.5K of STEM CLPL provided in 2019/20 has been labelled as “Unknown sector”. This is because sectoral data is not always gathered from attendees attending professional learning sessions. Capturing this data may also have been more challenging in 2020 due to the pandemic and the rapid shift to new online approaches to delivering professional learning.

Aspect of STEM CLPL delivered

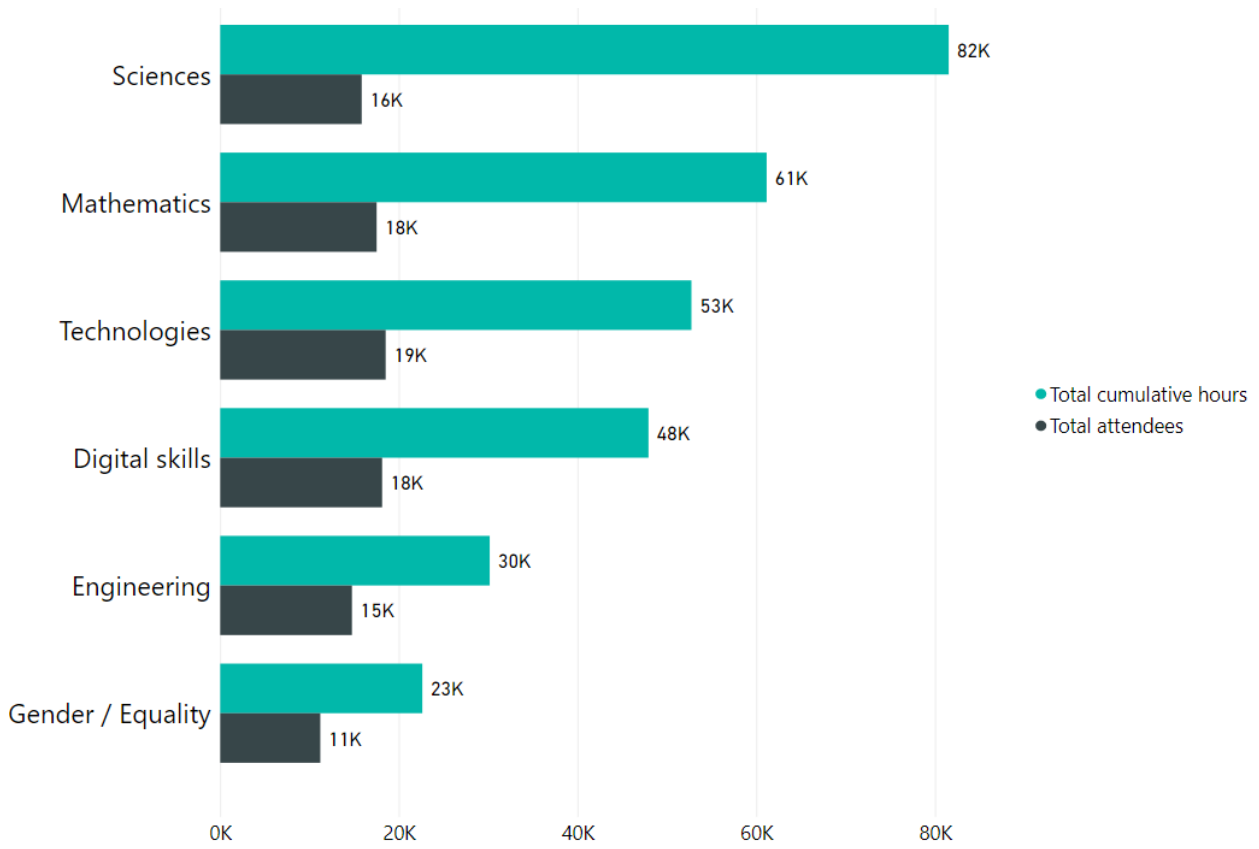


Figure 8: Number of STEM CLPL attendees and cumulative hours by aspect of STEM in 2019/20

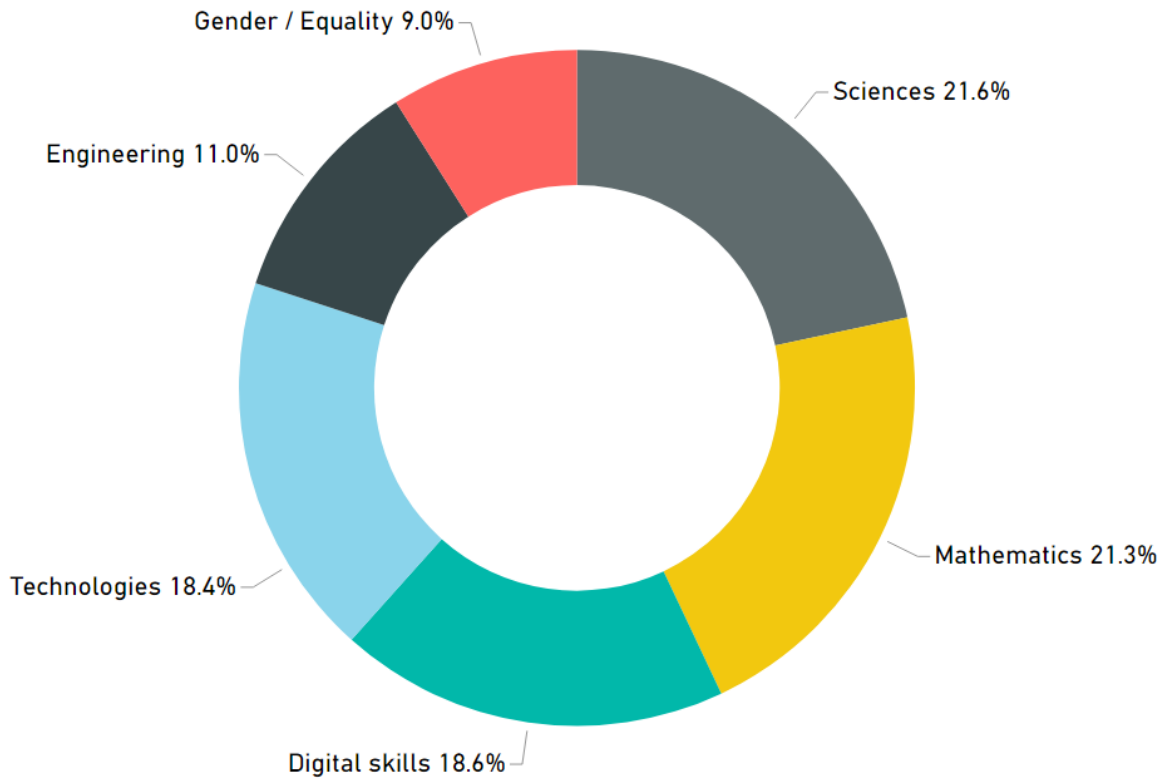


Figure 9: % breakdown of CLPL sessions delivered by aspect of STEM in 2019/20

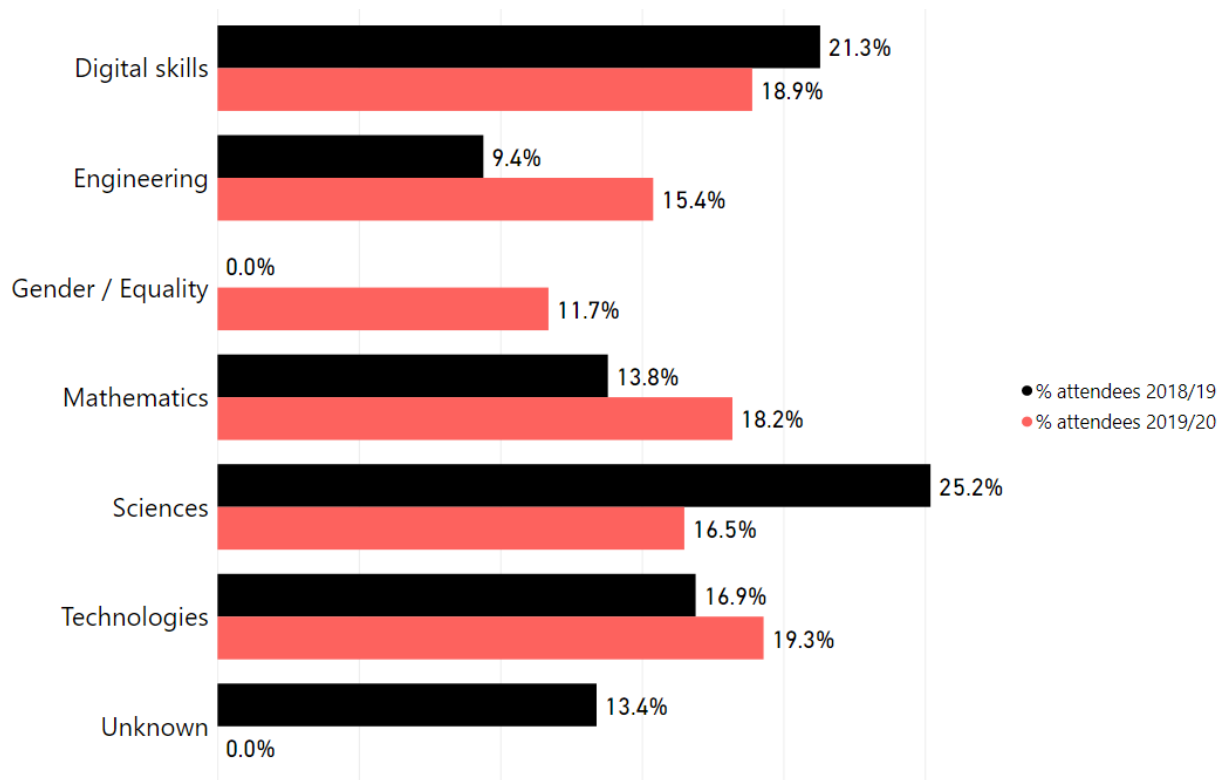


Figure 10: % breakdown of attendees in CLPL sessions by aspect of STEM in 2018/19 & 2019/20

The chart above shows a welcome increase in provision of professional learning for engineering, gender balance, mathematics and also technologies. The increase in these areas may be due, in part, to the fact that they were identified as priority areas for funding in Round 2 of Education Scotland's STEM grants programme. These areas were prioritised in response to the findings from the Annual STEM Practitioner Surveys and to support the implementation of key national policies.

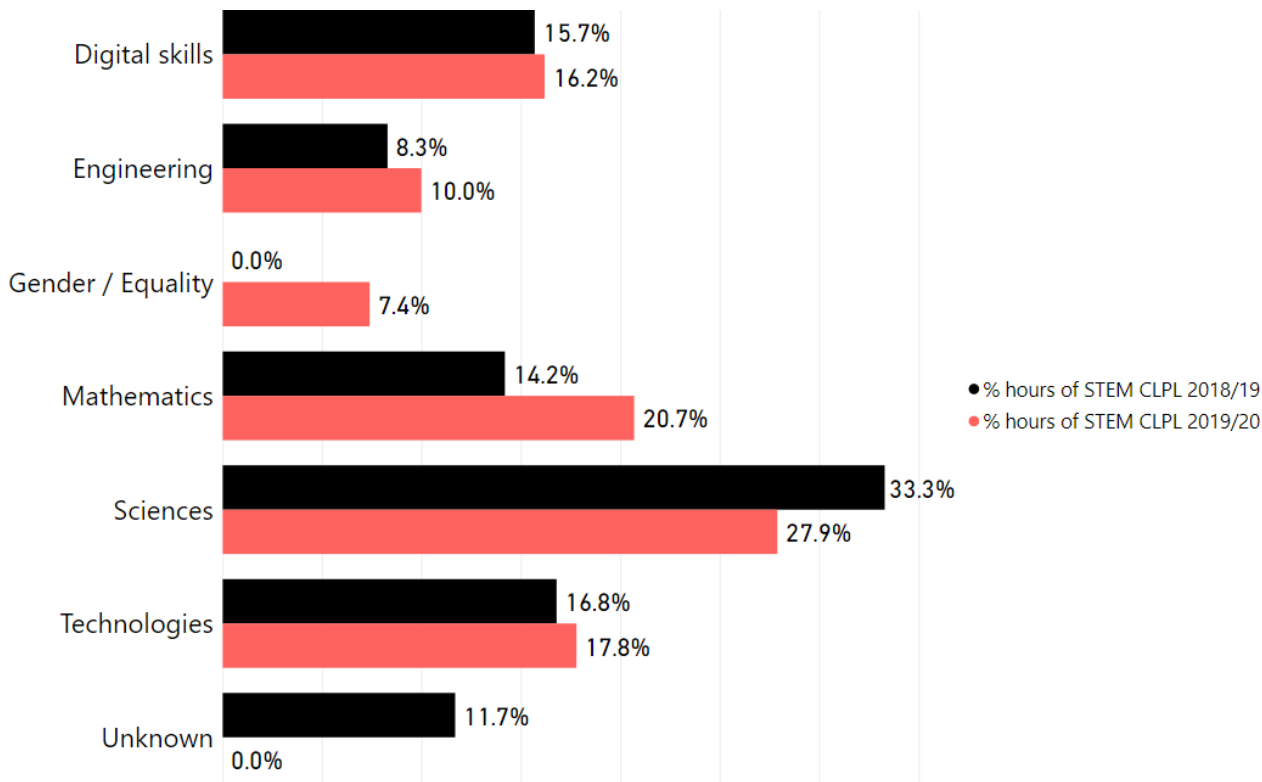


Figure 11: % breakdown of hours of STEM CLPL sessions by aspect of STEM in 2018/19 & 2019/20

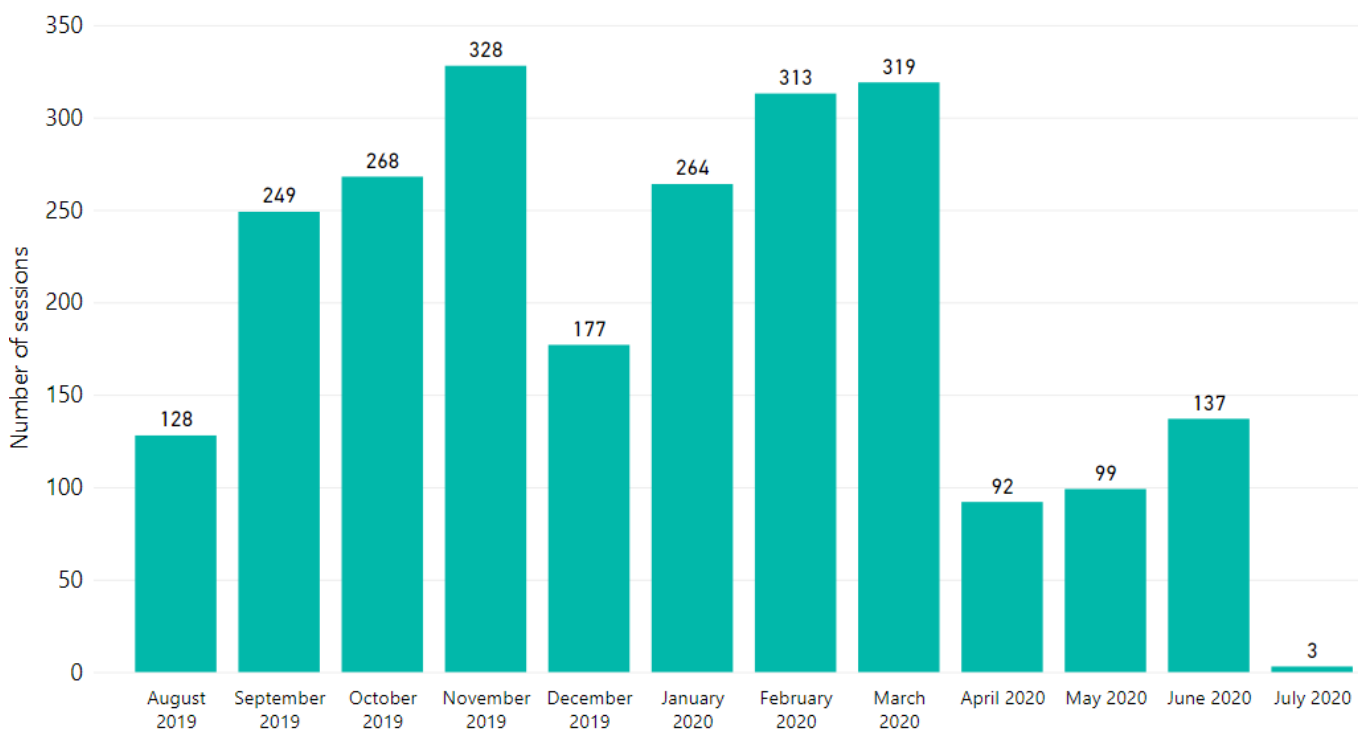


Figure 12: Number of STEM CLPL sessions delivered in 2019/20 by month

Where data has not been available regarding the month in which some STEM professional learning provision has been delivered then the total figure has been averaged across the year.

Geographical analysis

The analysis in this section provides an overview of the geographical spread of professional learning support being provided by external providers within a specific local authority or regional improvement collaborative (RIC) area. The data in this section does not include professional learning hours delivered directly by local authorities themselves.

This analysis includes:

- a percentage breakdown of the total hours of professional learning delivered by external STEM providers to each local authority (early learning and childcare, primary, secondary and ASN sectors only).
- the full-time equivalent number of practitioners in each authority; based on the Scottish Government's [2018 Teacher Census](#) for primary, secondary and ASN teachers, and also the [Early Learning and Childcare Provision in Scotland Census](#) from September 2018.
- the percentage of the national workforce located within each authority (early learning and childcare, primary, secondary and ASN sectors only).
- 2018/19 and 2019/20 analysis includes SQA data.

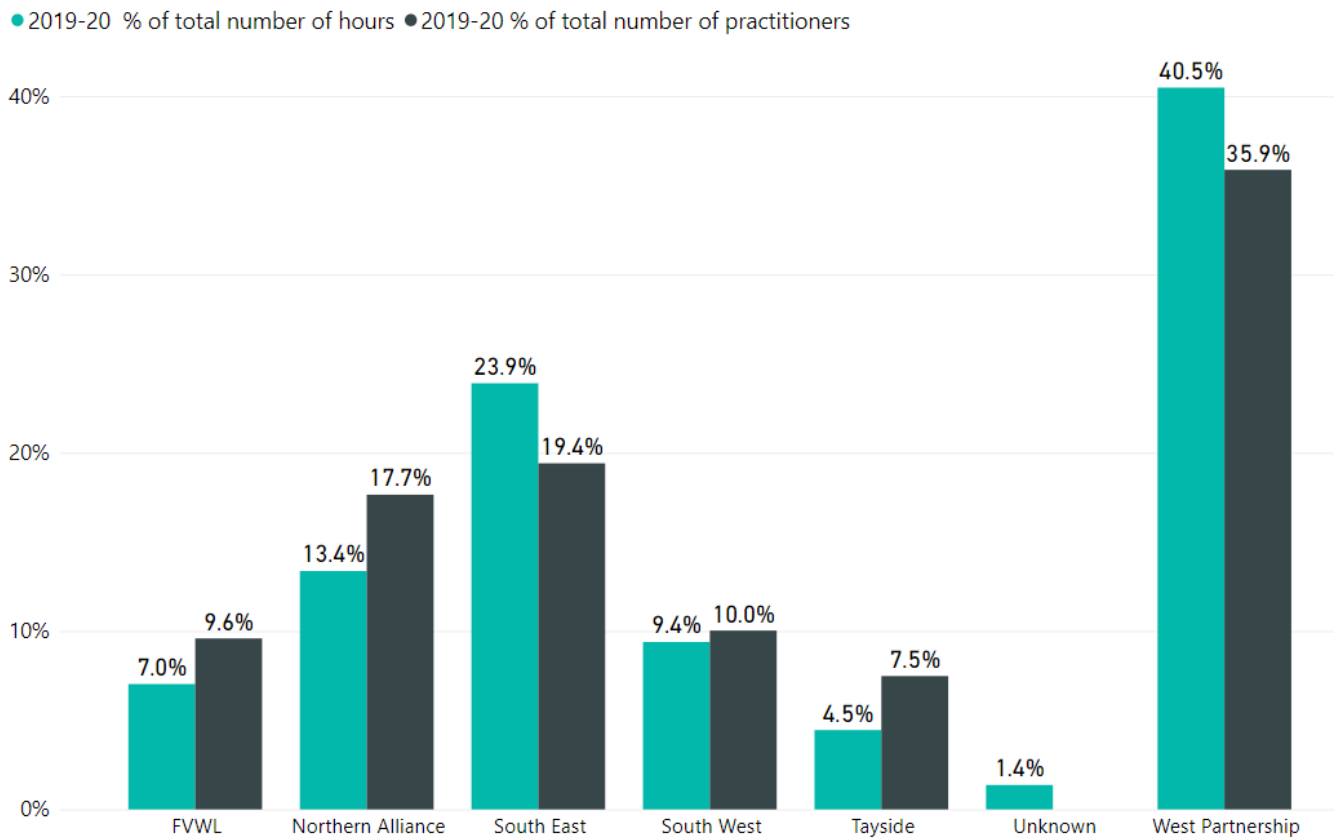


Figure 13: Number of STEM CLPL hours and attendees per RIC in 2019/20

● 2018-19 % of total number of hours ● 2018-19 % of total number of practitioners

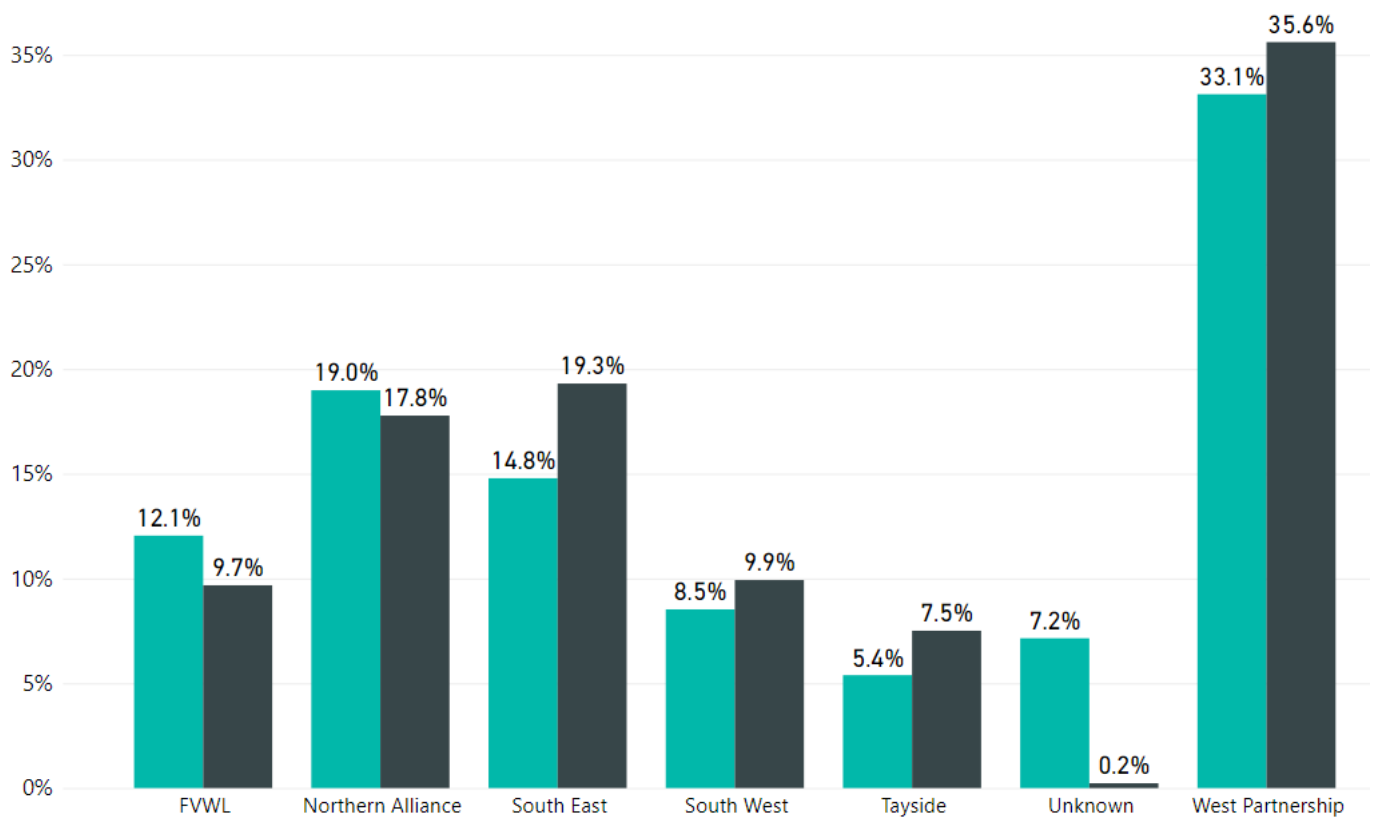


Figure 14: Number of STEM CLPL hours and attendees per RIC in 2018/2019

The following table shows the comparison data of 2017/18, 2018/19 and 2019/20 cumulative hours of STEM CLPL. There is an overall increase in the provision of STEM CLPL recorded by external providers in 2019/20.

Local Authority	RIC	2017-18 Cumulative hours of CLPL	2018-19 Cumulative hours of CLPL	2019-20 Cumulative hours of CLPL	2019-20 Number of attendees	2019-20 Number of sessions	% increase/decrease in cumulative hours of CLPL from 2018/19 to 2019/20
Aberdeen City	Northern Alliance	2146	4,531	3,247	585	10	-28%
Aberdeenshire	Northern Alliance	1257	2,332	2,790	590	6	20%
Angus	Tayside	417	1,229	2,313	833	3	88%
Argyll & Bute	Northern Alliance	507	731	2,384	1168	5	226%
City of Edinburgh	South East	2608	4,495	3,600	806	4	-20%
Clackmannanshire	FVWL	113	498	1,567	891	4	215%
Dumfries & Galloway	South West	887	2,680	5,716	2505	26	113%
Dundee City	Tayside	414	1,513	845	395	9	-44%
East Ayrshire	South West	306	638	378	127	2	-41%
East Dunbartonshire	West Partnership	146	1,207	1,489	436	4	23%
East Lothian	South East	882	1,112	394	69	0	-65%
East Renfrewshire	West Partnership	1173	2,107	1,815	639	9	-14%
Eilean Siar	Northern Alliance	289	726	1,004	194	1	38%
Falkirk	FVWL	1209	3,537	2,341	735	9	-34%
Fife	South East	3540	3,282	1,495	376	3	-54%
Glasgow City	West Partnership	4730	12,102	22,398	4821	11	85%
Independent sector	Unknown	496	5,599	1,409	275	0	-75%
Inverclyde	West Partnership	85	1,242	2,779	1111	1	124%
Midlothian	South East	301	1,912	2,649	864	1	39%
Moray	Northern Alliance	310	1,370	1,571	352	1	15%
North Ayrshire	South West	682	1,550	1,357	660	9	-12%
North Lanarkshire	West Partnership	2522	4,584	2,281	751	4	-50%
Orkney Islands	Northern Alliance	79	954	218	103	0	-77%
Perth & Kinross	Tayside	1279	1,477	1,412	408	1	-4%
Renfrewshire	West Partnership	259	1,838	4,683	1499	1	155%
Scottish Borders	South East	169	781	16,378	2327	7	1998%
Shetland Islands	Northern Alliance	161	293	206	68	0	-30%
South Ayrshire	South West	786	1,808	2,186	628	1	21%
South Lanarkshire	West Partnership	293	1,759	5,511	1507	12	213%
Stirlingshire	FVWL	608	2,977	1,637	381	1	-45%
The Highlands	Northern Alliance	1091	3,932	2,293	1203	2	-42%
West Dunbartonshire	West Partnership	1191	1,092	563	165	3	-48%
West Lothian	FVWL	1177	2,424	1,664	448	6	-31%
Total		32113	78,306	102,569	27920	156	

Table 8: Comparison of number of STEM CLPL hours and attendees by local authority

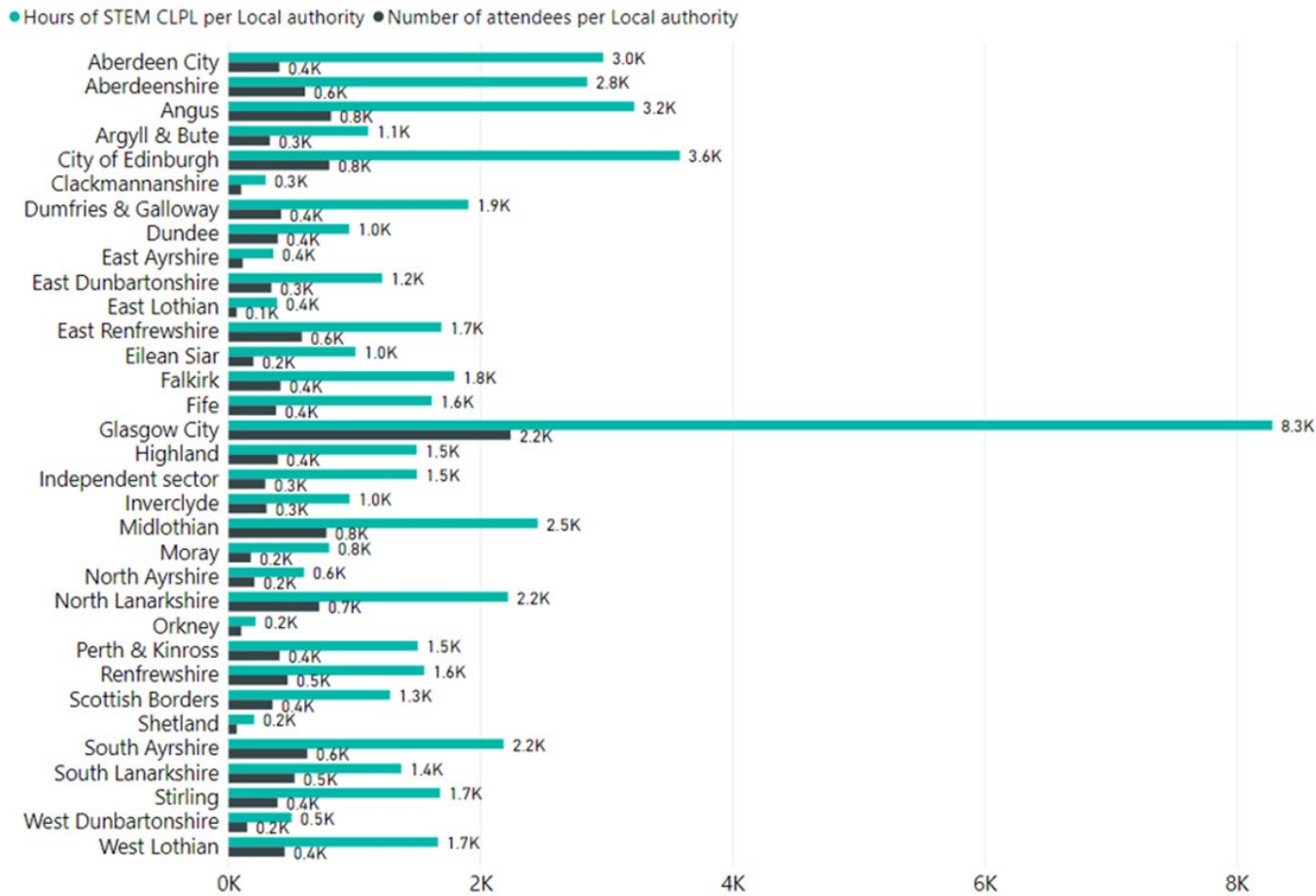


Figure 15: Percentage of hours of STEM CLPL and attendees by local authority for 2019/20

Geographical data – Forth Valley & West Lothian (FVWL)

5,378
Hours of STEM CLPL
1345
Number of attendees
356
Number of sessions

STEM CLPL hours and attendee numbers

Local authority	Hours of STEM CLPL per Local authority	Number of attendees	Number of sessions
Clackmannanshire	297	103	31
Falkirk	1,780	413	151
Stirling	1,637	381	81
West Lothian	1,664	448	93
Total	5,378	1345	356

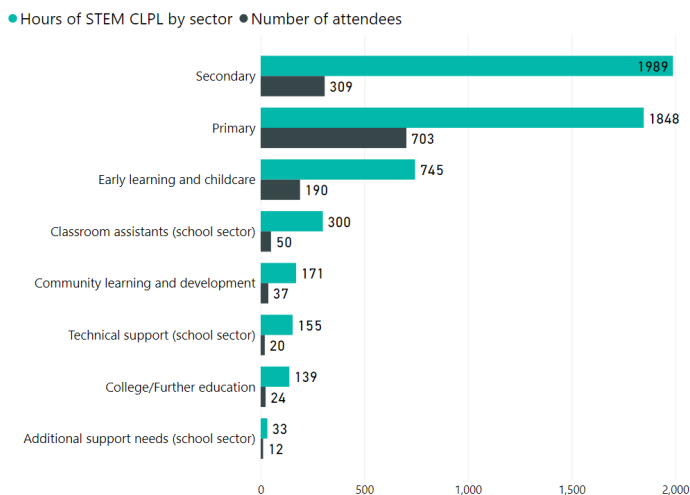


Table 9: Number of STEM CLPL hours and attendees for authorities in FVWL

Figure 16: Number of STEM CLPL hours and attendees by sector in FVWL

STEM CLPL by month and STEM aspect

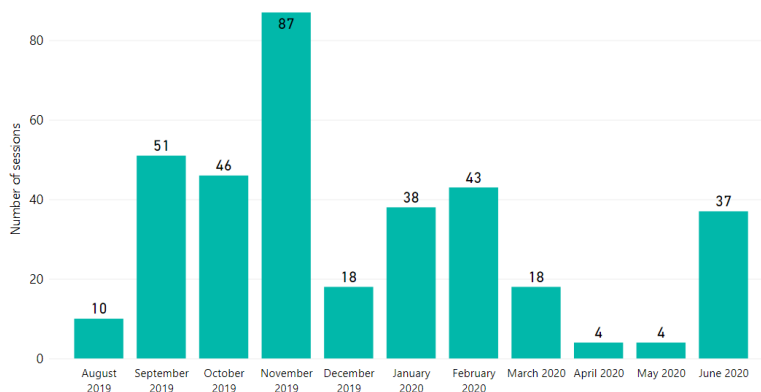


Figure 17: Number of sessions delivered in FVWL by month

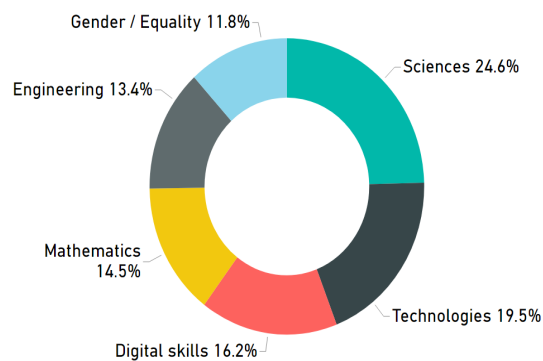


Figure 18: Sessions in FVWL by aspect of STEM

Geographical data – Northern Alliance

10,544

Hours of STEM CLPL

2257

Number of attendees

618

Number of sessions

STEM CLPL hours and attendee numbers

Local authority	Hours of STEM CLPL per Local authority	Number of attendees	Number of sessions
Aberdeen City	2,942	400	76
Aberdeenshire	2,790	590	231
Argyll & Bute	1,110	331	105
Eilean Siar	1,004	194	23
Highland	1,482	392	94
Moray	793	179	52
Orkney	218	103	15
Shetland	206	68	22
Total	10,544	2257	618

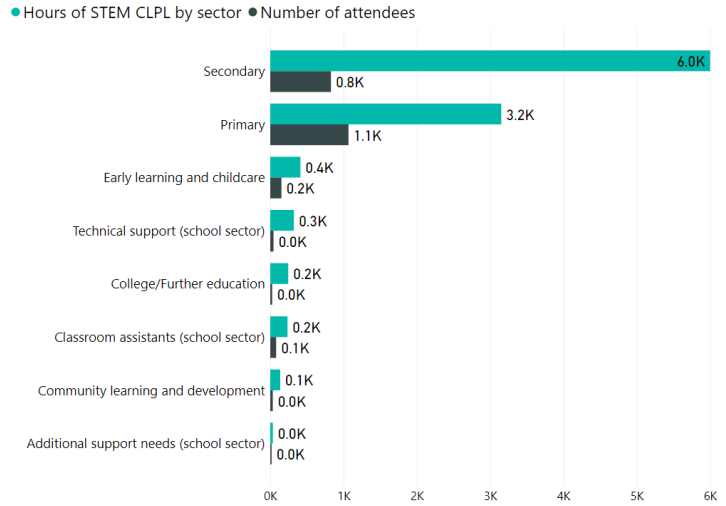


Table 10: Number of STEM CLPL hours and attendees for local authorities in Northern Alliance

Figure 19: Number of STEM CLPL hours and attendees by sector in Northern Alliance

STEM CLPL by month and STEM aspect

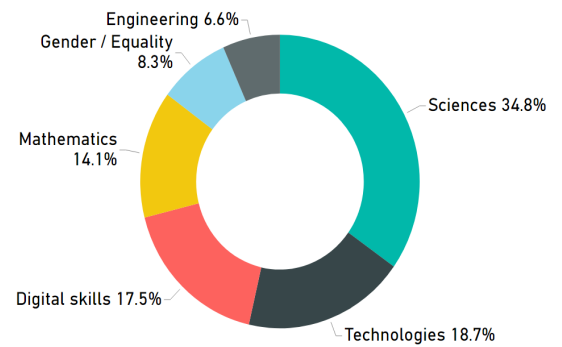
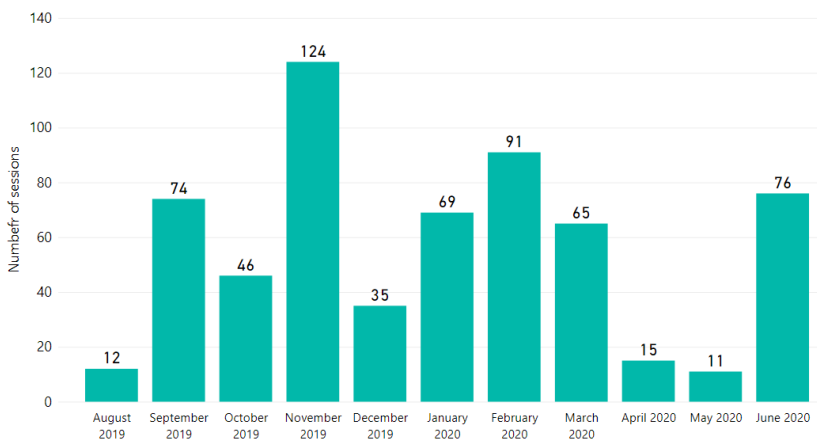


Figure 21: Sessions in Northern Alliance by aspect of STEM

Figure 20: Number of sessions delivered in Northern Alliance by month

Geographical data – South East

9,173

Hours of STEM CLPL

2364

Number of attendees

465

Number of sessions

STEM CLPL hours and attendee numbers

Local authority	Hours of STEM CLPL per Local authority	Number of attendees	Number of sessions
City of Edinburgh	3,576	798	143
East Lothian	388	67	37
Fife	1,495	376	91
Midlothian	2,431	771	73
Scottish Borders	1,283	352	121
Total	9,173	2364	465

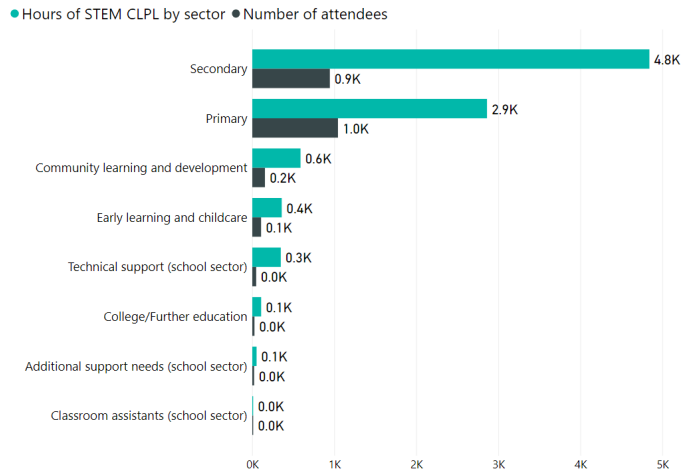


Table 11: Number of STEM CLPL hours and attendees for local authorities in South East

Figure 22: Number of STEM CLPL hours and attendees by sector in South East

STEM CLPL by month and STEM aspect

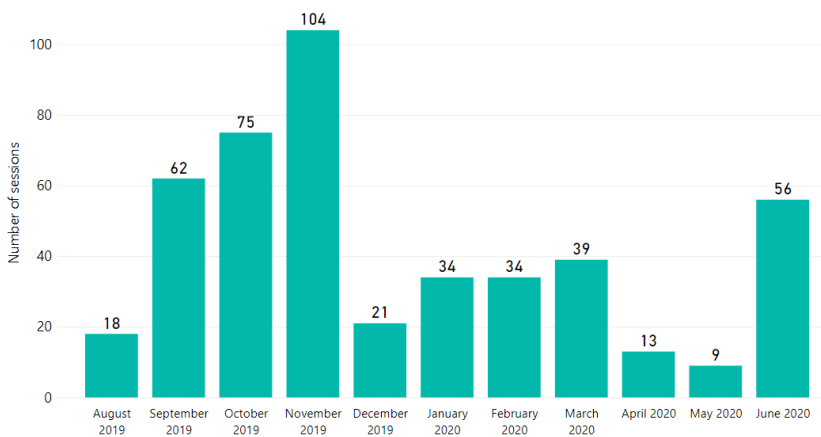


Figure 23: Number of sessions delivered in South East by month

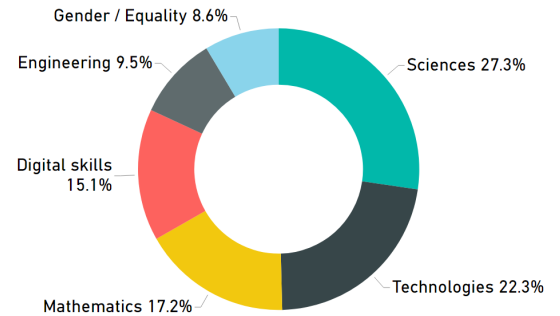


Figure 24: Sessions in South East by aspect of STEM

Geographical data – South West

5,052
Hours of STEM CLPL
1370
Number of attendees
269
Number of sessions

STEM CLPL hours and attendee numbers

Local authority	Hours of STEM CLPL per Local authority	Number of attendees	Number of sessions
Dumfries & Galloway	1,906	419	98
East Ayrshire	358	115	43
North Ayrshire	603	208	64
South Ayrshire	2,186	628	64
Total	5,052	1370	269

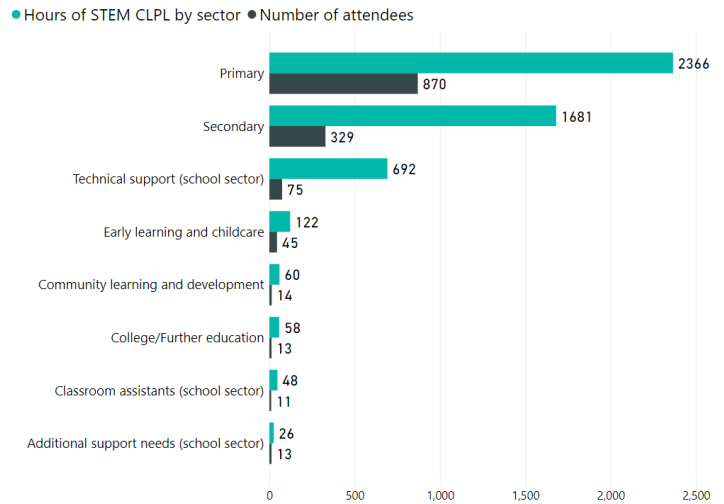


Table 12: Number of STEM CLPL hours and attendees for local authorities in South West

Figure 25: Number of STEM CLPL hours and attendees by sector in South West

STEM CLPL by month and STEM aspect

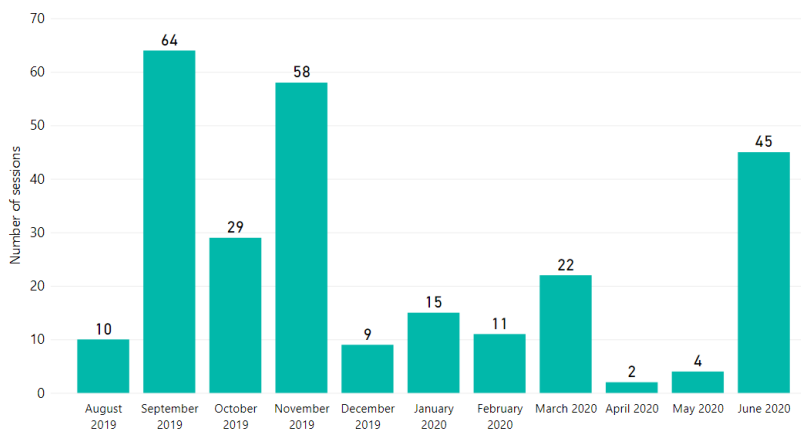


Figure 27: Sessions delivered in South West by month

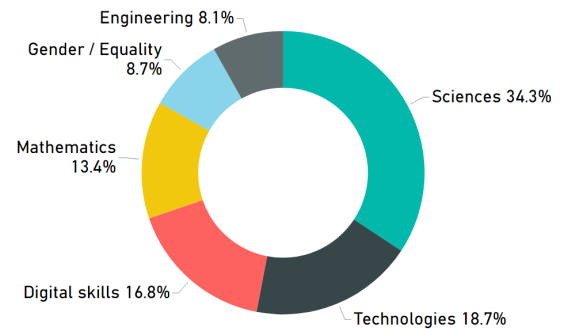


Figure 26: Sessions in South West by aspect of STEM

Geographical data – Tayside

4,372

Hours of STEM CLPL

1498

Number of attendees

399

Number of sessions

STEM CLPL hours and attendee numbers

Local authority	Hours of STEM CLPL per Local authority	Number of attendees	Number of sessions
Angus	2,125	705	207
Dundee	840	390	109
Perth & Kinross	1,407	403	83
Total	4,372	1498	399

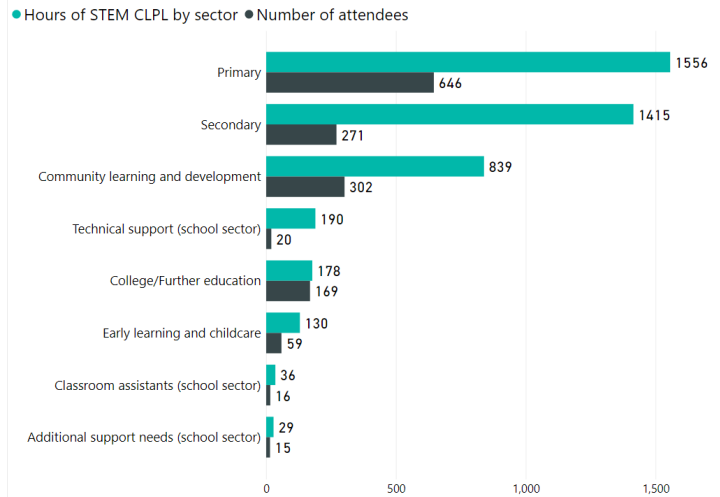


Table 13: Number of STEM CLPL hours and attendees for local authorities in Tayside

Figure 28: Number of STEM CLPL hours and attendees by sector in Tayside

STEM CLPL by month and STEM aspect

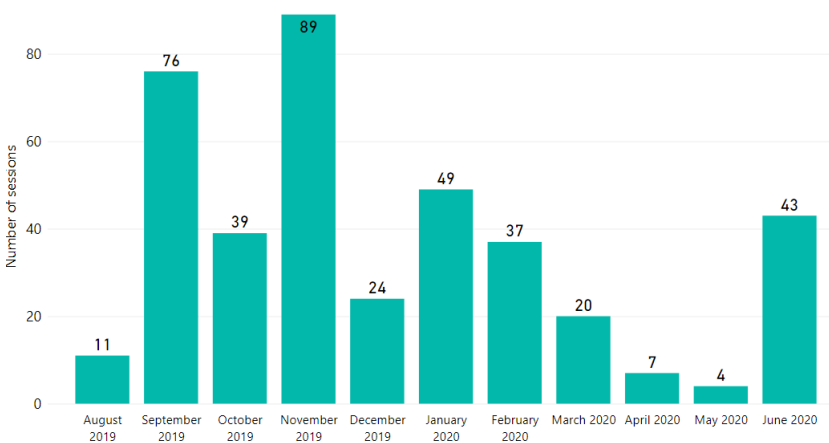


Figure 29: Number of sessions delivered in Tayside by month

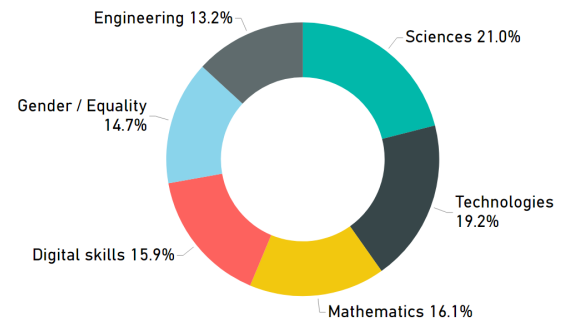


Figure 30: Sessions in Tayside by aspect of STEM

Geographical data – West Partnership

17,635

Hours of STEM CLPL

5324

Number of attendees

858

Number of sessions

STEM CLPL hours and attendee numbers

Local authority	Hours of STEM CLPL per Local authority	Number of attendees	Number of sessions
East Dunbartonshire	1,222	343	73
East Renfrewshire	1,657	557	118
Glasgow City	8,109	2219	250
Inverclyde	963	304	57
North Lanarkshire	2,220	723	129
Renfrewshire	1,555	472	61
South Lanarkshire	1,406	555	118
West Dunbartonshire	504	151	52
Total	17,635	5324	858

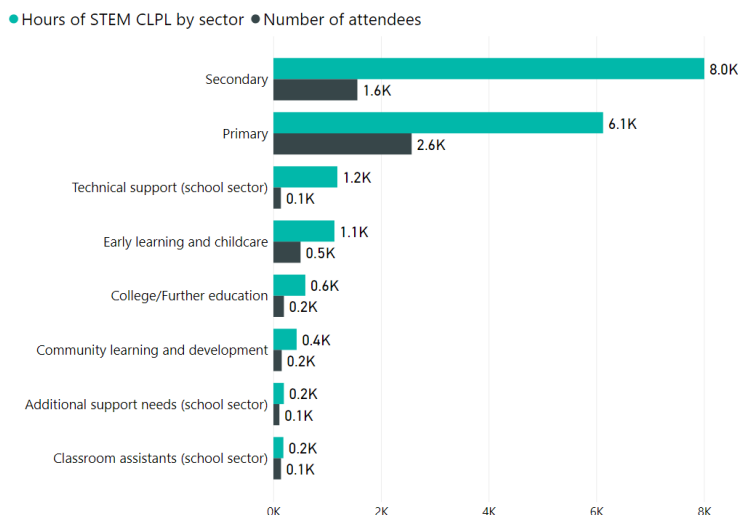


Table 14: Number of STEM CLPL hours and attendees for local authorities in West Partnership

Figure 31: Number of STEM CLPL hours and attendees by sector in West Partnership

STEM CLPL by month and STEM aspect

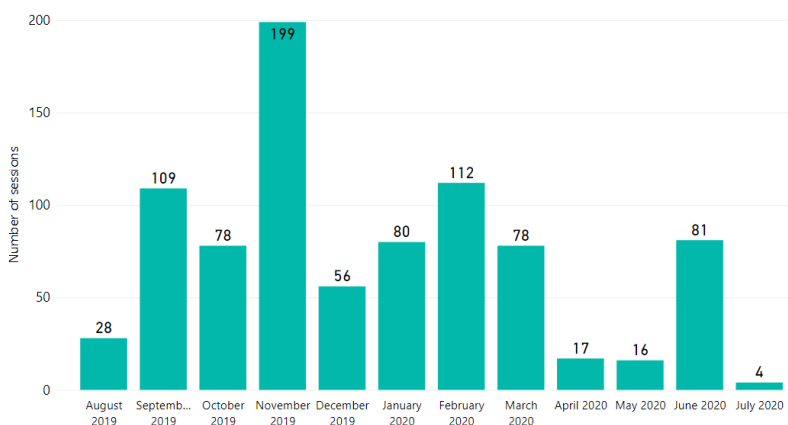


Figure 32: Number of sessions in West Partnership by month

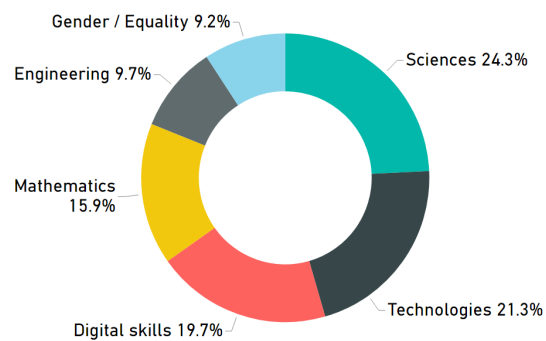


Figure 33: Sessions in West Partnership by STEM aspect

Geographical data – Independent sector

1,409
Hours of STEM CLPL
275
Number of attendees
82
Number of sessions

STEM CLPL hours and attendee numbers

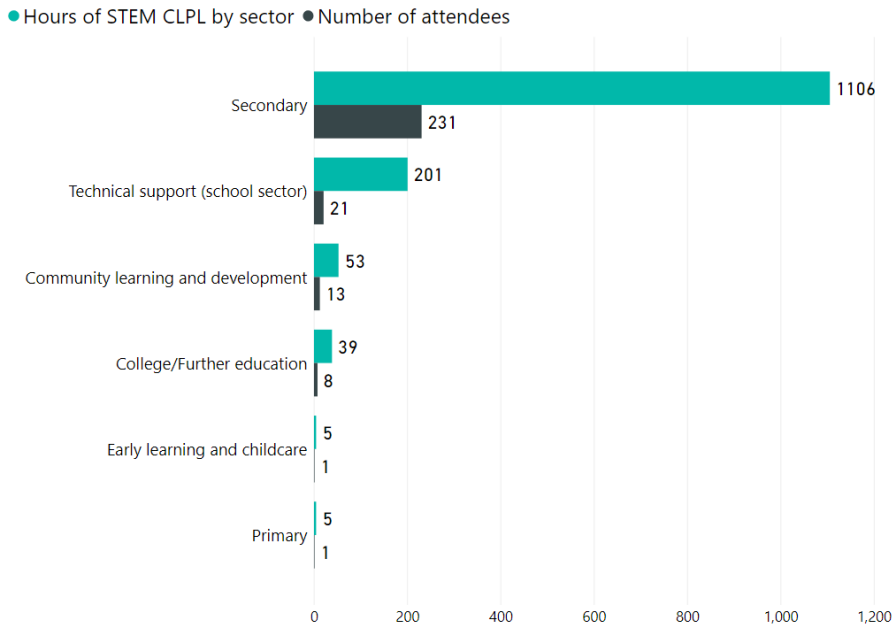


Figure 34: Number of attendees at STEM CLP sessions for the independent sector

STEM CLPL by month and STEM aspect

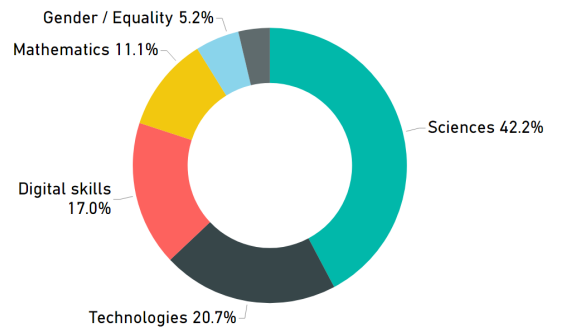
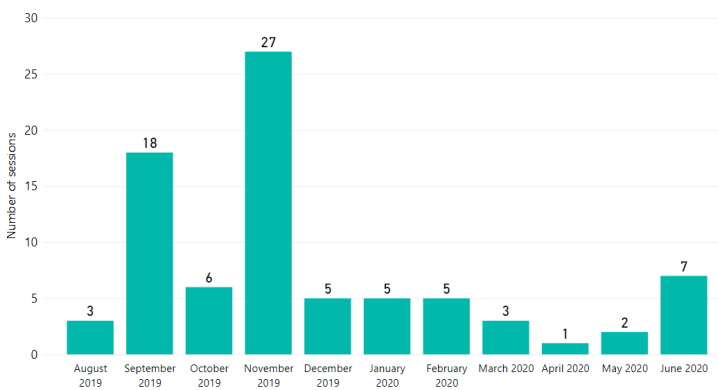


Figure 35: Sessions delivered in independent sector by month

Figure 36: Sessions delivered in independent sector by STEM aspect

Education Scotland response

Academic year 2019/2020 marked the third year of implementation of the STEM Education and Training Strategy. In relation to Education Scotland's work, the focus for this period has been to continue to put in place the key national infrastructure and resources to address the priorities and needs identified by practitioners.

Engaging with partners – Education Scotland has disseminated the findings from the 2019/2020 Annual STEM Practitioner Survey and Data Gathering Exercise to a wide range of partners and STEM providers. This has helped many organisations to plan and shape their professional learning offers to align more closely to the needs of practitioners and to address gaps in provision.

Enhancing Professional Learning in STEM Grants Programme – Education Scotland awarded a total of £1.9 million of STEM professional learning grants in financial year 2019-20, supporting 162 Round 1 and Round 2 projects. Over 11,498 practitioners from more than 1,138 settings, and 4,196 childminders, benefitted from this funding in Round 2 Phase 1 alone. This funding was aligned to the priorities and findings from the annual STEM practitioner surveys. For example, through the STEM grants we continued to invest in online learning and projects which build opportunities for leadership and collegiate professional learning at a school/setting/cluster level.

Online professional learning opportunities available for practitioners as a result of the grants include:

- University of Aberdeen – [Biology: Online STEM Training for Teachers](#)
- Larbert High School – [STEM Family Learning Programme](#)
- Royal Highland Education Trust – [Food, STEM and Sustainability: From farm to fork](#)
- Clackmannanshire Council – [Numeracy Champions Collaborative in Clackmannanshire](#)
- SWGfL – [Safe and Empowered: Responding to a Digital Generation](#)

Round 2 Grants projects continuing into Phase 2 in 2020-21 have continued to provide practitioners with further opportunities for professional learning. More information about the grants supported is available from the [STEM summary page](#) on the National Improvement Hub.

Education Scotland's Regional Teams – Education Scotland's regional teams provided an extensive range of STEM professional learning opportunities across Scotland over the course of session 2019/20. The offer moved online as a result of the COVID-19 pandemic in 2020. These sessions covered many themes and aspects across STEM and were delivered by regional officers leading on STEM, Improving Gender Balance and Equalities (IGBE), Numeracy & Mathematics, Digital Skills and Community Learning and Development.

Education Scotland also worked with Scottish Government to support development of a [STEM in ELC Module](#) in collaboration with University West of Scotland. This is part of a package of training for ELC practitioners.

RAiSE Programme – The Raising Aspirations in Science Education (RAiSE) programme aims to build the capacity of practitioners, particularly in primary school settings, to deliver inspiring and engaging learning in science and STEM. The programme is led by Education Scotland and funded by The Wood Foundation, Scottish Government and participating local authorities. The programme was established in 2016 and is now being extended nationally, following its successful pilot. The local authorities that are participating, or have participated, in the programme by the end of academic year 2019/20 included:

- Angus Council
- City of Edinburgh Council
- Clackmannanshire Council
- Comhairle Nan Eilean Siar

- Dumfries and Galloway Council
- Falkirk Council
- Fife Council
- Glasgow City Council
- Moray Council
- North Ayrshire Council
- North Lanarkshire Council
- Orkney Islands Council
- South Ayrshire Council
- The Highland Council
- West Dunbartonshire Council
- West Lothian Council

More information about the RAiSE programme can be found on the National Improvement Hub:
<https://education.gov.scot/improvement/learning-resources/Raise>

Education Scotland

Denholm House

Almondvale Business Park

Almondvale Way

Livingston EH54 6GA

T +44 (0)131 244 4330

E enquiries@education.scotland.gov.scot

www.education.gov.scot