

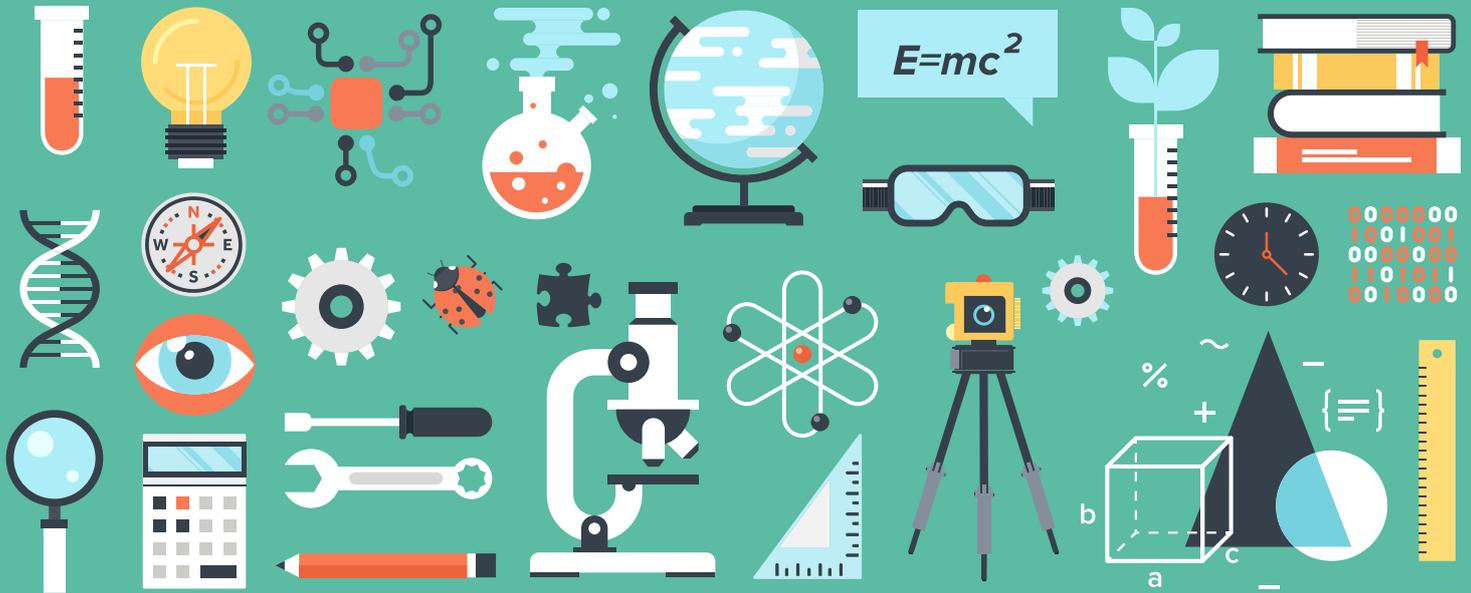
# STEM



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

Education and Training Strategy for Scotland  
Second Annual Report – Summary

March 2020



Our vision is of a Scotland where everyone is encouraged and supported to develop their STEM skills throughout their lives, to:

- Improve opportunities for all 
- Meet employer skills requirements 
- Drive inclusive growth 
- Allow Scotland to flourish and compete on a global platform 

Science, Technology, Engineering and Mathematics – STEM – have never been more relevant than they are today as we face a global climate emergency and the uncertain future arising from the UK's exit from the European Union.

STEM will be vital in researching, developing and delivering new approaches to tackle the global climate emergency. Knowledge and awareness of STEM will also be critical in enabling people to engage with the climate change debate and decide the actions that they will take.

STEM skills drive innovation and growth and are the basis for Scotland's global reputation for science and engineering excellence. They will be increasingly important as we position Scotland as a leader in the intelligent application of technologies in the Fourth Industrial Revolution, which are transforming all sectors of the Scottish economy.

For all these reasons our STEM Education and Training Strategy, now in its third year, is supporting people of all ages to develop their STEM skills and to broaden understanding of the applications of STEM in wider society.

Business and employers are integral to the STEM Strategy. All employers, particularly those in climate and energy related industries, are encouraged to engage with the education and training system to help build the STEM skills necessary to meet the future needs of our economy and our society.

This summarises our second annual report on the five year STEM Strategy, and shows the progress we are making to improve STEM learning and training across the education landscape.

## To achieve our vision we will:

### Promote excellence by

- improving the supply of STEM talent in to the profession;
- improving STEM learning and teaching and delivering enhanced professional learning;
- prioritising STEM in the expansion of apprenticeships; and
- maintaining our research excellence in our universities.



### Ensure equity by

- tackling inequity in STEM learning and careers;
- improving participation in STEM further and higher education courses and apprenticeships; and
- increasing access to public science engagement events.



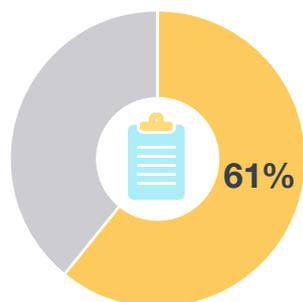
### Promote inspiration by

- creating positive STEM role models, mentors and coaches;
- promoting opportunities and benefits of STEM learning and careers; and
- recognising and celebrating success.



### Promote connection by

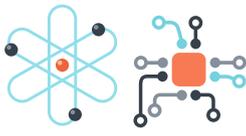
- improving the support available to schools;
- delivering up to date advice and information on STEM careers; and
- increasing the responsiveness of colleges, universities and the apprenticeship programmes to the needs of the economy.



61% of respondents to the **2019 Young People in Scotland survey** said they had chosen or thought they would choose to study a STEM subject. (KPI IV a)

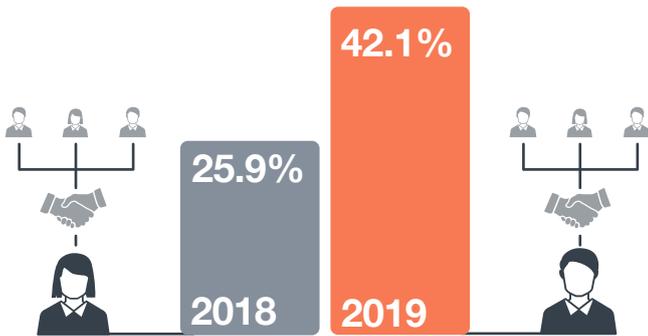
## Key activities and achievements in year two:

- A STEM online professional learning module was created for the early learning and childcare sector in January 2020.
- We awarded 111 STEM career changer Bursaries, continuing the successful scheme from year one.
- Education Scotland has awarded a total of £1.9 million of STEM professional learning grants in financial year 2019-20, supporting 162 projects.
- Eight regional STEM Advisers are helping schools and local authorities to improve STEM learning alongside the specialist Numeracy and Mathematics Officers and Digital Officers.
- Six Improving Gender Balance and Equalities Officers are embedded within Education Scotland's regional teams.
- We continue to support SSERC to up-skill teachers and technicians, with £865,000 provided in 2019-20.
- SSERC delivered their pilot of the Young STEM Leader programme across 72 centres.
- Colleges are continuing to develop the 13 regional STEM Hubs.
- We provided funding of £2.625 million across Scotland's four science centres in 2019-20.
- In 2019-20, funding of up to £250,000 is available to support Scotland's science festivals.
- In 2019-20 we are providing funding of £100,000 to support Generation Science and Young Engineers and Science Clubs.
- A national engagement campaign '**Aye for Ideas**' was launched in June 2019.
- Over 80 early learning and childcare settings and schools piloted the new STEM Awards.
- The first annual community learning and development (CLD) STEM conference, **What's STEM Got to Do with It**, was held at Glasgow Science Centre in February 2019.
- The Improving Gender Balance and Equalities officers engaged directly with 50 school clusters, and had over 2,200 engagements with practitioners.



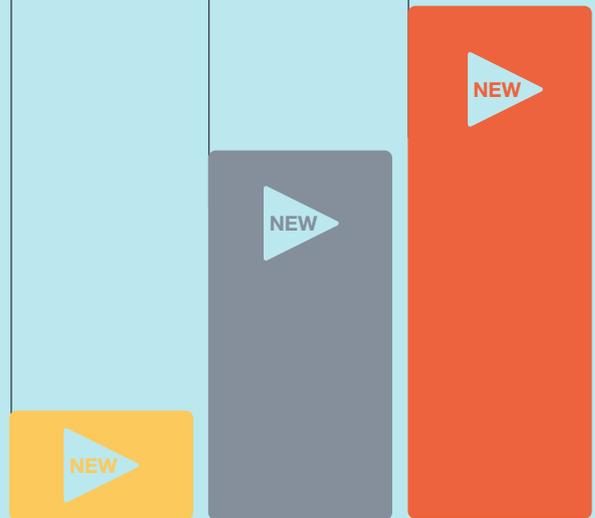
# 90%

In 2018-19, **14,046 young people participated** in an inspiring activity with **90% saying their My World of Work Live! experience had increased their understanding** of jobs and careers in science/technology.



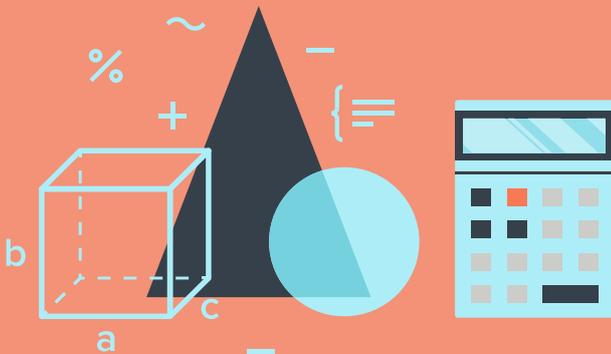
Of the 1,187 practitioners that responded to Education Scotland's 2019 Annual STEM Practitioner Survey, **42.1% said that their establishment had a STEM partner** from the private, public or third sector compared with **25.9% in 2018**. (KPI V a)

161 Cohort 1 (2016-2018)  
552 Cohort 2 (2017-2019)  
722 Cohort 3 (2018-2020)



Number of STEM Foundation Apprenticeships new starts increased from **161 in Cohort 1** to **552 in Cohort 2** and to **722 in Cohort 3**. (KPI I c)

# 100,000



**100,000 people across Scotland were involved in Maths Week Scotland** in September 2019, with events in every local authority area.

Most deprived areas

Rural areas



Quality community group engagement with Science Centres and Festivals

2014-15 7,364

2017-18 8,604

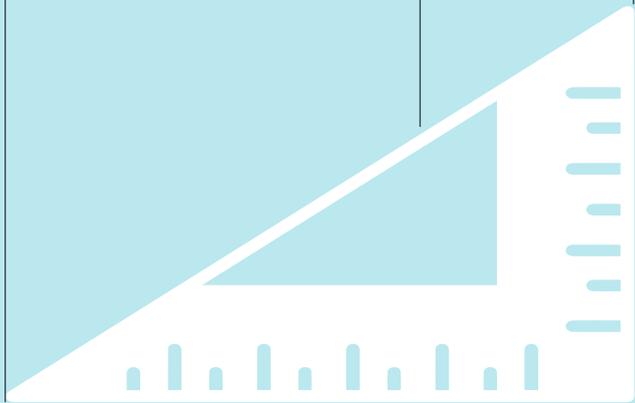
2018-19 11,505

The number of members of community groups from most deprived or rural areas participating in quality engagement with Science Centres and Festivals **increased from 7,364 in 2014-15 to 8,604 in 2017-18 to 11,505 in 2018-19**. (KPI III f)

380  
2015-16

510  
2016-17  
and  
2017-18

595  
2018-19

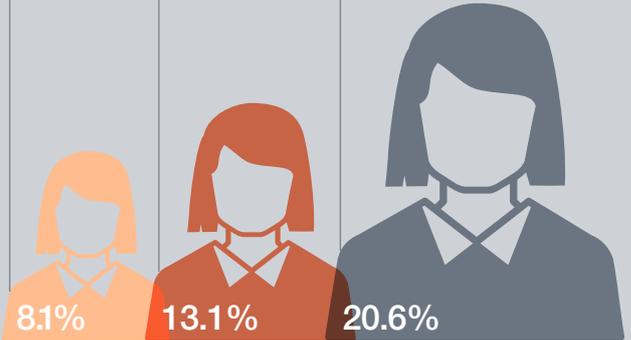


STEM Teacher Training entrants increased from **380 in 2015-16 to 510 in 2016-17 and 2017-18 to 595 in 2018-19.** (KPI I a)

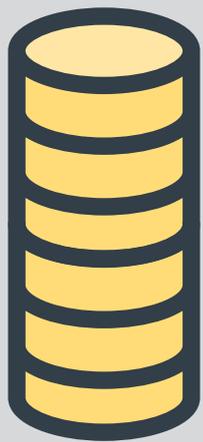
**Cohort 1**  
(2016-2018)

**Cohort 2**  
(2017-2019)

**Cohort 3**  
(2018-2020)

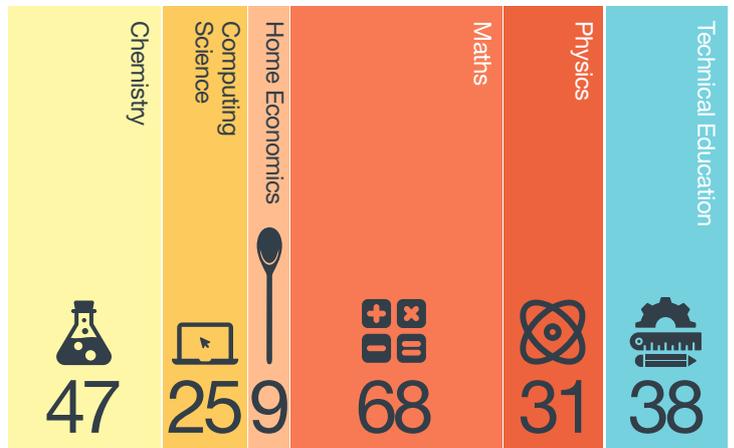


The percentage of females starting in STEM-related Foundation Apprenticeships **increased** from **8.1% in Cohort 1 to 13.1% in Cohort 2 to 20.6% in Cohort 3.** (KPI III d)



2019-20  
**£1.9m**  
supporting  
**162**  
projects

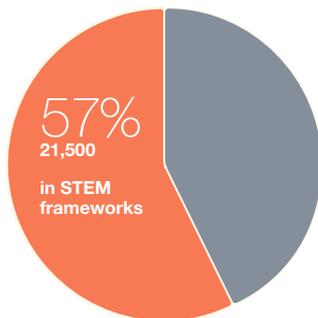
Funding for the Enhancing Professional Learning in STEM Grants in **2019-20 totalled £1.9m, supporting 162 projects.**



**218** STEM Bursaries awarded in 2018-19 and 2019-20



**37,765**  
MA's in  
training



As at 31 March 2019 there were **37,765 Modern Apprenticeships in training.** Of these, **57% (21,500) were in STEM frameworks.**

Most deprived quintile



2016-17  
**37.9%**

2017-18  
**50.6%**

2018-19  
**62.5%**

In **2018-19, 62.5%** of eligible schools in the most deprived quintile received a quality STEM engagement experience compared with **50.6% in 2017-18 and 37.9% in 2016-17.** (KPI III e)