

STEM Nation Award

West Partnership – June 2023

Ian Stewart – Development Officer (STEM Nation Award)

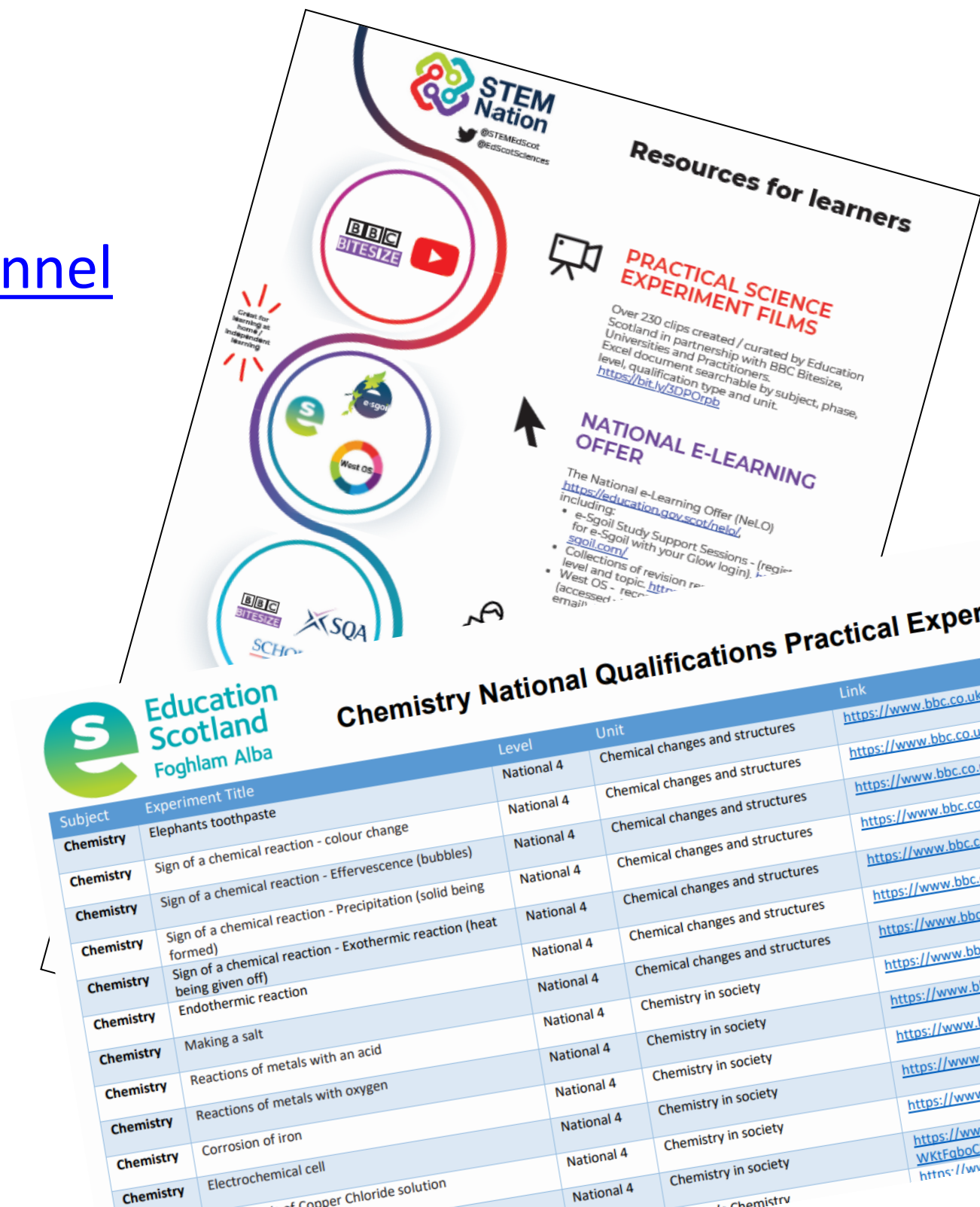


STEM@educationscotland.gov.scot



[STEM Nation
Award](#)

- Practitioner PLC Networks (accessible through Glow)
 - ES Secondary Sciences Network (Joining code: uh9sf32)
 - National STEM Network (Joining code: kz41xx4)
 - Regular webinars throughout the year.
 - Recorded webinars available on the [STEM nation YouTube Channel](#)
- [STEM Online Resource](#):
 - Monthly updates on Funding & Festivals
 - Professional Learning / Events
 - Resources (including Experiment Video Clips)
- [National e-Learning Offer](#)
 - Over 25,000 resource links across 37 subjects
 - Live sessions (E-Sgoil)
 - Recorded Content (West OS)



Resources for learners

BBC BITESIZE

PRACTICAL SCIENCE EXPERIMENT FILMS

Over 230 clips created / curated by Education Scotland in partnership with BBC Bitesize, Universities and Practitioners. Excel document searchable by subject, phase, level, qualification type and unit. <https://bit.ly/SDPOrb>

NATIONAL E-LEARNING OFFER

The National e-Learning Offer (NeLO) including:

- e-Sgoil Study Support Sessions - (register for e-Sgoil with your Glow login). <https://education.gov.scot/neilo/>
- Collection of revision resources - (register for e-Sgoil with your Glow login). [sgoil.com/](https://www.sgoil.com/)
- West OS - recorded email

Chemistry National Qualifications Practical Experiments

Subject	Experiment Title	Level	Unit	Link
Chemistry	Elephants toothpaste	National 4	Chemical changes and structures	https://www.bbc.co.uk
Chemistry	Sign of a chemical reaction - colour change	National 4	Chemical changes and structures	https://www.bbc.co.uk
Chemistry	Sign of a chemical reaction - Effervescence (bubbles)	National 4	Chemical changes and structures	https://www.bbc.co.uk
Chemistry	Sign of a chemical reaction - Precipitation (solid being formed)	National 4	Chemical changes and structures	https://www.bbc.co.uk
Chemistry	Sign of a chemical reaction - Exothermic reaction (heat being given off)	National 4	Chemical changes and structures	https://www.bbc.co.uk
Chemistry	Endothermic reaction	National 4	Chemical changes and structures	https://www.bbc.co.uk
Chemistry	Making a salt	National 4	Chemistry in society	https://www.bbc.co.uk
Chemistry	Reactions of metals with an acid	National 4	Chemistry in society	https://www.bbc.co.uk
Chemistry	Reactions of metals with oxygen	National 4	Chemistry in society	https://www.bbc.co.uk
Chemistry	Corrosion of iron	National 4	Chemistry in society	https://www.bbc.co.uk
Chemistry	Electrochemical cell	National 4	Chemistry in society	https://www.bbc.co.uk
Chemistry	Reaction of Copper Chloride solution	National 4	Chemistry in society	https://www.bbc.co.uk



The STEM Nation Award and the Young STEM Leader Award Programmes have been developed with support and funding from the Scottish Government.

The STEM Nation Award Programme, led by Education Scotland, provides a focus for colleagues across a setting to work collegiately to identify, celebrate, promote and develop excellent STEM learning.



STEM Nation Award – Update

National Update :

- **190** settings have registered from across all six regions;
- **55** settings have been awarded one or more elements.
- **26** settings have achieved the full STEM Nation Award.

Update for West Partnership:

- **61** settings are registered
- **12** settings awarded one or more elements.
- **11** settings achieved the full STEM Nation Award.





Benefits

The STEM Nation Award Programme addresses the key aims of the STEM Strategy for Scotland, to deliver Excellence, Equity, Inspiration and Connection in STEM education and training. The structure of the Programme provides opportunities which allow settings to address many key priorities within the STEM context, including

- Closing attainment gap
- Closing equity gap
- Social Justice
- Gender balance
- GIRFEC
- Learning for Sustainability
- Green Skills
- STEM Skills
- UNCRC



Programme Process

- Register and carry out self-evaluation
- Complete setting profile
- Collate and submit evidence using PowerPoint template
- For full award - Action Plan and Validation Conversation

STEM Nation Award

Evidence

Applicant details

- Monifieth High School
- Angus Council
- 5339537
- Angela Barclay
- 20 November 2019

Setting profile

Monifieth High School is one of eight comprehensive secondary schools in Angus, and has educated generations of pupils from Angus and Dundee since first opening its doors in 1976. We currently have around 1200 pupils and over 80 staff.

Our three overarching themes for the school are Attainment, Health and Community and these are signposted in all our correspondence and presentations. We work hard to make the school environment a place where pupils can achieve, feel safe & secure and work with mutual respect in our wider community.

<https://www.monifiethhighschool.com/>

The five elements

- Five key elements – evidence may cover multiple elements
- Maximum of 5 slides per element
- Evidence can be submitted gradually, within three year timeframe
- Informal support available
- Potential as project theme for probation year



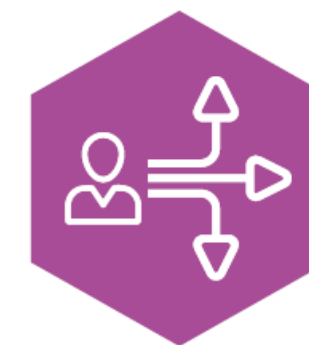
Leadership in
STEM



STEM family learning /
STEM learning in
the community



Employability
and STEM
partnerships



Curriculum
and learner
pathways

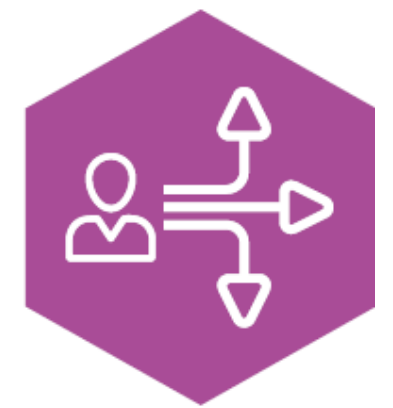


Equity and
equality in
STEM

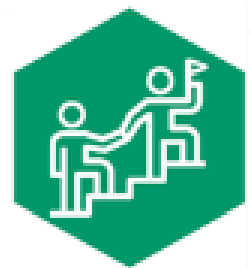


Curriculum and Learner Pathways examples:

- STEM learning strongly supports Learning for Sustainability, the UN Sustainable Development Goals including learning about the climate emergency and threats to biodiversity.
- Engaging STEM contexts help us deliver literacy, numeracy and digital literacy.
- We are using creative approaches in STEM to promote curiosity, open-mindedness, imagination, problem solving and diversity.
- Collaboration with learning community colleagues is helping us to improve continuity and progression in STEM learning.
- We are helping learners develop a belief in their own abilities. The support we provide to learners and their families helps learners make informed choices about STEM learner pathways, not limited by stereotypes.
- We encourage all learners to develop a wide range of skills and take account of labour market needs when planning the curriculum to prepare learners for a variety of STEM careers, including green jobs.



**Curriculum
and learner
pathways**



Leadership in STEM

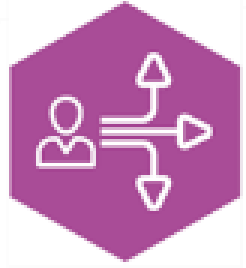


Young STEM Leaders

- As part of School Improvement Plan, Faculties were tasked with engaging young people in leadership.
- Young STEM Leader Programme was introduced as part of a wider leadership programme for senior pupils.
- School became pilot centre for Young STEM Leader Programme.
- S6 YSL pupil group formed and met daily during PST time as no timetabled class was available. S6 YSL team working towards level 6 YSL award.
- Pupils took on a number of roles, responsibilities and activities including the following which they were involved in the planning and delivery of:

1. YSL National Youth Steering group (3 pupil reps)
2. Classroom Support and Peer Mentoring
3. Nursery/Early Learning Centre STEM Activities
4. Enhanced Transition Programme for P7 and delivery of YSL Level 2 Award
5. West Partnership STEM showcase Event

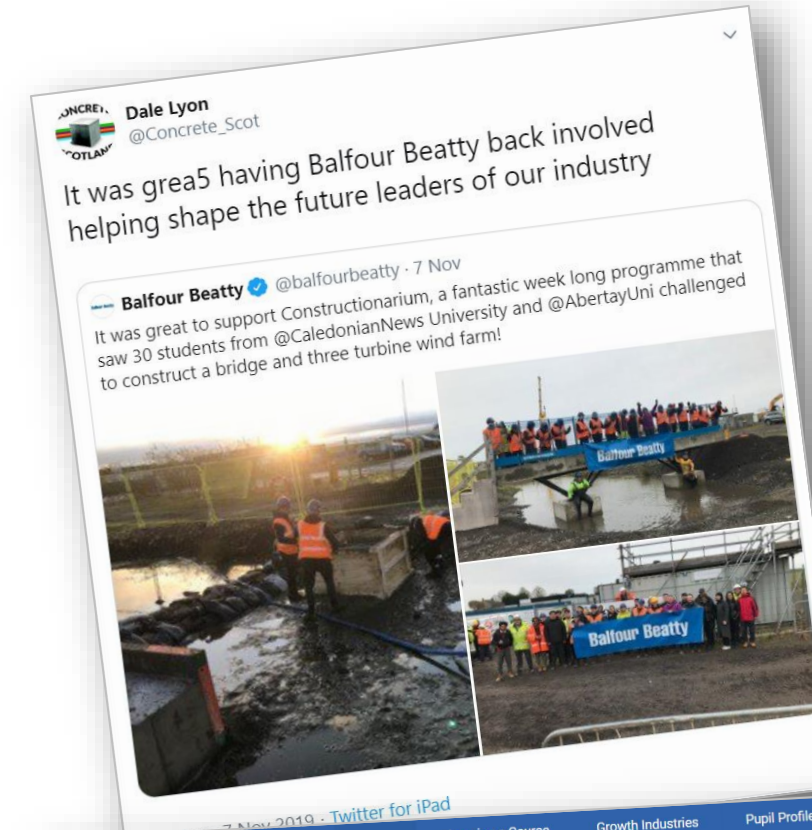




STEM curriculum and learner pathways

Senior Pathways

- Our Foundation Apprenticeship programme offers learners SCQF Level 6 learning in Engineering, Civil Engineering, Business and Software/ Hardware Development.
- Our enhanced STEM Academy course provides pupils with progression from STEM Academy and supports learners to achieve FA Scientific Technologies and Personal Development Award (both at SCQF Level 6).
- Our Enhanced Lab Science, Personal Finance and Applications of Maths courses are providing learners with greater opportunities for progression and choice.
- Our Learner Journeys website is helping learners understand their options.



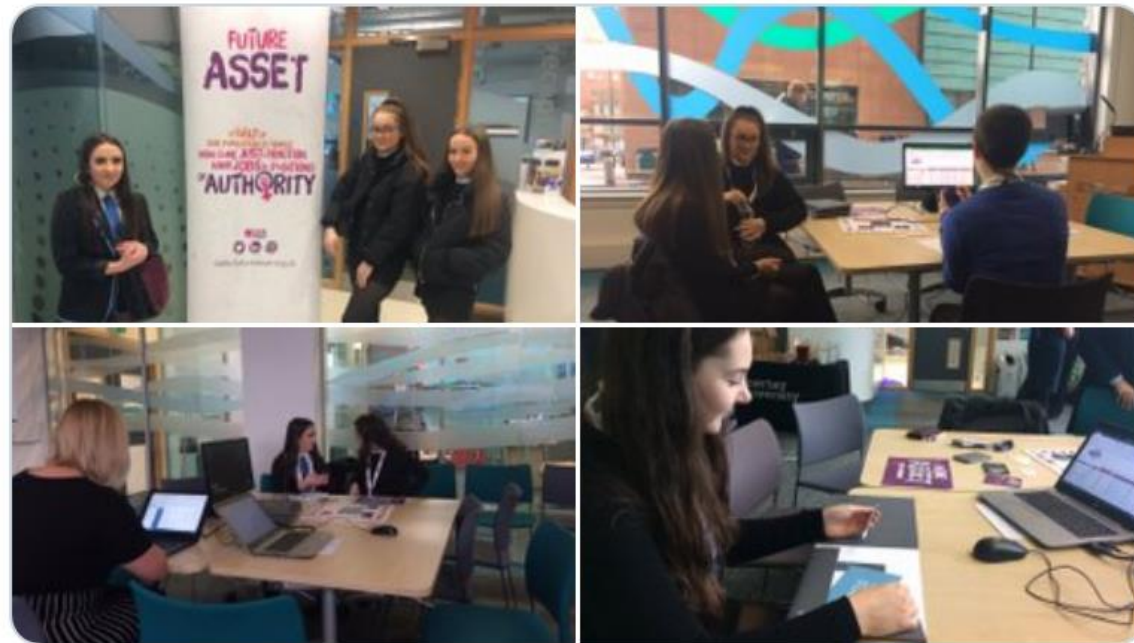


Equity and equality in STEM



MHS Technologies @PeopleWhoCan · 12 Nov

Alaiah, Sinead, Iona, Katie and Jasmine representing us at Future Asset conference!! @AbertayUni #iamanasset @MonifiethHigh



MHS Technologies @PeopleWhoCan · 14 Dec 2018

Girls in STEM @dundee_angus Thanks for a brilliant morning! @MonifiethHigh @CarHighTech #engineeringforall #engineeringourfuture #skillsforlife



Promoting Gender Balance Working Group

Meeting 13/11/2019

Present:

Laura Anderson (PT Heart), Shannon Murray (Art & Design), Neil Tilston (PT Assessment & Maths Teacher), Craig Davies (Social Subjects), Angela Barclay (PT Technologies/DYW).

Apologies:

Janice Murray (Maths), Gillian Savory (English), Debbie McCartney (Maths), Alison Low (PT Modern Languages/DofE), Germain Julien (Modern Languages)



Agenda & Minutes

1. Reflections

Staff shared individual reflections on their areas. AB collated group response on Ed Scot paperwork.

2. Planning for Moving Forward

It was agreed to gather some hard data:

Numbers of male and female uptake in Senior School subjects.

Numbers of uptake in S3 subjects to see where the imbalance starts.

Comparison of these numbers with our closest comparator schools. (NT to find this.)

AB to arrange follow-up meeting for group with Heather Earnshaw to analyse this data and develop strategy to trial.

Working group members will also contact colleagues at schools with better gender balance in the subject to look for good practice.

3. IGBE Meets

Craig Davies kindly agreed to represent us at this upcoming event. AB to send minutes and collated responses.

Meeting closed by the bell at 2:10pm



IGBE Meets – Share & Create: Ideas for Improving Gender Balance and Equalities (IGBE)

IGBE MEETS

IGBE Meets are opportunities for practitioners interested in addressing gender imbalances in participation, curricular preferences and learner pathways, to come together for local network building, idea sharing and collaborative problem solving.

TIME AND PLACE

All IGBE Meets will start at **1:30pm** and finish at **3:40pm**.

Dynamic Earth, Edinburgh, EH8 8AS	12 th Nov
The Gordon Schools, Huntly, AB54 4SE	21 st Nov
Dundee and Angus College, Dundee, DD5 1NY	21 st Nov
St Andrews RC Secondary, Glasgow, G32 6QE	21 st Nov
James Young High School, Livingston, EH54 6NE	26 th Nov
Oban High School, Oban, PA34 4JB	27 th Nov

To book a place, see Eventbrite links on www.bit.ly/NIHIGB

WHO

Anyone who is interested in discussing how we approach and engage people in improving gender balance and equalities. This event is aimed at practitioners from schools and ELCs, but we would also welcome interested practitioners from other organisations, including Community, Learning and Development and local authority staff.

Cost: Free to attend

FOR MORE INFO:

Email:

IGBE@educationscotland.gov.scot

Twitter: @EdScotIGBE
#IGBE #IGBemeets

Monifieth High School



Leadership
in STEM

Equitable access to STEM world of work. Data is used to analyse and promote equity



STEM Family and
Community
Learning

Working with a diverse range of families (including those hard to reach)



Employability and
STEM Partnership
Working

Sustained action rather than one off events



STEM Curriculum and
learner pathways

Contexts, images and role models are not limited by stereotypes



Equity and Equality
in STEM

Actively removing barriers, equity not equality

Learners become positive role models in STEM and lead activities for others

Learners can engage with family and community audiences.

YSLs encouraged to explore STEM careers and work with STEM Ambassadors

Curriculum linked frameworks from CfE L2 - SCQF L6.

Challenging stereotypes and elitism in STEM embedded within programme

Who can help?

children and
young
people

parents and
wider
community

STEM
Officer

Margaret
Craw
Regional
officer

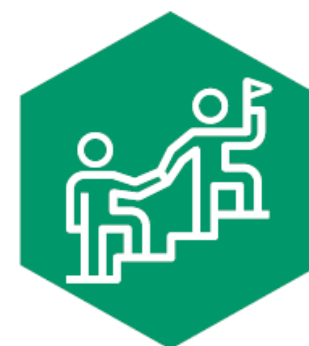
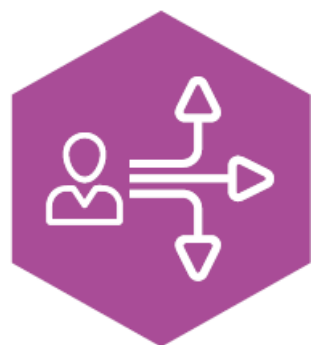
partners

community
learning &
development
colleagues

practitioners

Primary
Science
Development
Officer

Ian Stewart
Development
Officer



Support Structures / Opportunities

Initial Support :

- Margaret Craw - Regional STEM Education Officer
- Ian Stewart – Development Officer
(Ian.Stewart@educationscotland.gov.scot)
- PSDO / STEM Officer

Collegiate Support:

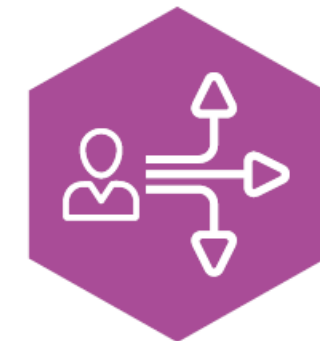
STEM Coordinators, STEM Networks, colleagues, etc

Partners / Supporters :

STEM Ambassadors, SSERC, Glasgow Science Centre, RHET, Colleges, Royal Society, The Royal Society of Chemistry, Universities, Colleges and many more



[Networks](#)





Regular drop in sessions for interested and registered settings.



STEM Nation Network Sessions



[Upcoming STEM Events](#)

