

Bulletin 278

STEM Engagement

STEM Engagement **round-up**

SSERC offers a wide range of STEM engagement and enrichment programmes to further increase access to, and participation in STEM, well beyond the classroom setting. Our STEM engagement portfolio offers educators, young people, and partners in industry the opportunity to collaborate and create learning activities and opportunities in STEM for children, young people and adults in Scotland.

With so much activity going on within STEM engagement at SSERC, the team has taken the opportunity to give a comprehensive round-up of all our programmes. If anyone out there would like to hear more or get involved, please contact us. Our opportunities are continually accessible and there are often new activities being created so there's always the chance to get involved.



SSERC EIPs bring partners in industry together with education settings, enabling groups of early years, primary/secondary schools and colleges to improve young people's engagement in STEM.

Leidos and SSERC STEM Challenge

Six schools in the Greater Glasgow area are working with mentor STEM Ambassadors at Leidos to solve a challenge in STEM. From redesigning their school for the future, to planning a new year party in Antarctica, the schools and their teams are really having to utilise their creativity alongside their STEM skills

to provide a solution. The showcase event will take place in June 2023 (Figures 1 and 2).

Neptune Energy Challenge

Peterhead and Mackie Academies in Aberdeenshire have been set the challenge by the STEM Ambassadors of Neptune Energy to repurpose an existing fossil fuel power station to become a cleaner and greener energy source. The teams are working on their solutions whilst being mentored by the Neptune team. The final showcase of their solutions will take place in Neptune HQ in Aberdeen City in March 2023 (Figure 3). >>

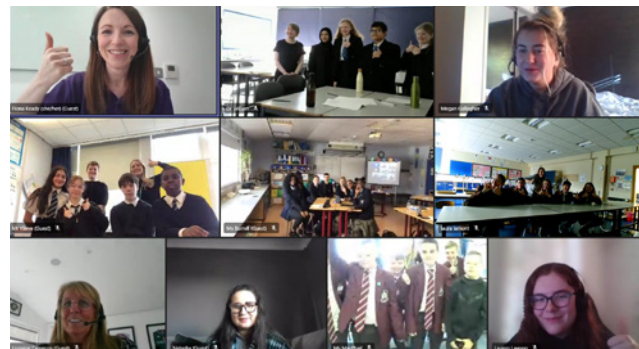


Figure 1 - Leidos STEM Challenge online launch event.



Figure 2 - The Teacher Launch at Leidos HQ.



Figure 3 - Neptune Energy Challenge launch event.

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Ocean Winds EIP

Oceans Winds is working in partnership with SSERC to support several STEM programmes and encourage young people to follow a STEM related career. Their cohort of STEM Ambassadors have taken part in a Big Number Natter to support National Numeracy Day, created careers videos to showcase what they do in the offshore wind industry, volunteered for careers events through Developing the Young Workforce and been interviewed by students competing in TechFest's STEMNext Essay Competition. Ocean Winds has enabled schools in Moray and Aberdeenshire to receive robot kit and participate in the FIRST® LEGO® League Challenge, with many teams going on to compete in the Grampian Regional Final in Fraserburgh. For 2023, Ocean Winds is funding the development of the new Young STEM Leader YSL7 Award and the pilot for this will start in June 23 with full roll out across Scotland in August 2024.

As well as the above, Ocean Winds has made a great impact on professional learning (PL) at SSERC. Each year, we deliver a two-day PL event for teachers of Environmental Science; helping them to deliver hands-on practical learning experiences for their learners across N5 and Higher levels. Ocean Winds has shown incredible support and generosity by providing every delegate on the course with their own model wind turbine kit to take back to their school and run a

"We have been using our turbine kit with Nat 5 Environmental Science, Nat 5 Geography and our Earth Science academy for demonstrations, experiments and as a guide for students to make their own. It also sparks ideas for land uses and land use conflicts. We have conducted experiments on the number, and best angle of blades, while researching career opportunities and requirements for DYW. It's one of the students' favourite activities!"

Gary – Teacher at Larbert High

series of activities, experiments and investigations. SSERC has worked with the team at Ocean Winds to align all of this work to the Scottish curriculum and learners can use this resource across a range of CfE levels and key areas.

Enthuse Partnerships

ENTHUSE Partnerships empower schools, colleges and employers to share practice and work collaboratively aiming to help young people achieve increased attainment, interest and understanding in STEM.



Bucksburn and Dyce learning communities in Aberdeen

The focus in this partnership was to build a consistent approach to maths and numeracy learning and teaching via a series of professional learning events for teaching staff in the primary and secondary schools in both clusters. The partnership has now been completed but SSERC continues to work with the clusters to plan for legacy impact, and we

hope to create lasting professional learning offers in 2023 and beyond. This partnership was the joint winner of Enthuse Partnership of the Year for Scotland back in 2022 (see Figure 4).

Shawlands, Cumbernauld and St Mungo's Academies, Brannock and Barrhead High Schools in the West of Scotland

Staff and learners in these five secondary schools worked with Jacobs, going on a journey of enhanced career-based learning, finding out the many STEM-linked opportunities and pathways that exist beyond school. As the learning took place, young people in these schools were challenged to design a solution for a new spaceport, wind farm or festival in Scotland; bringing in all aspects of STEM that would be required to successfully create, manage and complete the project. As with many of our partners, STE(A)M Ambassadors of Jacobs played a vital role in supporting, mentoring, and inspiring the school teams. This partnership was the joint winner of Enthuse Partnership of the Year for Scotland back in 2022 (see Figure 5). >>



Figure 4 - Bucksburn and Dyce learning communities - joint winner of Enthuse Partnership of the Year for Scotland back in 2022.



Figure 5 - Joint winner of Enthuse Partnership of the Year for Scotland back in 2022.

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Spectris Tayside

This two-year partnership is focussing on digital technology in year one within the primary school setting and launched in the autumn of 2022. Two schools from Dundee City Council along with four schools in Angus, are working with SSERC to build resources and skills to bring robotics and technology into the classroom, allowing young people to go on and lead learning in this area. Dundee Science Centre is also supporting our partnership (Figure 6).



Figure 6 - Professional learning event at Dundee Science Centre with SSERC staff and partnership school leads.



Aramco Northeast

This two-year partnership focuses on Engineering, Physics, Construction and Design for year one, and is aimed at the primary school setting. Launched in the autumn of 2022, fifteen schools across Aberdeen City and Aberdeenshire are working with SSERC to build resources and skills to deliver STEM Challenges in the classroom, allowing young people to go on and lead learning in this area. Aberdeen Science Centre is also supporting our partnership (Figure 7).

Intergen

This partnership launched in late 2022 and focusses on numeracy in the senior phase of secondary schools. Teachers of STEM in secondary settings will work with STEM Ambassadors and other experienced educators to create a practical-based professional learning course that can be delivered to the wider STEM teaching community in Scotland. The newly created writing team is also being supported by STEM Learning and SQA with a two-day planning and writing event. >>



Figure 7 - Professional learning event at Aberdeen Science Centre with SSERC staff and partnership school leads.

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"My placement gave me an exciting and eye opening insight into lab research and helped me to unlock my potential. I originally wanted to apply for medicine, but now I know other options are just as exciting"

CAROLINE

placement at Beatson Institute for Cancer Research

”



Nuffield Research Placements Programme

Nuffield Research Placements (NRP) are a fantastic opportunity for S5 learners from disadvantaged backgrounds to take part in a two-week hands-on research placement with a STEM employer.

SSERC began coordinating the NRP Programme in Scotland in 2022. Last year we arranged 91 placements across Scotland on a huge variety of topics from cell biology to aerospace engineering!

Our coordination effort has already begun for 2023 where we aim to have another exciting set of placements

available to learners wherever they are and whatever they are interested in.

Young STEM Leader Programme

The Young STEM Leader Programme gives young people the chance to inspire, lead and mentor their peers through the creation and delivery of STEM activities and events within their schools, communities or youth groups. Over 12,000 young people across Scotland are taking part. You can deliver the programme in your centre by attending one of our two-hour online training sessions to become a fully certified Young STEM Leader Tutor Assessor.

Find out more about the programme at www.youngstemleader.scot

Institute of Physics YSLP Grants Get some funding for your YSLP activities!

The Institute of Physics YSLP Grant is an exciting opportunity for YSLs who are planning to complete an activity, event or interaction with physics as a theme.

IOP are awarding £100 to be spent on resources or equipment to support the delivery of YSLP activities. Funding is available for any YSLP delivering centre in schools, community groups or other settings, and can cover a wide range of topics linked to physics. Centres have used funding to support learning around forces, space, materials, climate change and more.

Previous examples of funded projects include:

- YSLs at Ross High School in Tranent led bottle rocket and mentos and coke activities with feeder primaries (Figure 8).
- Senior learners at Balwearie High School in Kirkcaldy led pop rocket and make a Mars Rover activities with their STEM club (Figure 9). >>



Figure 8 - YSLs at Ross High School in Tranent led bottle rocket and mentos and coke activities with feeder primaries.



Figure 9 - Senior pupils at Balwearie High School in Kirkcaldy led pop rocket and make a Mars Rover activities with their STEM club.

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- Peebles High School YSLs bought Strawbees building kits with their grant and ran experiments making catapults and changing different variables to see the effects on launches (Figure 10).

Find out more about the IOP Grant and apply at youngstemleader.scot/physics-awards

STEM Ambassadors in Scotland

STEM Ambassadors are volunteers from a wide range of STEM industries and backgrounds who are passionate about sharing their knowledge and experience with young people. Our free programme connects these volunteers with schools to provide valuable resources, training, and events that can help to inspire and engage students in STEM subjects.

The STEM Ambassador Hub can provide training and support for schools to help them make the most of the STEM Ambassador Programme. The hub also runs events at key points throughout the year for classes to get involved with, such as online book readings, careers talks and competitions.

In addition to the above, the STEM Ambassador programme also provides a resource lending library where schools can borrow STEM kits for free and have them delivered to their school.

Get started by registering as an educator at www.stem.org.uk/stem-ambassadors



Figure 10 - Peebles High School YSLs bought Strawbees building kits with their grant and ran experiments making catapults and changing different variables to see the effects on launches.

Resource Hub

To discover the resources we have available and information on how to borrow them visit [our website](#).

Big Seaweed Search & Beach Watch Marine Litter Survey Training

When: 23 May 2023, from 18.00

Where: Cramond Beach, Edinburgh

This is a training opportunity for educators and STEM Ambassadors with the Marine Conservation Society to learn more about seaweed and citizen science projects. Register [here](#).

Training and events

Find more training and events on our website: <https://www.stemambassadors.scot/events>



Contact us
You can contact us
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