STEM FUTURE

A guide for STEM Ambassadors

STEM AMBASSADOR HUB

ABERDEEN SCIENCE CENTRE

Scottish Charity No SC014922

SPARK INTEREST

Aim: to SPARK INTEREST in the topic and link this to careers and other aspects of life relevant to the young people

Example Activity

S

in groups the young people browse a selection of job roles and select which are involved in science – you then highlight that all involve science

T

young people in groups discuss which technology they have used in the last 24 hours and how long they used them for – you then talk about our dependency on technology

E

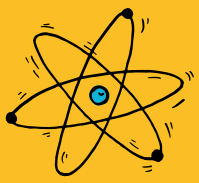
working in groups the young people draw what they think an engineer looks like – you then talk about stereotyping within engineering

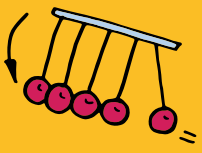
M

choose a selection of non-STEM specific careers and ask the group to discuss which aspects of these careers include maths – you then highlight that maths is involved in every industry

SET THE SCENE

Aim: to SET THE SCENE and give some context to the topic/sector to increase the young peoples knowledge and understanding





Example Activity

S

working in pairs the group research online scientific advancements that have happened in the local area throughout history – then show the group some examples, these could be linked with your own career

T

in groups the young people choose a piece of technology and discuss what problems it solved when it was developed – then highlight some examples relevant to your experience

E

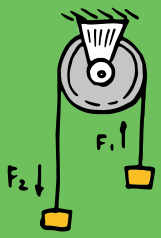
get the group to think about the area/ building they are in and discuss where and when an engineer would have been involved and what they would have considered – then give examples to the group of various types of engineering roles

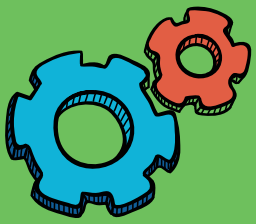
M

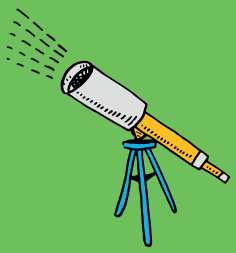
the young people work out various averages in the group (shoe size, height, amount of fruit eaten in a week etc.) and then in teams think of when this data would be used – then give examples of when and where this type of data would be used

GET IN GEAR

Aim: to GET in GEAR and get the young people active with an interactive activity to encourage discussion







Example Activity

S

each group is given a set of resources to design an experiment that tests a simple hypothesis (for example, this could be based around gravity) and then present or trial their idea with the rest of the group – encourage the groups to make predictions and think about limitations

T

give the group a modern day problem (for example, traffic volume, climate change etc.), in teams they design a piece of technology to solve the problem and present back to the rest of the group – encourage innovative thinking

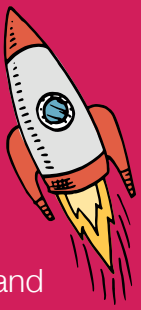
E

working in teams the young people build a tower using any resources available (for example, newspaper, K'nex etc.) and set various requirements (for example, minimum height, weight the structure must carry etc.) then test the structure as a group – encourage teamwork

M

set teams the challenge to supply a village with various resources (food, fuel etc.), the teams will be given a history of how much the village have used in previous years and will be given a budget to stick to, then each team can present their solution – encourage the group to consider different options

MY JOURNEY



Aim: to share MY JOURNEY with the young people and encourage questioning

My Profile

Talk about your experiences, your current role and your hopes for your future, include examples of the skills you have used and developed throughout (refer to employability skills on next page)

Talk about a colleague who has had different or similar experiences to you

Talk about a famous person or celebrity who is involved in a similar industry or has had similar experiences to you

Example Questions

How would you describe yourself in 3 words?

What did you enjoy most at school?

What have you enjoyed most about your journey so far?

STEM FUTURE

Aim: to talk about the young peoples STEM FUTURE and the important skills they will need

Example activity

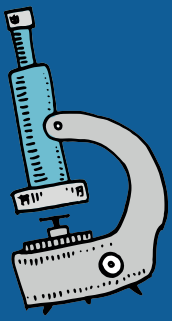
encourage the young people to choose 3 of the 10 employability skills and discuss how they can develop these skills

Top 10 employability skills

1. **Using initiative and being self-motivated**
2. **Organisational skills**
3. **Working under pressure and to deadlines**
4. **Ability to learn and adapt**
5. **Communication and interpersonal skills**
6. **Teamwork**
7. **Negotiation skills**
8. **Valuing diversity and differences**
9. **Problem solving skills**
10. **Numeracy and IT skills**

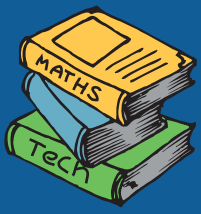
Link to poster: **www.stem.org.uk/resources/elibrary/resource/418157/top-ten-employability-skills**

HOW TO USE THE RESOURCE



Some tips for STEM Ambassadors:

- No need to use a powerpoint
- This is a guide only and can be adapted as needed, see the useful resource page for ideas
- Encourage input from the group
- Keep it simple
- Discuss your plan with the teacher in advance
- Keep your introduction brief and go into more detail in the My Journey section – this will give the group a chance to get to know you
- Gather feedback from the young people and teacher – base your questions on the aims and share your feedback with us (email at bottom of page)



Some tips for teachers:

- Contact us to request a STEM Ambassador (email at bottom of page)
- Ask for a plan from the STEM Ambassador
- Encourage group to research topic/sector in advance
- Prepare group to ask questions
- Give feedback to the STEM Ambassador and encourage the young people to do the same

Please send any feedback about this resource, feedback from sessions or STEM Ambassador requests to **stemambassadors@asc.scot**

USEFUL RESOURCES

STEM Learning
- General Resources
- ESERO
- STEM Clubs
- Brian Cox Experiments
- STEM Ambassador resources
- Jet Suit resources
- James Webb Space Telescopes
- Christmas resources **Science**
- Science Buddies
- Royal Society of Biology
- Biochemical Society
- British Science Week
- Royal Society of Chemistry
- RNLI
- Outdoor Classroom Day
- Institute of Physics
- Royal Society of Biology

Technology
- Code Clubs
- Barefoot Computing
- Apps for Good
- Digital Xtra
- Hour of Code
- Teach Computing

Engineering
- Tomorrows Engineers
- Energy4Me
- Bitz and Bob
- Royal Academy of Engineering
- Institute of Engineering and Technology

Maths
- Teach It Maths
- National Centre for Excellence in the Teaching of Mathematics
- STEM Crew

STEM
- Practical Action
- SSERC
- Explorify
- British Council
- My World of Work
- BP Educational Service
- World's Largest Lesson
- CREST Awards

Careers
- NESCol: Modern Apprenticeships
- WISE: People Like Me

Other ways to get involved
- Girls Who Code
- I'm a Scientist
- I'm an Engineer
- YESC
- 500 Women Scientists
- Arkwright Mentoring
- Brightside Mentoring
- Maths Week Scotland
- Talent 2030
- Sustainable Scotland Network
- Mentoring with Energy
- SUPA Education
- TechFest
- First Inspire