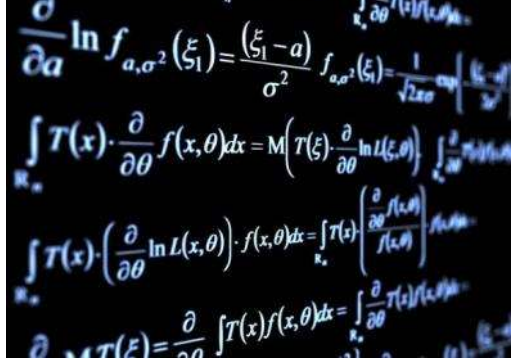


STEM & SEPA

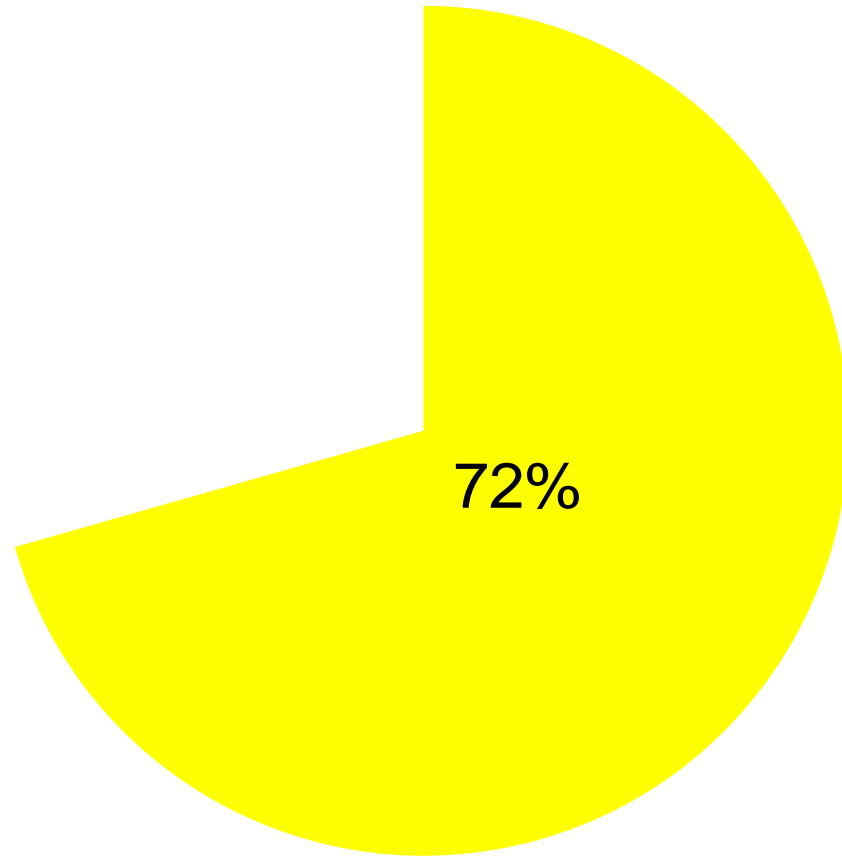
How we Shrunk the Environmental Detectives

Richard Sinnott, Senior Specialist Scientist, 2017

So what is STEM...

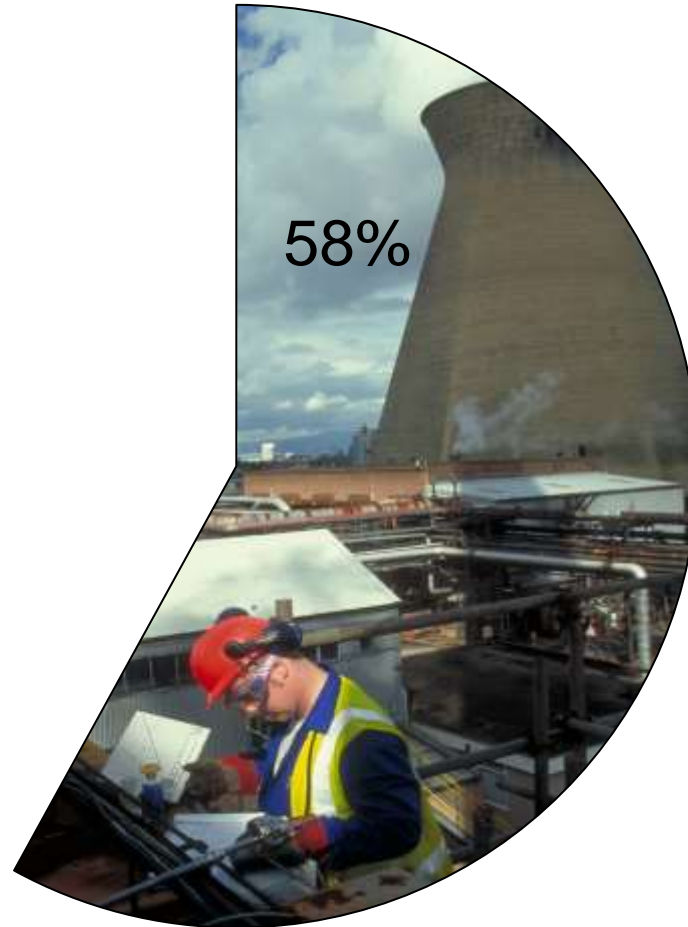
- Science
 - Technology
 - Engineering
 - Mathematics
- 
- To provide opportunities to engage young people in STEM subjects.
 - The goal?
 - To encourage young people of all genders, races and cultures to take up STEM based studies and ultimately careers.

But why...



Businesses rely on STEM skills

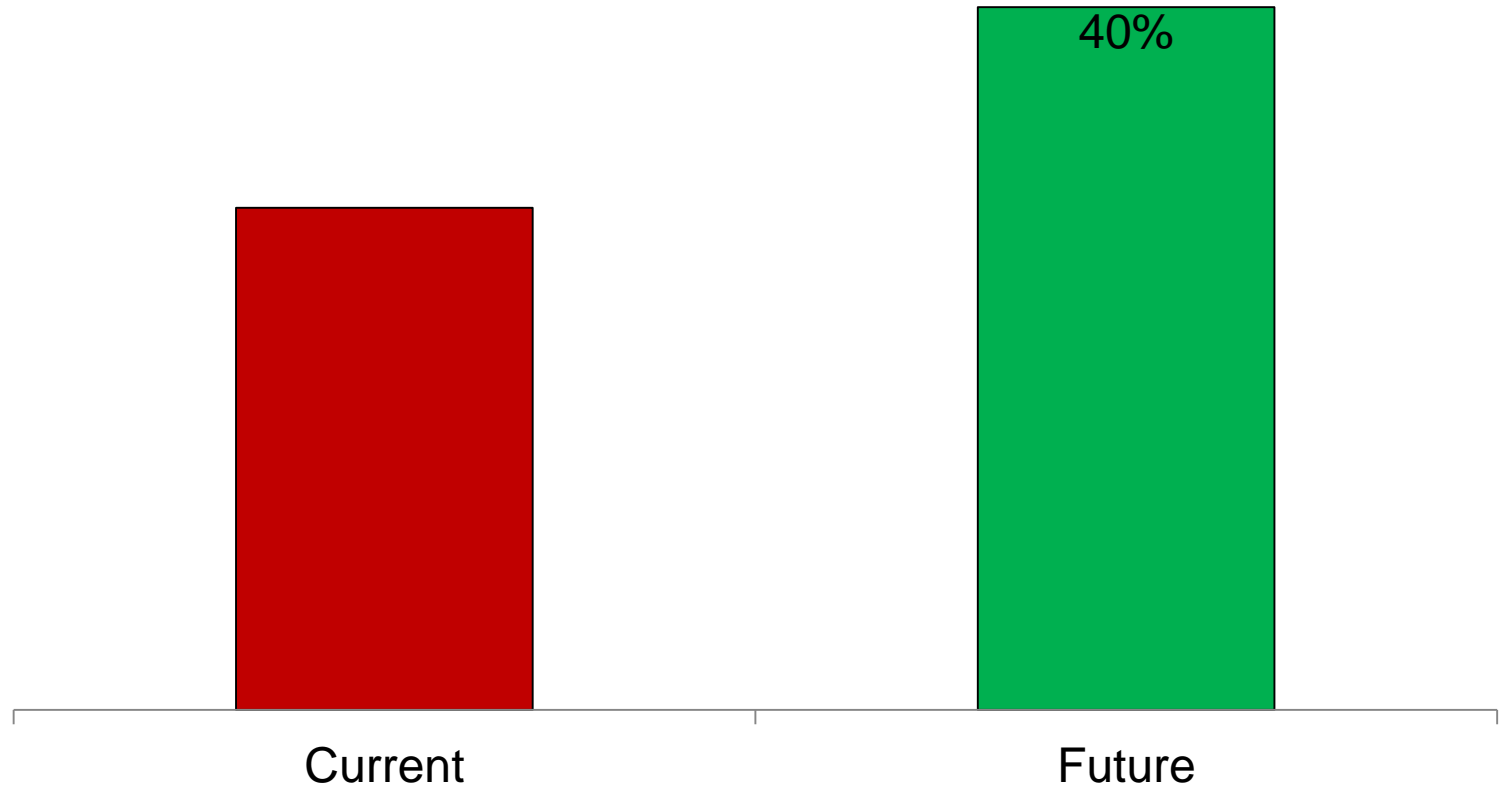
And...



New jobs will be STEM Related

More importantly...

**There is currently a deficit in the uptake of
STEM subjects**



So how is this being addressed?

- The agenda is lead by STEMNet

STEMNET
Science, Technology, Engineering and Mathematics Network



We create opportunities to engage young people in STEM; motivating, inspiring and bringing learning and career opportunities to life.

- Funded by government, charities and industry.
- How do they deliver:
 - STEM Clubs – Free advice to schools
 - STEM Ambassadors

What is the STEM Ambassadors programme?

"STEM Ambassadors use their enthusiasm and commitment to encourage young people to enjoy STEM subjects. They open the doors to a world of opportunities and possibilities that come from pursuing STEM subjects and careers."

Ambassadors in numbers

30,000 registered STEM
Ambassadors in the UK



From over 3,000
employers



60:40 Male:Female Split
18 -70: Age range

25,000 activities carried out annually

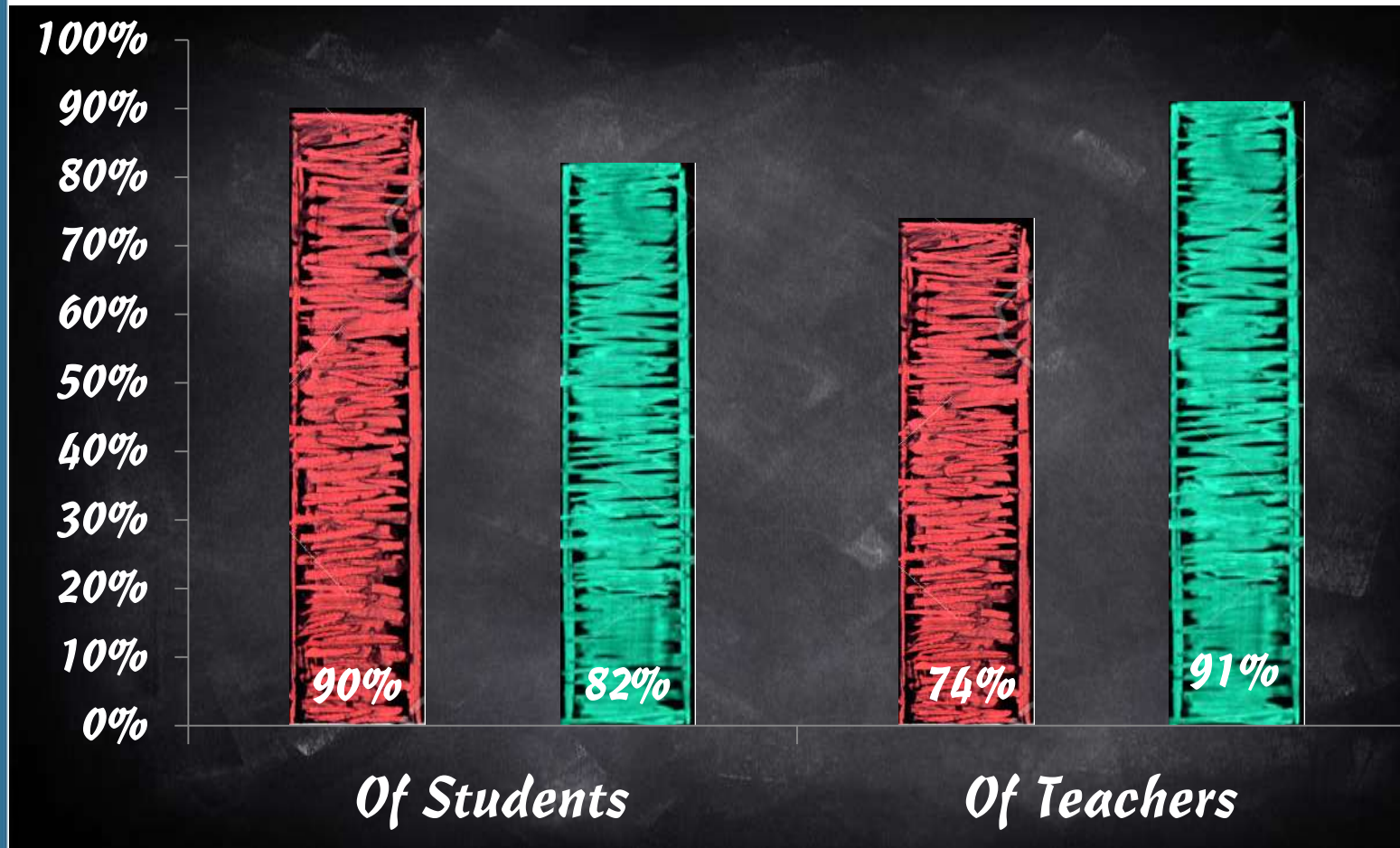


SEPA have ~10 STEM Ambassadors,
but the number is rising

What is a STEM Activity?

- Well anything...
 - Careers talks/fairs,
 - STEM in the classroom,
 - After school STEM clubs,
 - Judging STEM competitions,
 - Speed networking,
 - STEM Demonstrations,
 - Providing mock job interviews.
- Does it work?

The Benefits



- Are more likely to be interested in continuing to study STEM subjects
- Had an increased motivation to enter STEM employment

- Saw improved pupil motivation.
- Agreed they would request support again.

Have SEPA done anything?

- Glasgow Green Jobs Fair



- Large student audience from a range of backgrounds
- First appearance of the “water beasties” you will see later.

Have SEPA done anything?

- Edinburgh International Science Festival



- Launch of the Environmental Detectives
- Very well received internally and externally.

Have SEPA done anything?

- Royal Highland Show



- Different audience, different vibe.
- Again excellent feedback.

Have SEPA done anything?

- Learn About Air (www.learnaboutair.com)



- Change of medium
- Joint project with North Lanarkshire and SE Web

Which got us thinking...

- Why leave it at air...
 - We had an “in” with air
 - We had money
 - We had external support
- So we dropped it...Until



<http://www.communityscot.org.uk/social-impact-pledge/who-has-made-pledge/pledges-made-so-far/scottish-environment-protection-agency/>

How we Shrunk the Environmental Detectives – How it started

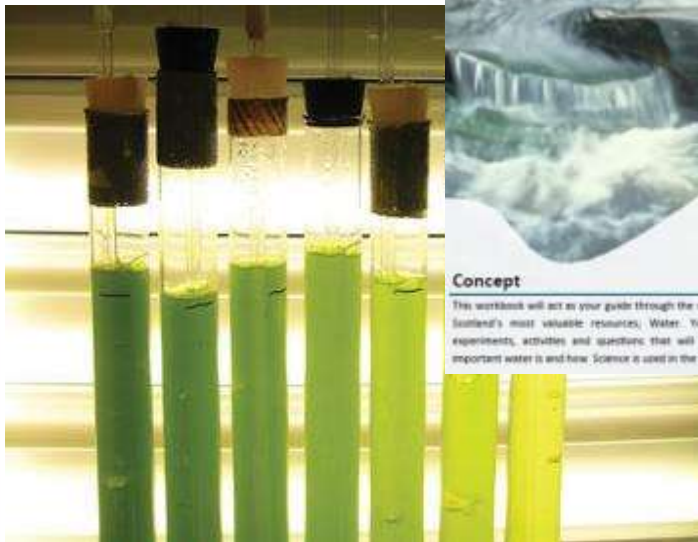
- We already had the Environmental Detectives
 - Phosphates,
 - Water Beasties,
 - Microplastics.
- What were the conditions?
 - Ten boxes to be delivered,
 - Five targeting Environmental Science Higher,
 - Five targeting the P6-S2 range,
 - Following requests boxes will be loaned to schools free of charge.

How we Shrunk the Environmental Detectives – What we did

- Collaboration with SSERC
 - The Env. Sci. higher is not taught widely,
 - Decision made to drop this.
 - Product needs to directly link to the CoE,
 - Needs to be simple for teachers to deliver.
- Project team set up
 - Four experiments identified,
 - Four delivery teams,
 - Extended deadline,

How we Shrunk the Environmental Detectives – Where are we now

- 1) Learn about the water cycle and flooding
- 2) The chemistry of water
- 3) Algae and eutrophication
- 4) Invertebrates and pollution



Has it been worth it?

- Time will tell externally,
- But internally
 - Youth Employability
 - People Strategy
 - Breaking down silos
 - Volunteering Scheme



What are the benefits to SEPA?



91% of STEM Ambassadors had increased personal satisfaction

82% experience increased confidence



59% felt they had developed new skills

59% had increased job motivation/satisfaction



The Future

- Achieve the Social Pledge
- Continually improve The Environmental Detectives
- Create multi-faceted experiments
- Develop the lab in a box idea for multi-media