



NATIONAL SPACE ACADEMY

More than Inspiration



Science & Technology
Facilities Council



Lloyd's Register
Foundation



CATAPULT
Satellite Applications







Why should I do anything?

- Sector growth
- Recruitment
- Skills
- REF
- £££
- *Opportunity*
- *Employability*
- *Social mobility*



THE ISSUE IN NUMBERS



ENGINEERING PROFESSION
WOULD LIKE

186,000
SKILLED RECRUITS
EACH YEAR TO 2024

20,000

ANNUAL SHORTFALL

OF ENGINEERING GRADUATES

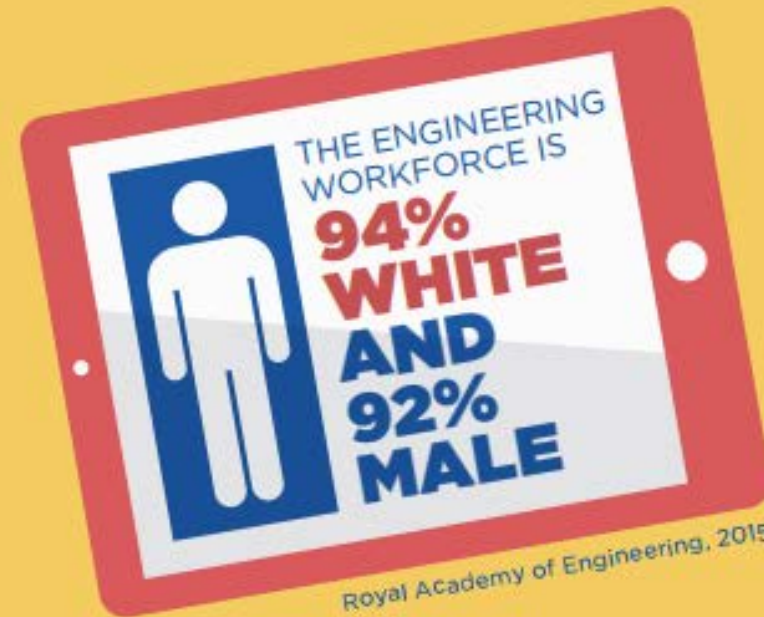
EngineeringUK, 2017

ONLY

1
3

OF PARENTS KNOW
WHAT PEOPLE IN
ENGINEERING DO

EngineeringUK, 2017



ALMOST
HALF



OF ENGINEERING
COMPANIES SAY A
SHORTAGE OF
SKILLED PEOPLE
IS SIGNIFICANTLY
REDUCING
PRODUCTIVITY
AND GROWTH

CEBR, 2014

How can I do something?

- STEM Ambassador
- Site visits and talks
- Work experience
- Mentoring
- Consultations, governance, government
- Empower other colleagues to engage
- Give information on career pathways and skills
- Build education and outreach into your projects

You are not alone!

Two basic pillars of supporting Education:

Communication

Talks – students, teachers,
careers advisors

Career pathway information

Career profiles

Websites and print

Experience

Work experience placements

Mentoring and advice

Developing training
opportunities

Telling your story!

But what about: safeguarding, exam curricula, tailoring to age/ability groups, planning activities!!!

A decorative graphic consisting of several concentric, overlapping circles in shades of gray, located in the bottom right corner of the slide.



STEM
AMBASSADORS

Examples of STEM Ambassador activity



Classroom



STEM Club activities



Careers talks



Speed networking



Online mentoring



Site visits and hosting
work experience

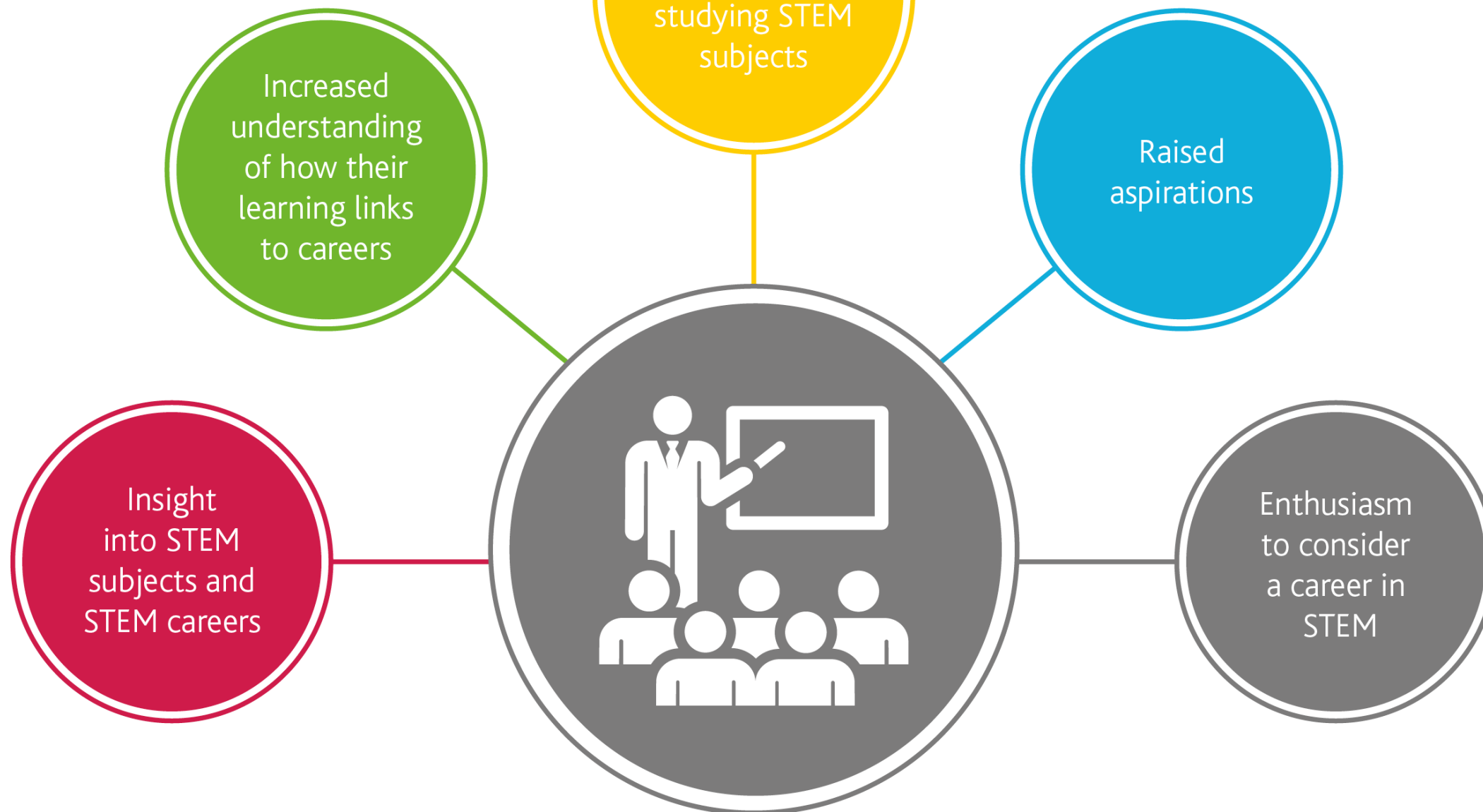


Large science festivals
and fairs

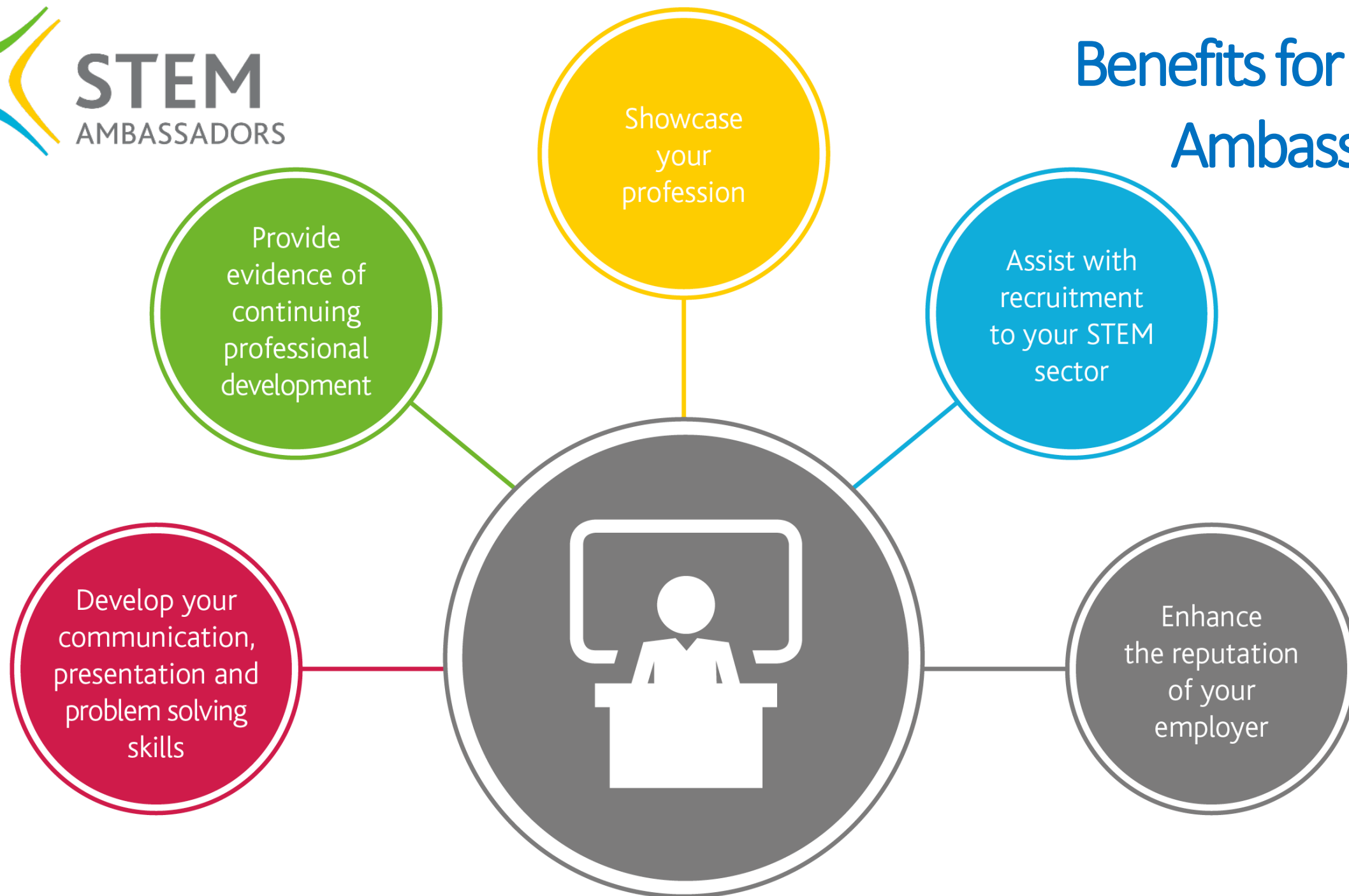


Non-school group

Benefits for Young People



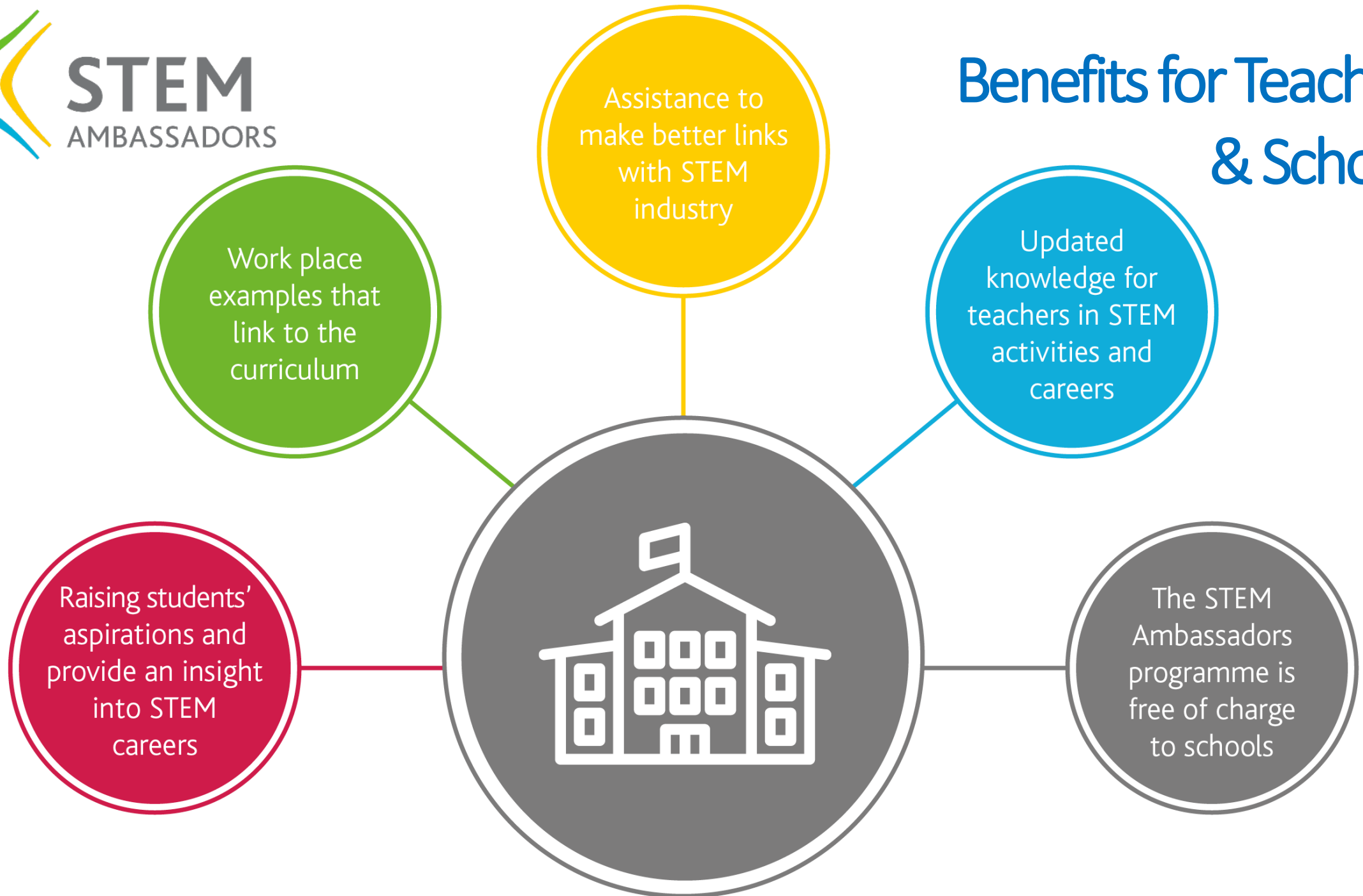
Benefits for STEM Ambassadors





STEM
AMBASSADORS

Benefits for Teachers & Schools



STEM Ambassadors Evaluation

STEM Ambassadors



58%



58%



82%



91%

(Source: National Foundation for Educational Research, 2015)

STEM Ambassadors Evaluation

Young people

Increased motivation to
enter STEM employment/
apprenticeships



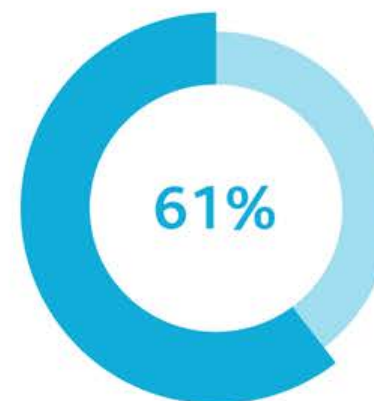
Increased awareness
of STEM career and
employment



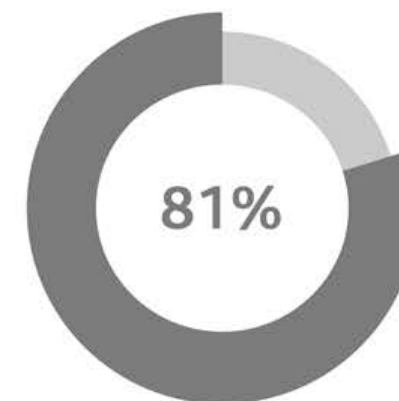
Rated STEM activity
as 'good' or 'very
good'



Science is
important
for everyday life



Increased understanding
of STEM business
industry



What inspired you?

**... and where are you
now?**

Space Engineering – Post 16 course A Level Maths, A Level Physics, BTEC Level 3 Engineering

Oliver did really well, and produced an excellent report on air quality around Manila. Elements of this report are now being used as part of a multi-million pound bid into the UK Space Agency. Oliver understood and manipulated satellite data, as well as modelled data, and produced an excellent plan for the deployment of 200 ground-based sensors in the Manila area. The report was well-presented, and he delivered some useful datasets in excel too. Oliver was a pleasure to have with us for a week. Dr Rob Parker, University of Leicester



Space Placements in Industry (SPIN)

Minimum 8 week summer placements

I really benefited from the SPIN programme because it gave me an idea of what companies the space industry in the UK are actually made up of, and what they do, something that I hadn't really known before. I hadn't even heard of RAL Space before I applied! The talks at the beginning of the programme were really great – not just informative but eye-opening. Having all those different companies and the Space Applications Catapult explain what happens in the UK space industry day-to-day was one of the most useful aspects of the programme. Laurence de Bruxelles, 2013 Intern



Without industry buy in?

- Careers advice and awareness suffers
- Educators and trainers may focus on developing the wrong skills
- Solving the wrong problems!
- Scale is limited

Lessons from the Higher Apprenticeship

- Framework developed with industry
- Minimal uptake: course will be mothballed
 - Who pays for training?
- Does the sector speak with one voice? If not, how can you be heard?

Year of Engineering

<http://www.dft.gov.uk/year-of-engineering-2018/>



Big Bang Fairs - www.thebigbangfair.co.uk

British Science Association CREST Awards - www.crestawards.org/about-crest-awards/volunteer

Engineering Development Trust - <http://www.etrust.org.uk/>

ESERO-UK, the UK's European Space Education Resource Office - www.stem.org.uk/esero

National Space Academy - nationalspaceacademy.org

Royal Astronomical Society – www.ras.org.uk

Space Placements in Industry (SPIn) - sa.catapult.org.uk/people/space-placements-industry-spin

Space summer schools

STEM Ambassadors - www.stem.org.uk/stem-ambassadors/ambassadors

TeenTech - <http://www.teentech.com/>

Tomorrow's Engineers - www.tomorrowsengineers.org.uk/about-us/overview-for-employers

UKSEDS annual conference – conference for 2017 has passed, info here for reference ukseds.org/nssc2017

UK Space Agency Education and Skills – Jeremy Curtis, Kathie Bowden and colleagues