



Tomorrow's Engineers 2013/14 Evaluation

Key Findings

**Prepared for EngineeringUK
by Boxclever Consulting**

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INTRODUCTION

The overarching aim of the Tomorrow's Engineers programme is to increase the pipeline of future engineers by:

- improving awareness about engineering and what engineers do among pupils and their teachers
- enthusing young people about engineering and the career opportunities available
- encouraging young people to make the subject choices that keep open the routes into a career in engineering

The impact of programme is evaluated and, where appropriate, compared with the "all UK" responses identified through EngineeringUK's annual Engineers and Engineering Brand Monitor (EEBM).

EVALUATION OBJECTIVES

The objectives of the Tomorrow's Engineers programme 2013/14 quantitative evaluation were:

- To determine if, as a result of taking part in the Tomorrow's Engineers programme 2013/14, students have a positive perception of engineering
- to ascertain the level of desirability of engineering careers
- to identify if and how careers materials were distributed at the events
- to measure the attitudes to science, technology, engineering and maths (STEM) more generally.

The research was designed to evaluate the activities in terms of overall perception and knowledge of engineering and attitudes towards engineering as a career amongst both young people and teachers, so that we could ascertain:

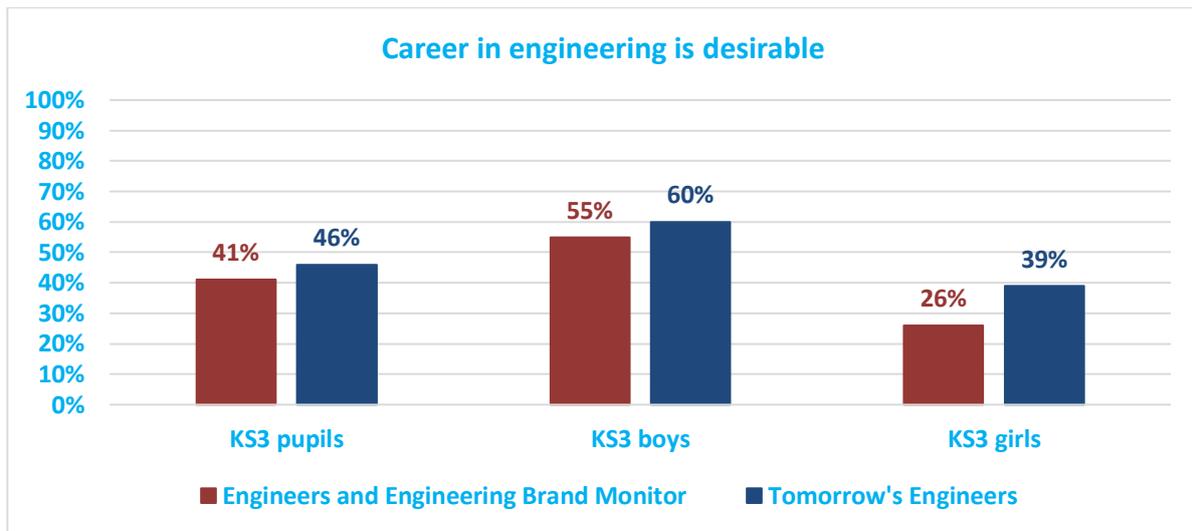
- the perception of engineering that young people have following the activity
- the level of desirability amongst young people and recommendation amongst teachers of engineering careers
- how attitudes towards engineering amongst young people and teachers compare with those surveyed in the EEBM
- the relative performance of the different activities and delivery partners amongst young people and teachers so as to identify areas of best practice and where TE staff need to support individual delivery partners to help them improve



KEY FINDINGS

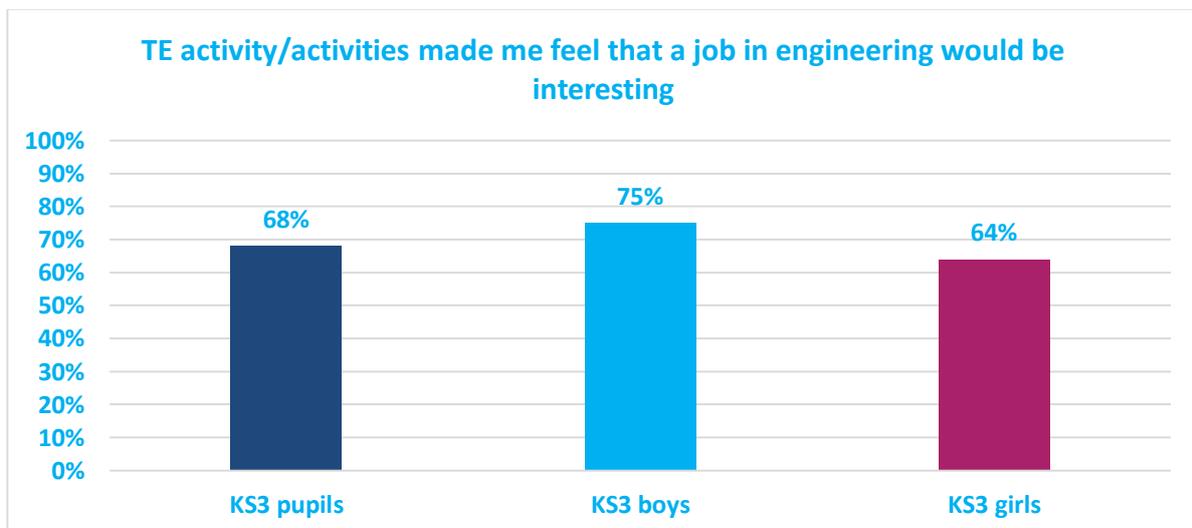
The desirability of a career in engineering was higher for Key Stage 3 students who had experienced Tomorrow's Engineers than those asked in the Engineers and Engineering Brand Monitor (EEBM) while engineering as a career was viewed by Key Stage 1/2 and 3 pupils in a positive light.

Almost half (46%) of Tomorrow's Engineers Key Stage 3 pupils thought that a career in engineering was desirable compared with 41% of those asked as part of the Engineers and Engineering Brand Monitor survey. More Key Stage 3 boys viewed a career in engineering as desirable compared with girls (60% vs 39%), though with a smaller gap than in the EEBM (55% vs 26%).

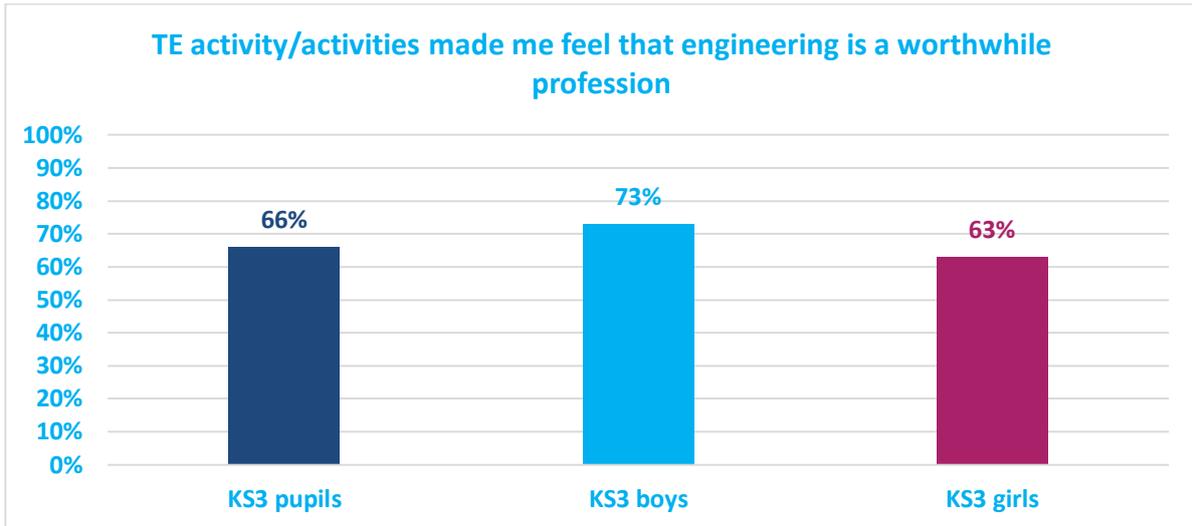


Q. How desirable do you believe a career in the following areas to be? – Engineering: '4' and '5 very desirable'. TE Base: KS3 pupils (5292), KS3 boys (2258), KS3 girls (2592); EEBM Base: KS3 pupils (400), KS3 boys (206) KS3 girls (194)

More than two thirds (68%) of Key Stage 3 pupils felt that a job in engineering would be interesting and two thirds (66%) endorsed the statement that engineering is a worthwhile profession.



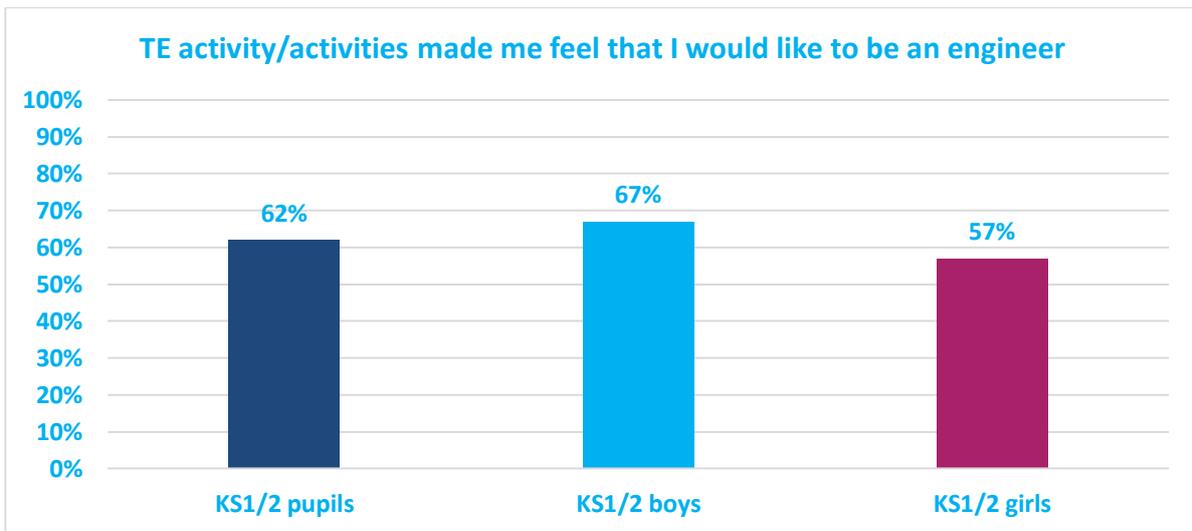
Q. These are some things which other people have said about the impact the activity, or series of activities, has had on them. To what extent do you agree or disagree with them? - It made me feel that a job in engineering would be interesting: 'Agree a little'/'agree a lot'. Base: KS3 pupils (5292), KS3 boys (2258), KS3 girls (2592)



Q. These are some things which other people have said about the impact the activity, or series of activities, has had on them. To what extent do you agree or disagree with them? -

It made me feel that engineering is a worthwhile profession: 'Agree a little'/'agree a lot'. Base: KS3 pupils (5292), KS3 boys (2258), KS3 girls (2592)

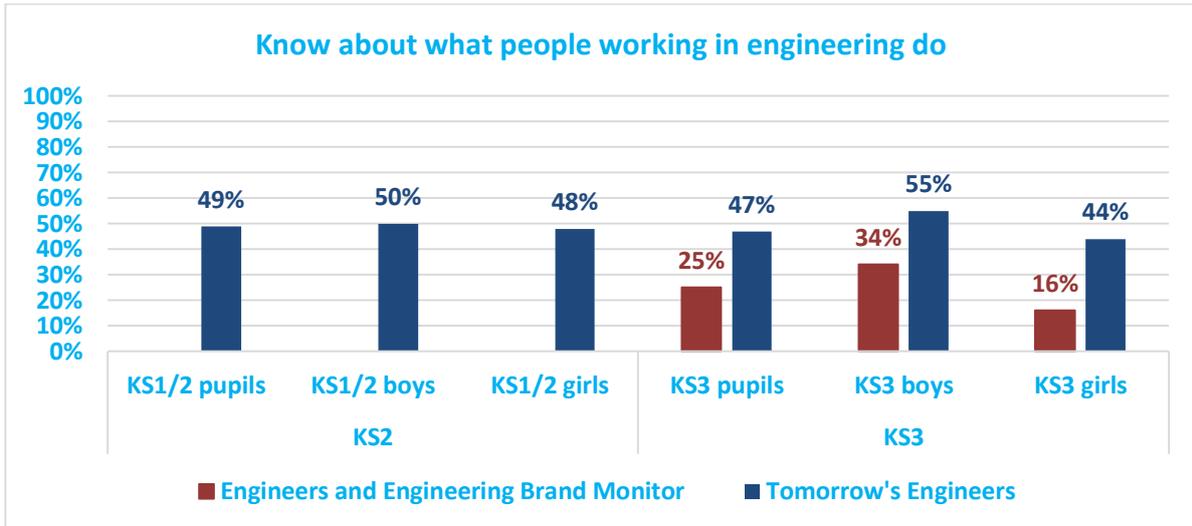
Nearly two thirds (62%) of Key Stage 1/2 pupils would like to be an engineer, including 67% of boys and 57% of girls.



Q. Do you agree or disagree that the activity, or series of activities, made you feel? - You would like to be an engineer: 'Agree'. Base: KS1/2 pupils (759), KS1/2 boys (365), KS1/2 girls (381)

Just under half of Key Stage 1/2 and Key Stage 3 pupils have a heightened knowledge of what engineers do, as a result of attending a Tomorrow's Engineers activity.

Just under half of Key Stage 1/2 (49%) and Key Stage 3 pupils (47%), said they know what engineers do ('4' or '5'). This means that Key Stage 3 pupils engaged in Tomorrow's Engineers activities had a better knowledge of what engineers do than those asked as part of the Engineers and Engineering Brand Monitor survey (47% vs. 25%).



Q. How much would you say you know about what people working in the following areas do – Engineering: ‘Know a little’/‘agree a lot’. TE Base: KS1/2 pupils (759), KS1/2 boys (365), KS1/2 girls (381), KS3 pupils (5292), KS3 boys (2258), KS3 girls (2592); EEBM Base: KS3 pupils (400), KS3 boys (206) KS3 girls (194)

Jobs in engineering are described as interesting, exciting and enjoyable by Key Stage 1/2 and 3 pupils who have attended a Tomorrow’s Engineers activity.

More than 8 in 10 Key Stage 1/2 (81%) and 7 in 10 Key Stage 3 pupils (72%) described a job in engineering as interesting. Equally encouraging is the level of endorsement for engineering jobs being seen as exciting (72% Key Stage 1/2, 57% Key Stage 3) and enjoyable (69% Key Stage 1/2, 57% Key Stage 3). Less than 1 in 10 Key Stage 1/2 (4% Boring, 3% Dull) and Key Stage 3 (9% Boring, 8% Dull) pupils would describe a job in engineering as boring or dull.

Encouragingly, more Key Stage 1/2 females endorsed a job in engineering as interesting than did males (85% vs. 77%). More Key Stage 3 females, however, viewed jobs in engineering as too complicated (27% vs. 13%), too difficult (16% vs. 7%) and boring (12% vs. 6%) compared to their male counterparts.

Words chosen to describe a job in engineering			
	KS1/2 pupils	KS1/2 boys	KS1/2 girls
Base	759	365	381
Interesting	81%	77%	85%
Exciting	72%	71%	73%
Fun	72%	71%	72%
Enjoyable	69%	68%	70%
Great	61%	60%	62%
Dirty/messy	30%	32%	29%
Too complicated	13%	12%	13%
Too difficult	6%	7%	6%
Boring	4%	4%	3%
Dull	3%	4%	2%

Q. Which of these words would you use to describe a job in engineering?

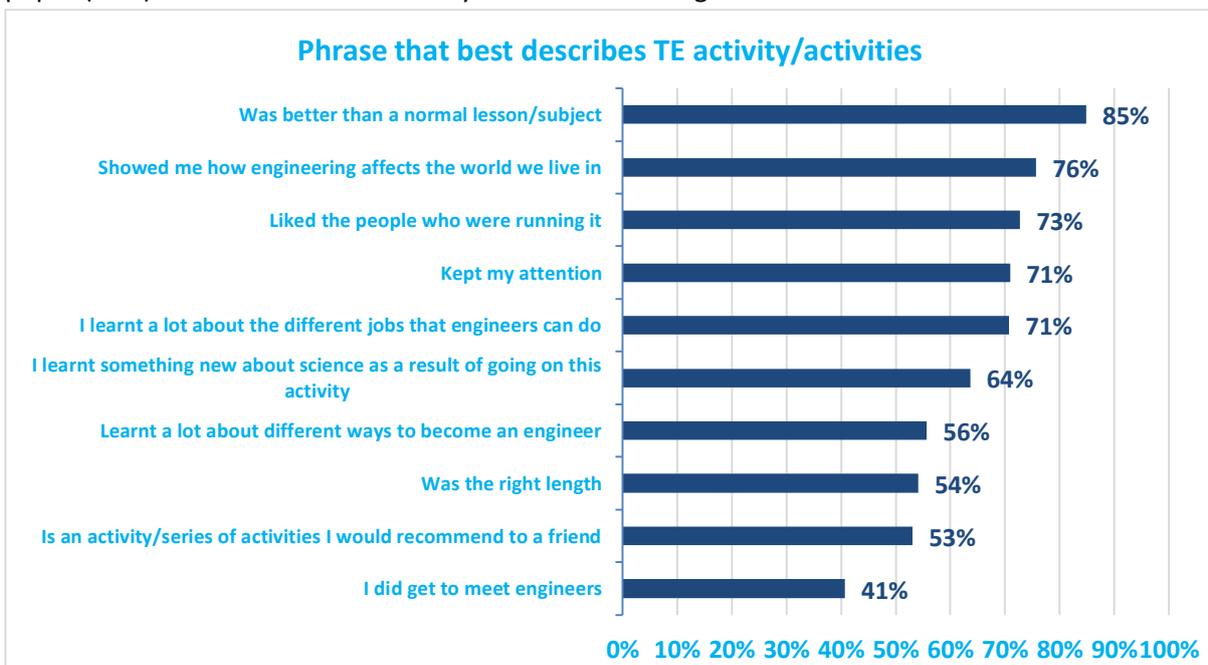


	KS3 pupils	KS3 boys	KS3 girls
Base	5,292	2,258	2,592
Interesting	72%	76%	74%
Creative	69%	72%	73%
Well paid	59%	63%	60%
Enjoyable	57%	67%	54%
Exciting	57%	69%	51%
Rewarding	55%	62%	54%
Respected	45%	49%	46%
Fun	44%	53%	40%
Dynamic	33%	39%	30%
Too complicated	20%	13%	27%
Dirty/greasy/messy	18%	17%	20%
Too technical	17%	10%	24%
Too difficult	12%	7%	16%
Boring	9%	6%	12%
Dull	8%	6%	10%

Q. Which of these words would you use to describe a job in engineering?

The majority of Key Stage 3 students rated the activities highly, with strong endorsement of knowledge of engineering roles, how to become an engineer and how engineers affect the world we live in.

Through Tomorrow’s Engineers activities, pupils learnt about how engineers affect the world they live in (76%) and the different jobs that engineers can do (71%). It was also encouraging that over half of pupils (56%) learnt about different ways to become an engineer.

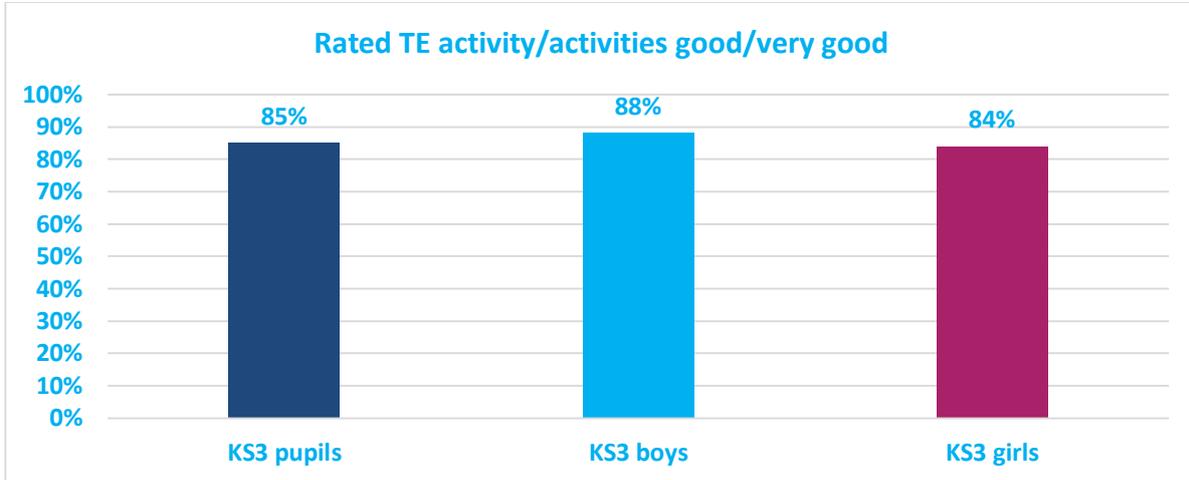


Q. Which if any of these phrases best describes the activity, or series of activities, you have done? Base: KS3 pupils (5292), KS3 boys (2258), KS3 girls (2592)



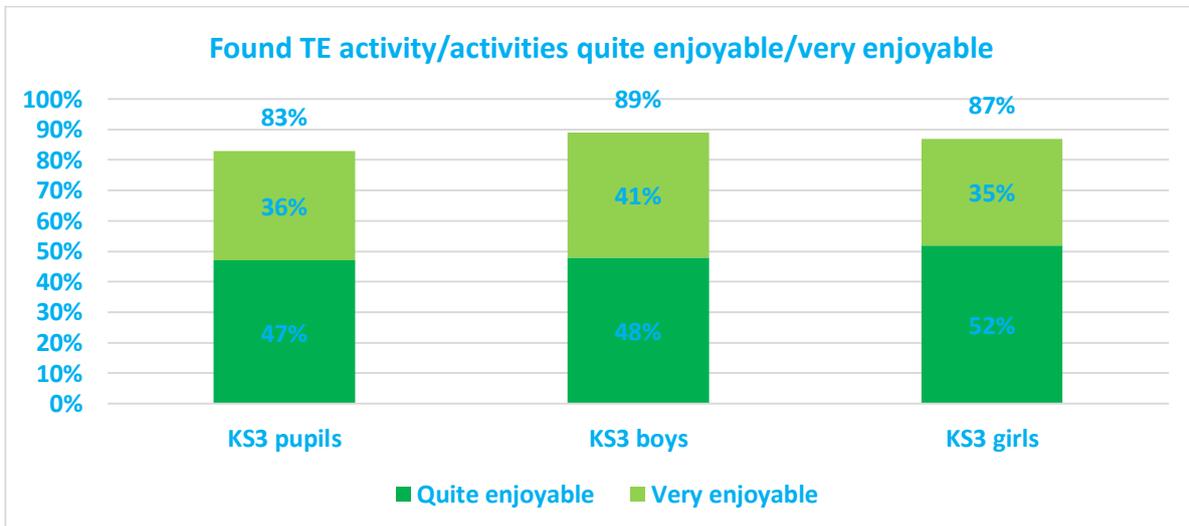
Overall, both male and female pupils were very positive about the activities. Boys found them to be more enjoyable and also were more likely to view a career in engineering as desirable.

For Key Stage 3 pupils, boys were a little more positive than girls in their overall rating (88% vs 84% - 'good or very good').



Q. How would you rate the activity or series of activities, you took part in? – 'Good'/'very good'. Base: KS3 pupils (5292), KS3 boys (2258), KS3 girls (2592)

Key Stage 3 male pupils (89% vs 87% female - '4' or '5' enjoyable) also found the activities to be more enjoyable than females. The gap between Key Stage 3 gender groups finding the activities 'very enjoyable' is narrower than we saw in 2013 (2013 male 44% female 32%, 2014 male 41% female 35%).

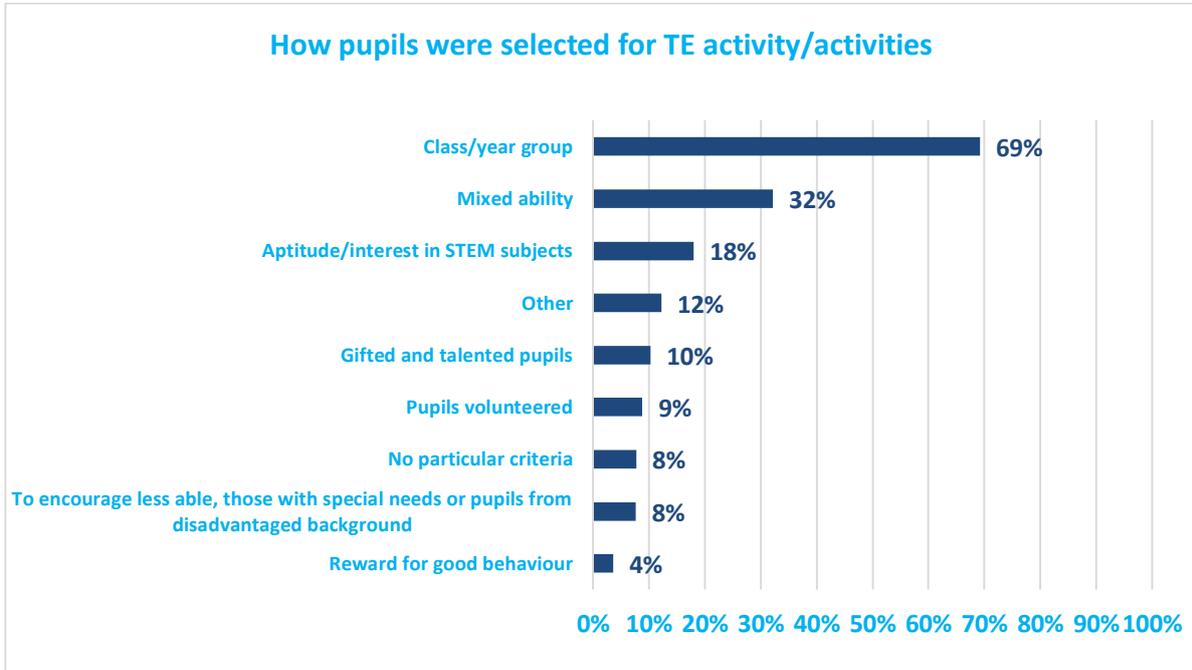


Q. How enjoyable did you find the activity or series of activities? – 'Quite enjoyable'/'very enjoyable'. Base: KS3 pupils (5,292), KS3 boys (2,258), KS3 girls (2,592)



The variety of pupil selection methods used by Teachers ensured that Tomorrow's Engineers activities engaged a wide range of pupils.

When selecting pupils to attend Tomorrow's Engineers activities, teachers used a wide range of methods. Most common was selection based on class or year group (69%) followed by a mix of ability (32%), suggesting that Tomorrow's Engineers activities are engaging a range of students whose enthusiasm for, and knowledge of, the subject varies considerably.



Q. How were the pupils selected for this activity or series of activities? Base: educators (1105)

Tomorrow's Engineers has also engaged a wide range of Key Stage 3 pupils with 17% of schools engaged having a high proportion of students receiving free meals and 16% that have a high or very high proportion of pupils with English as a foreign language.