IFF Research

Engineers and Engineering Brand Monitor 2015

Key Findings

Prepared for Engineering UK
By IFF Research

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We gratefully acknowledge the support of Pearson in delivering this study

IFF Research

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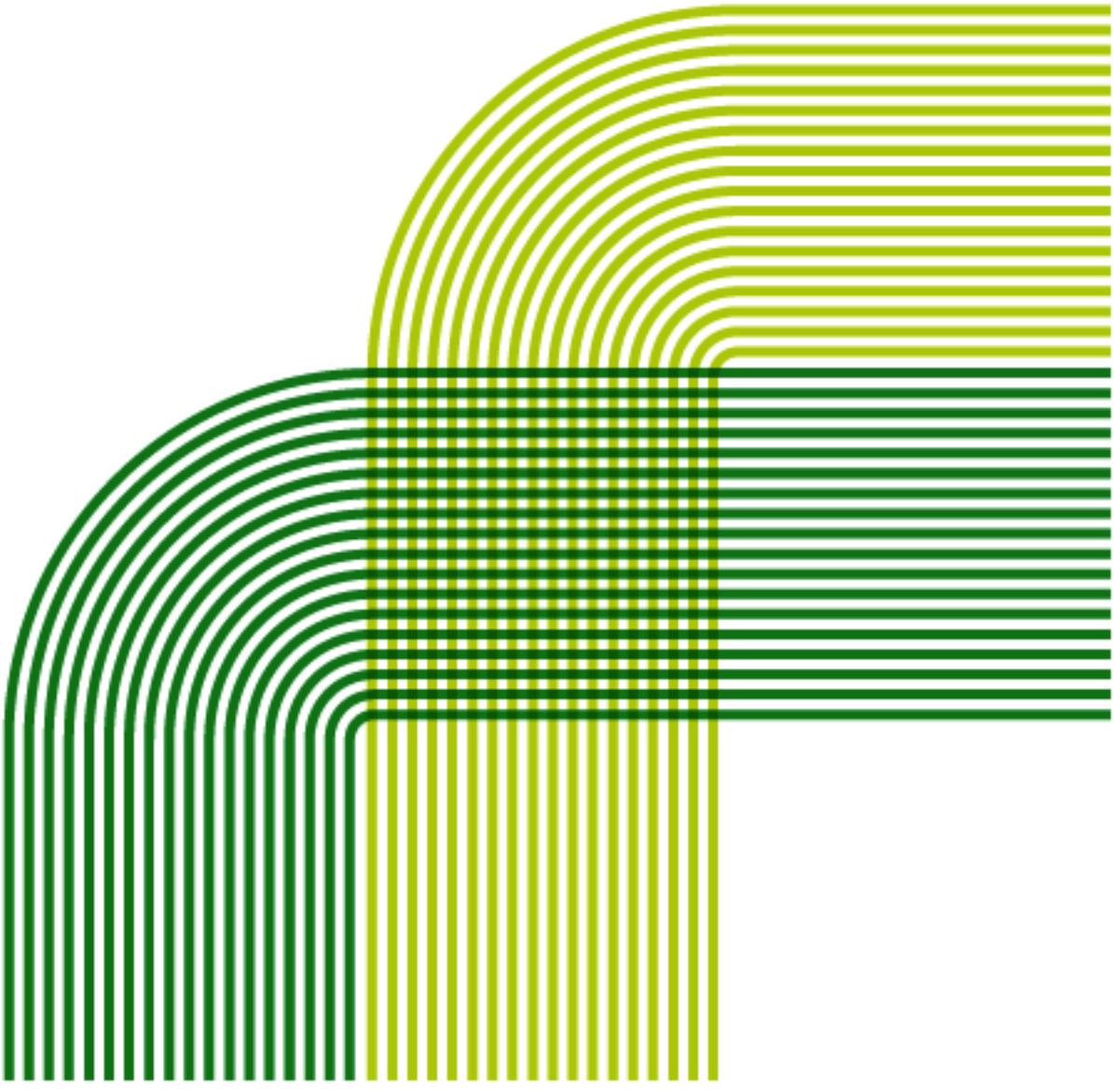


Contents

1 Executive Summary

1.1 Introduction

The Engineers and Engineering Brand Monitor (EEBM) has, since 2010, provided an annual review of the perception of engineering among pupils aged 7-19 years, the general public aged 20+ and teachers of Science, Technology, Engineering and Maths (STEM) subjects. As well as capturing a thorough annual snapshot of national perceptions of engineers and engineering, the EEBM produces trend data that helps us shape our programmes, improve our impact and, for our own and others' programmes, form a national benchmarking tool for evaluation processes.

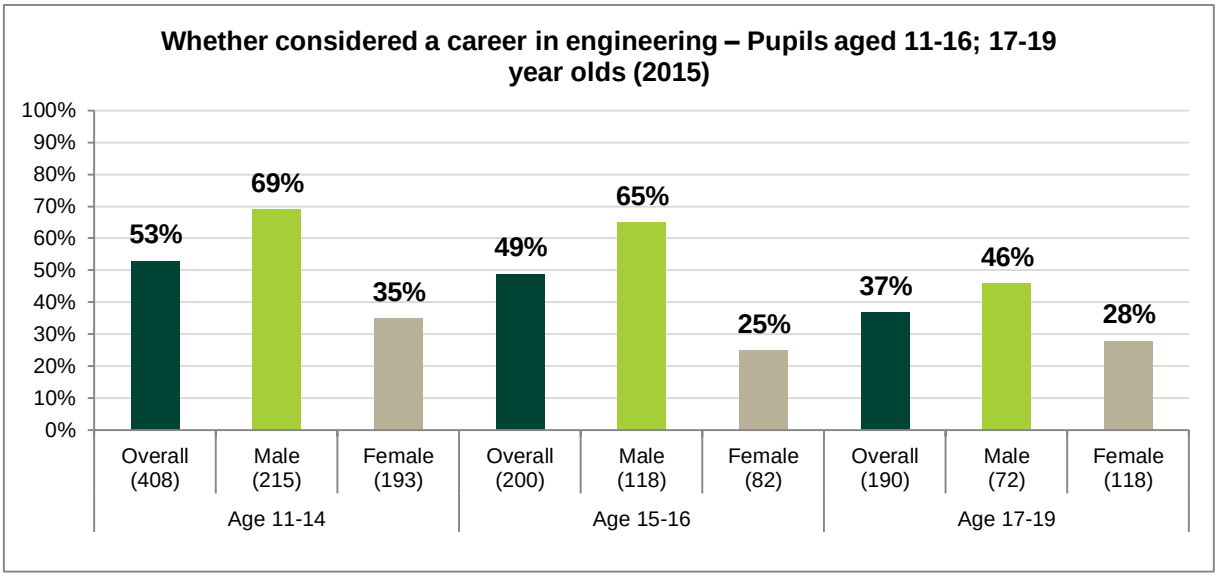
This report summarises the key findings of the 2015 EEBM survey and, where relevant, makes comparisons to the survey results in previous years.

1.2 Consideration of engineering

Half of pupils aged 11-16 would consider a career in engineering (11-14: 53%; 15-16: 49%). The proportion of those aged 15-16 who would consider a career in engineering (49%) has increased significantly from 39% in 2014.

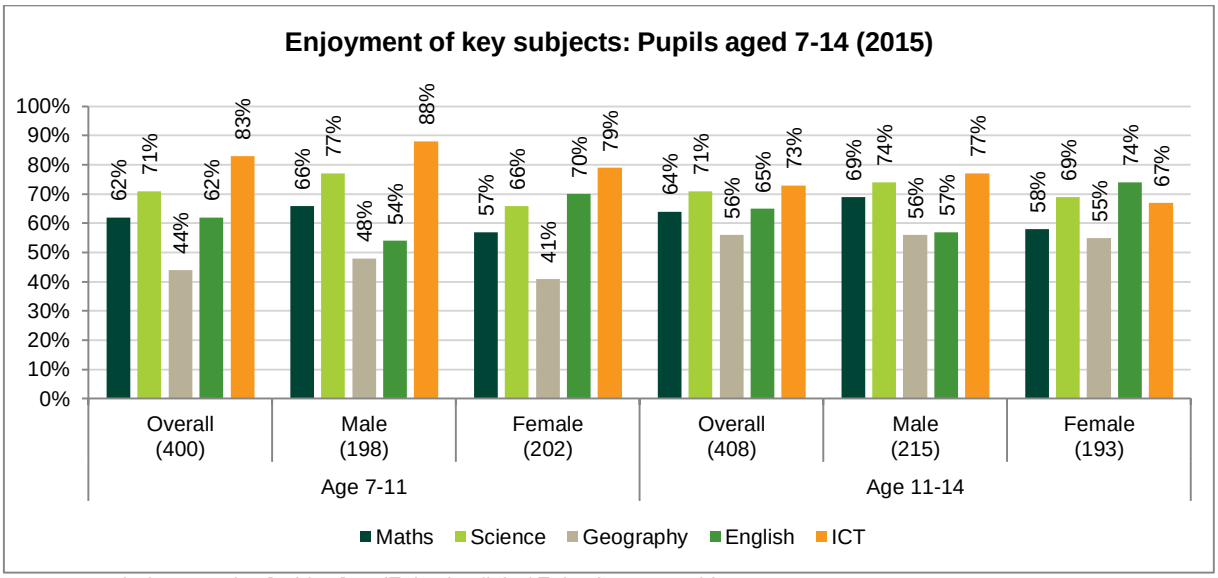
37% of 17-19 year olds had considered a career in engineering, an increase from 33% last year. Among females of that age, 28% had considered a career in engineering, an increase from 21% in 2014.

Boys remain more likely than girls to consider a career in engineering: among 11-14s, 69% of boys vs 35% of girls; for 15-16s, 65% of boys vs 25% of girls.

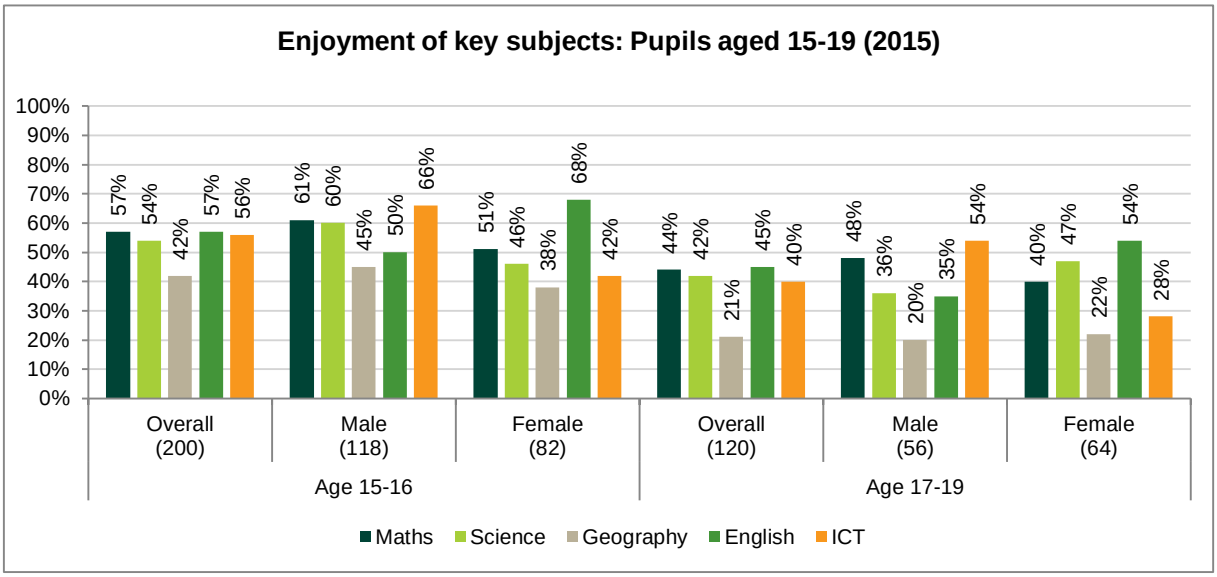


Q: Pupils aged 11-19 - Do you think you would ever consider a career in engineering?
General Public aged 17-19 - Have you ever considered a career in engineering?

When 7-19s were asked about their enjoyment of different school subjects, STEM subjects were broadly in line with English, although 7-14s were most likely to report enjoying ICT.

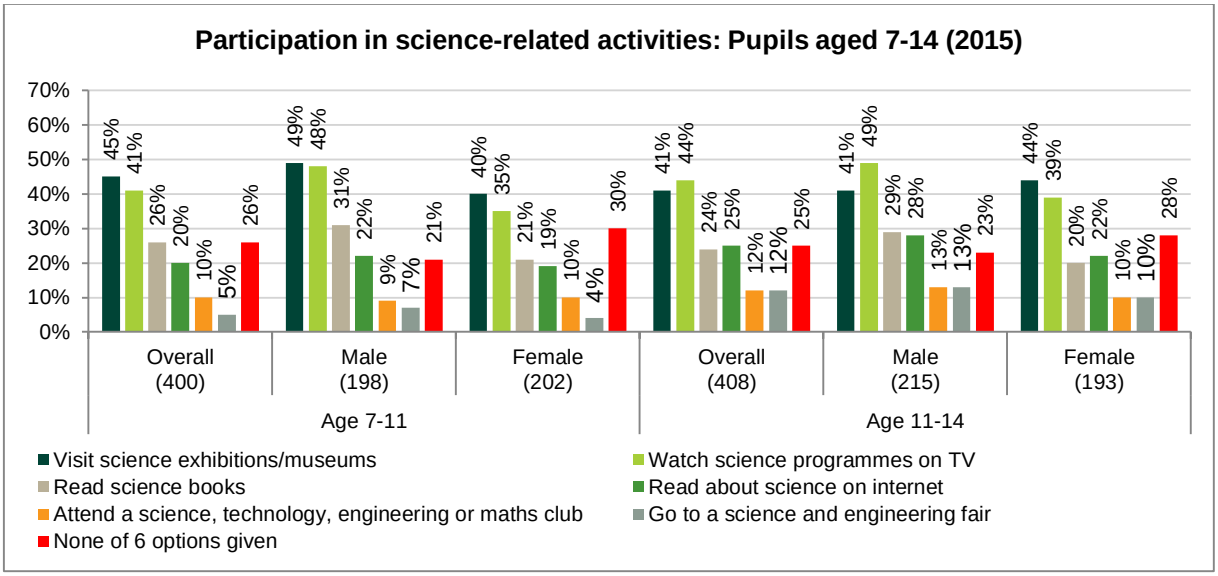


Q: How much do you enjoy [subject]? – 'Enjoy it a little / Enjoy it very much'

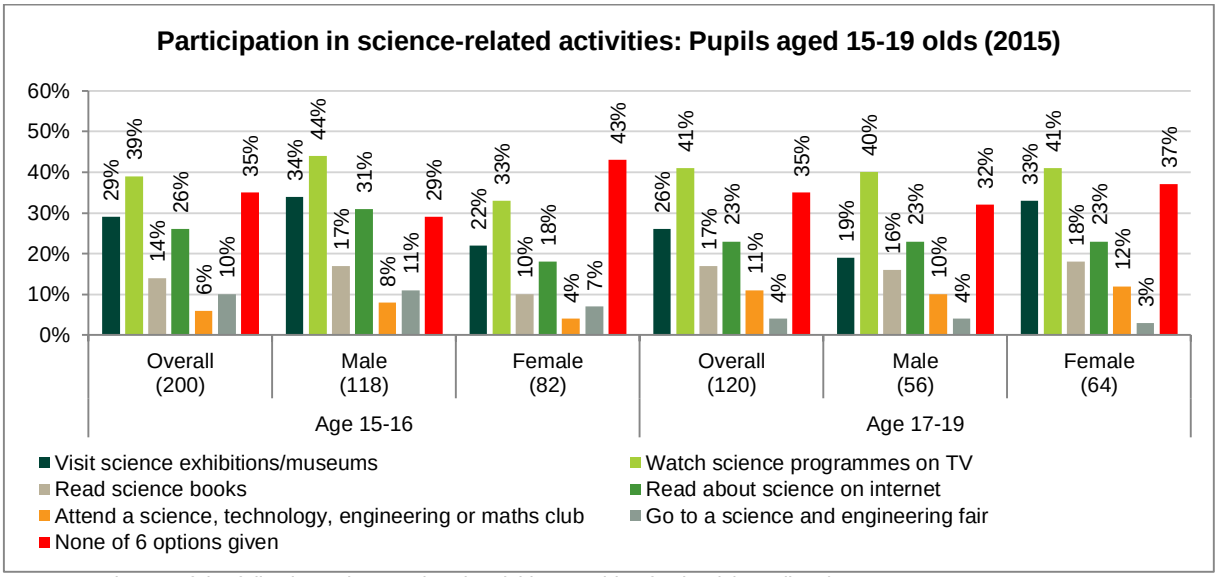


Q: How much do you enjoy [subject]? – 'Enjoy it a little / Enjoy it very much'

The proportion of 11-14s and 15-16s taking part in science-related activities outside of school has increased since 2014: from 63% to 70% for 11-14s and from 48% to 61% for 15-16s. The types of activity participated in are presented below.



Q: Do you do any of the following science related activities outside of school (or college)?

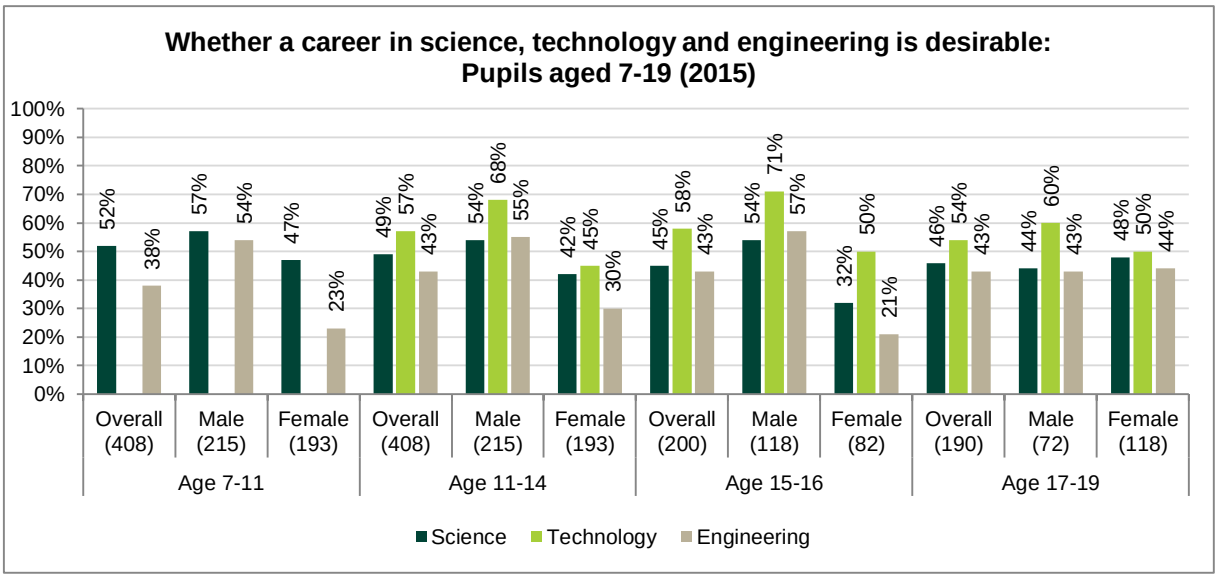


Q: Do you do any of the following science related activities outside of school (or college)?

The most commonly recalled science/engineering-promotion activity among teachers was The Big Bang Fair (59%).

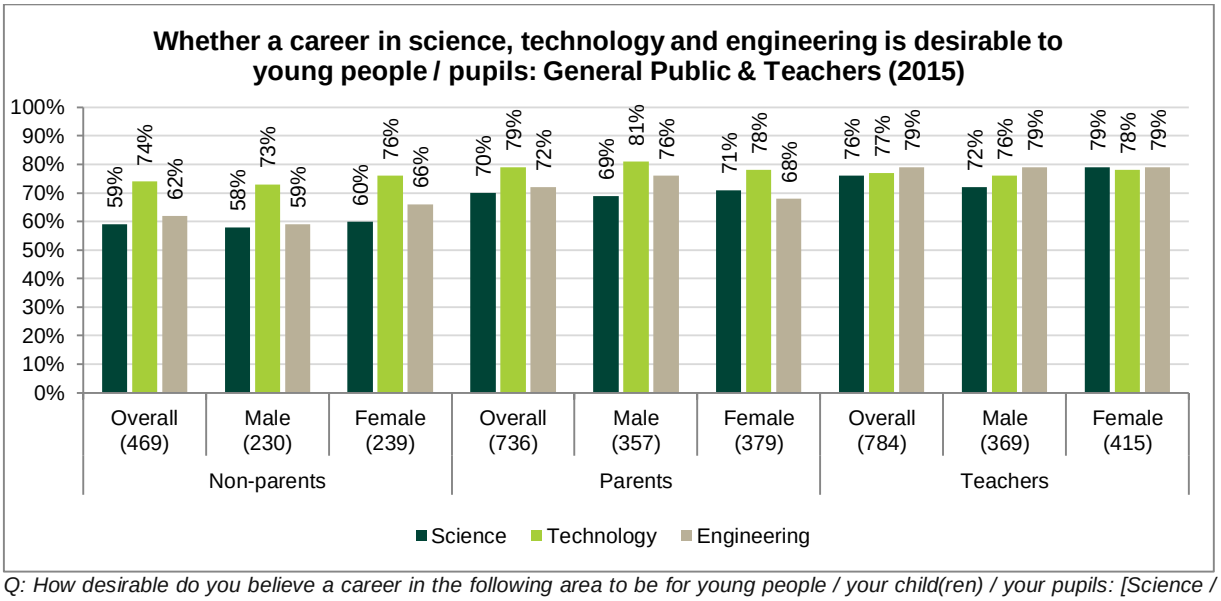
1.3 Desirability of engineering

Just over two-fifths (43%) of pupils aged 11-14 believe a career in engineering to be desirable, a similar level to 2014 (41%) and part of a year on year increase since 2011 (27%). Meanwhile, 43% of 15-16s believe a career in engineering to be desirable, compared with 35% in 2014.



Q: How desirable do you believe a career in the following area to be: [Science / Technology / Engineering]? – '4 / 5-Very desirable'

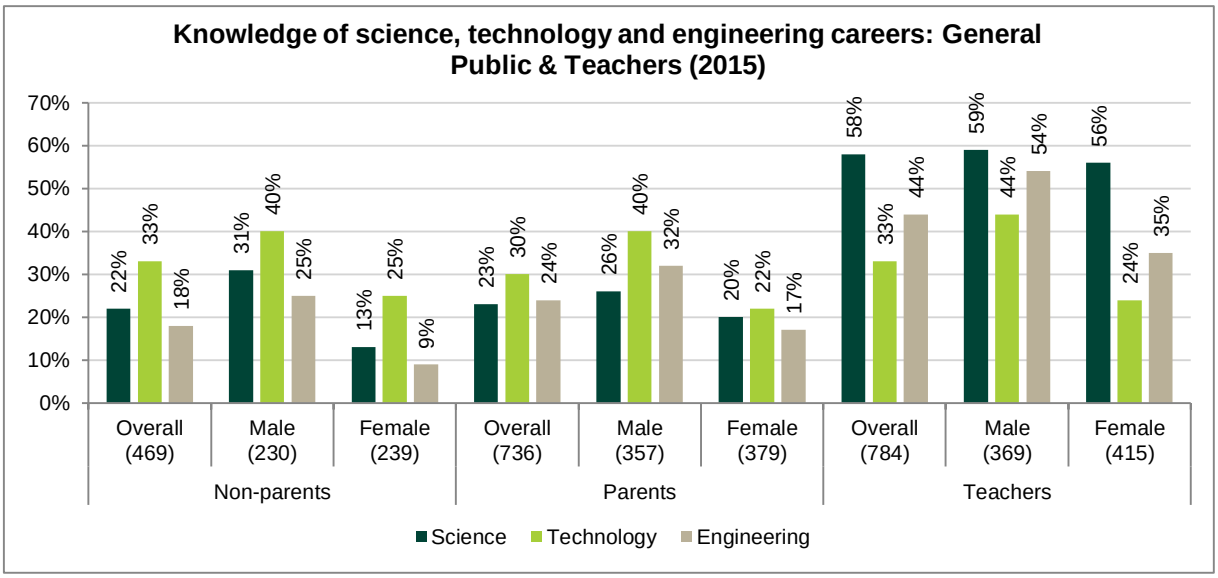
Among teachers, the proportion viewing engineering careers as desirable for their pupils has increased significantly from 57% to 79% since 2014, and teachers are nearly twice as likely as pupils to view a career in engineering as desirable. In addition, the proportion of teachers viewing a career in engineering as undesirable for their pupils has fallen from 17% in 2014 to 8% in 2015.



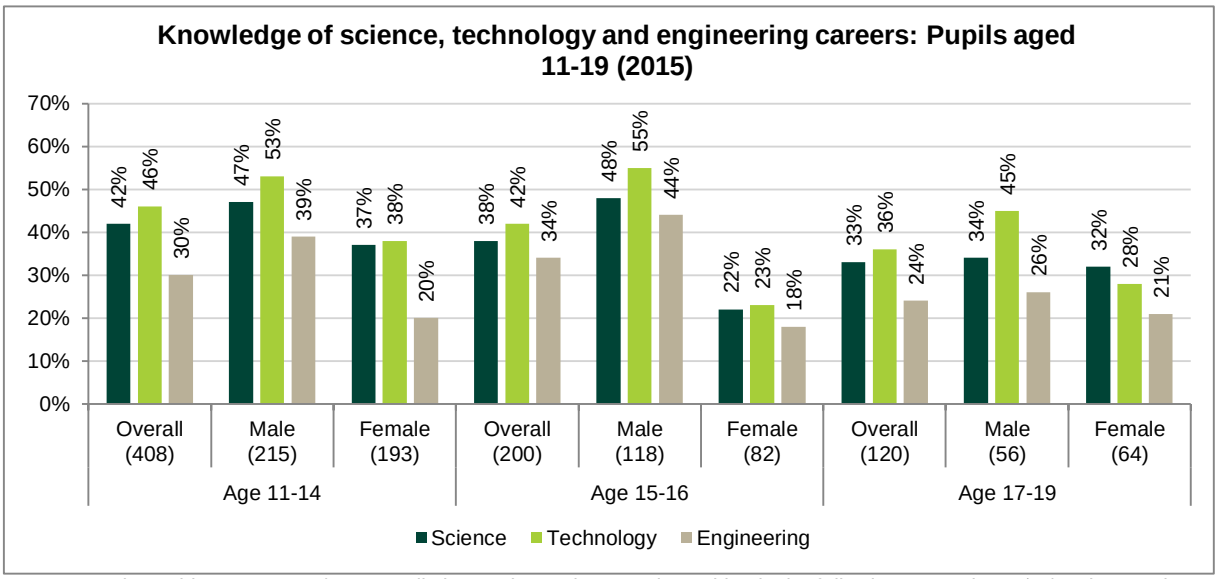
Q: How desirable do you believe a career in the following area to be for young people / your child(ren) / your pupils: [Science / Technology / Engineering]? – '4 / 5-Very desirable'

1.4 Knowledge and perceptions of engineering

With the exception of teachers (Science 58%, Technology 33%, Engineering 44%), all audiences are more likely to say they know about what people working in technology do, than those working in engineering or science.

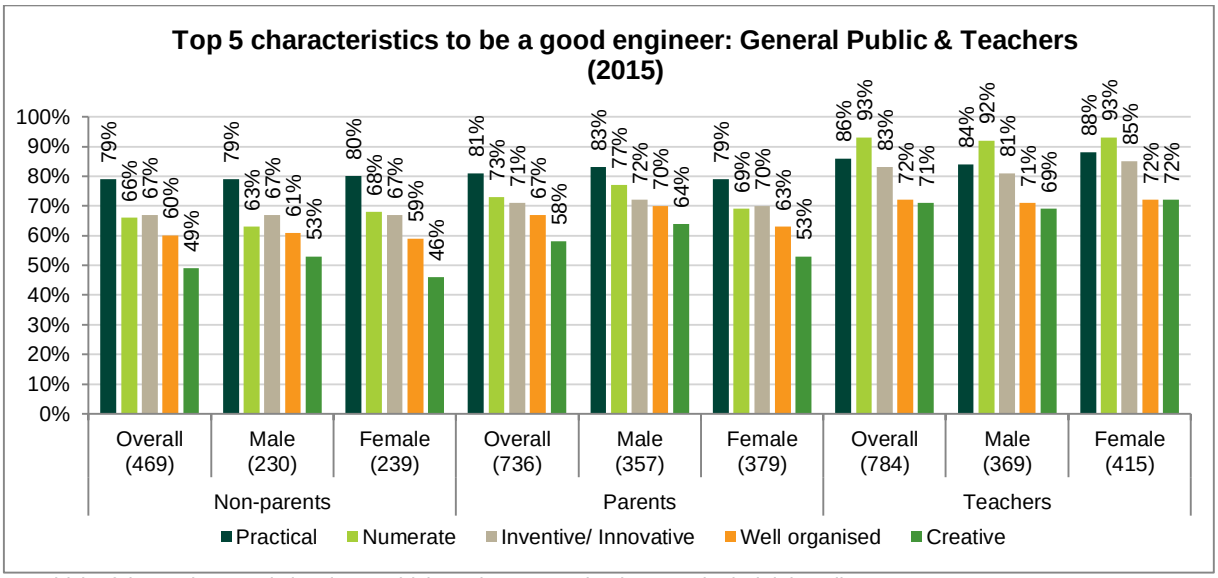


Q: How much would you say you know about what people working in the following areas do? – '4 / 5-I know a lot about it'



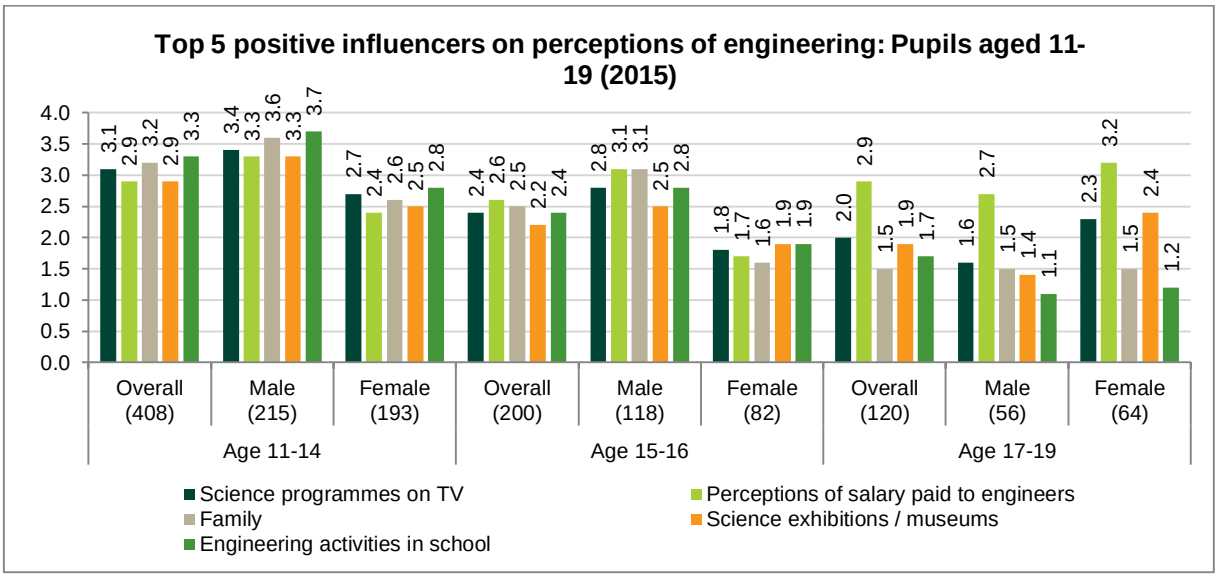
Q: How much would you say you / your pupils know about what people working in the following areas do? – '4 / 5-I know a lot about it'

Among all adults, the most commonly mentioned characteristics felt to be required for a career as an engineer, were those of being 'practical', 'numerate' and 'inventive / innovative'.



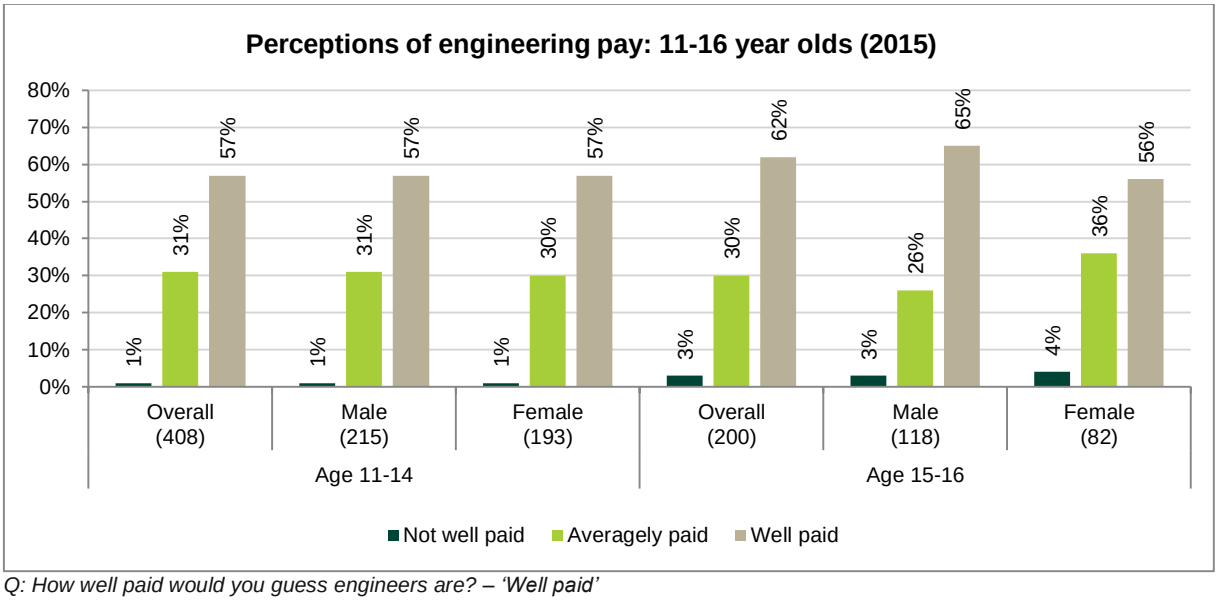
Q: Which of these characteristics do you think engineers need to have to do their job well?

When asked which of 12 factors influenced their perceptions of engineering, for 11-14s "engineering activities in schools" and for 15-19s "the perception of salary paid to engineers" were the most positive influences.



Q: How positively or negatively do the following influence your perception of engineering? – Mean

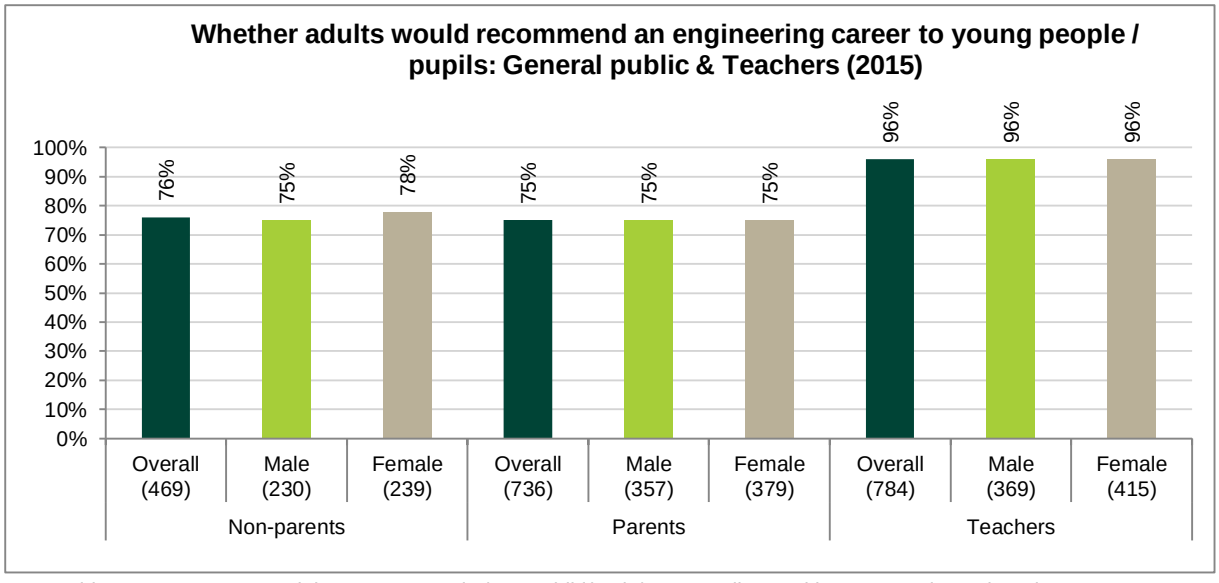
While 11-16s reported that they believed engineers were well paid, 17-19 year olds under-estimated average (graduate) starting salaries for engineers £19,744 estimate vs £27,079 actual. Adults similarly under-estimated the average salary paid to professional engineers.



Q: How well paid would you guess engineers are? – 'Well paid'

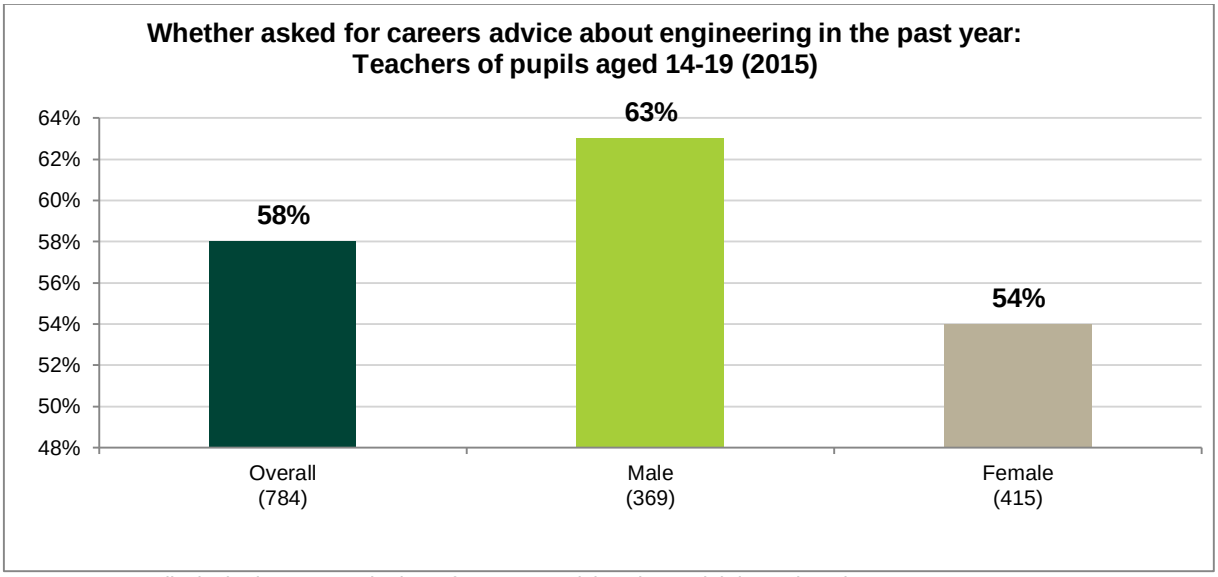
1.5 Career pathways and influencers

The majority of teachers (96%), parents (75%) and non-parents (76%) would recommend a career in engineering to their pupils / child(ren) / young people. Among parents of 7-14s, an even higher proportion (80%) would recommend a career in engineering to their children. This suggests that all of these audiences have potential to act as a positive influence on the aspirations of young people to pursue engineering careers.



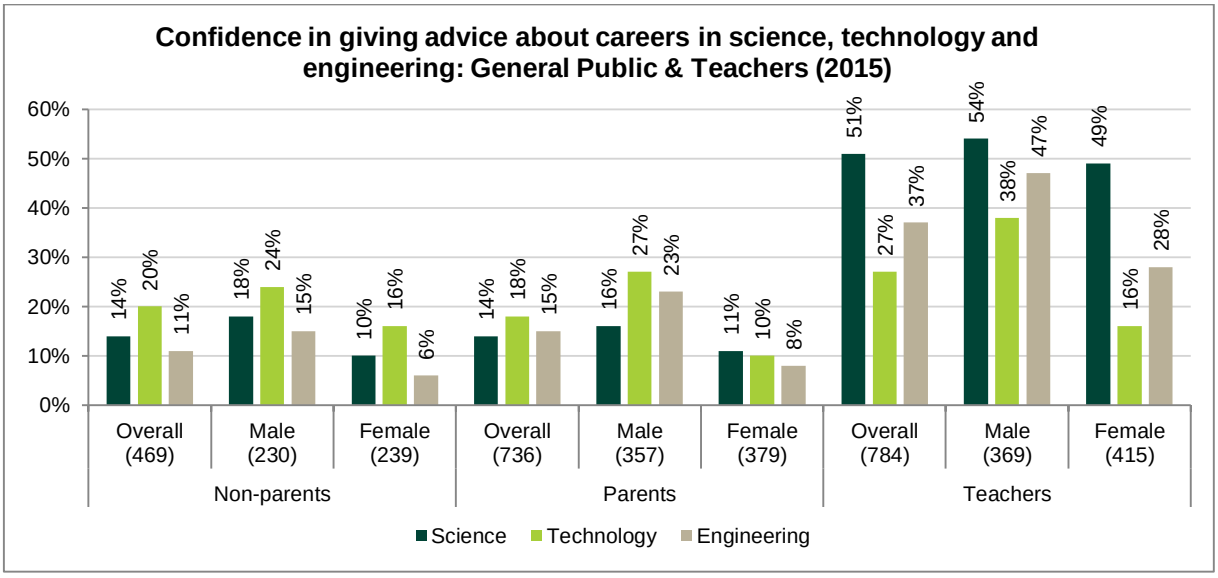
Q: Would you ever recommend that young people / your child(ren) / your pupils consider a career in engineering?

Three in five (58%) of teachers of pupils aged 14-19 reported that they had been asked for careers advice about a job in engineering by one of their pupils within the last year. This is similar to the proportion in previous years' surveys.



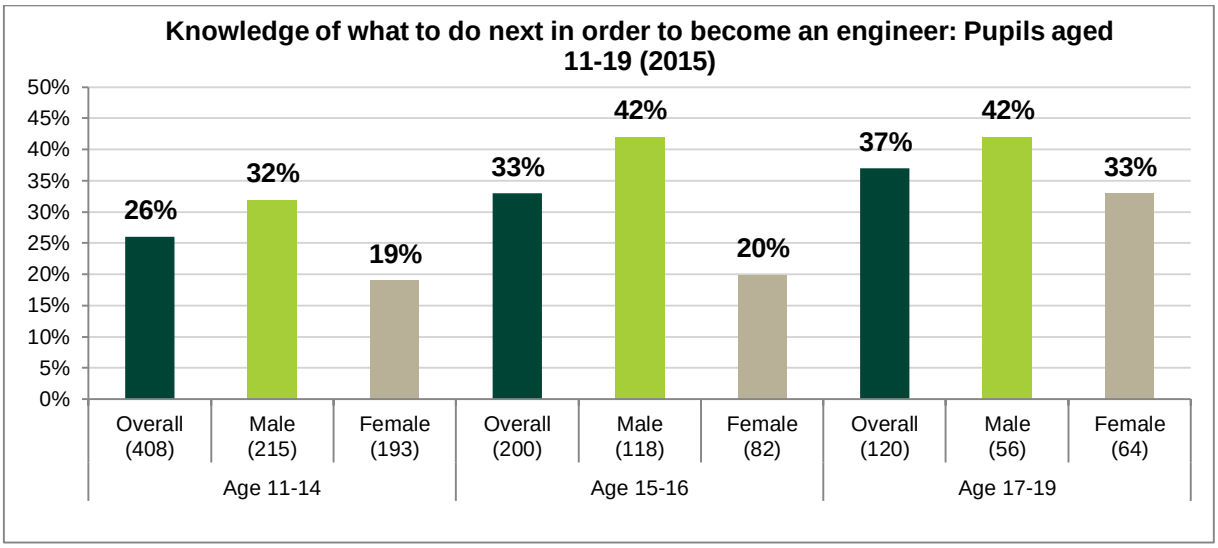
Q: Have any pupils, in the last year, asked you for careers advice about a job in engineering?

Among all teachers, only two in five (37%) felt confident giving advice on engineering careers.

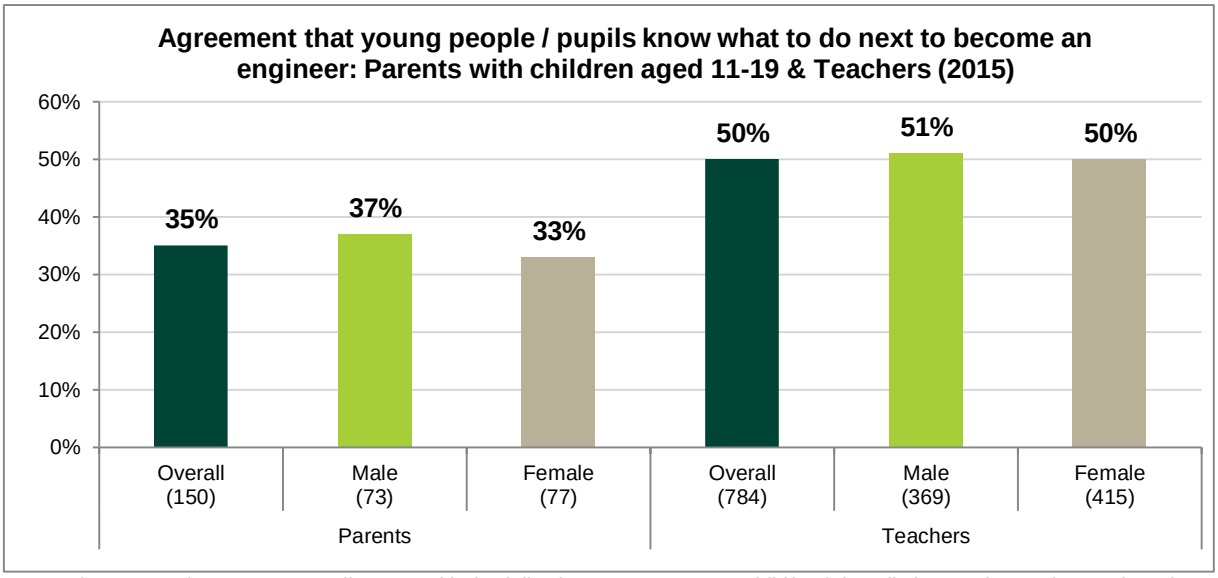


Q: How confident do you feel in giving advice about careers in the following areas? – '4 / 5-Very confident'

Teachers (50%) were more likely to believe that their pupils know what to do next to pursue a career in engineering than pupils themselves (11-14: 26%; 15-16: 33%; 17-19: 37%).

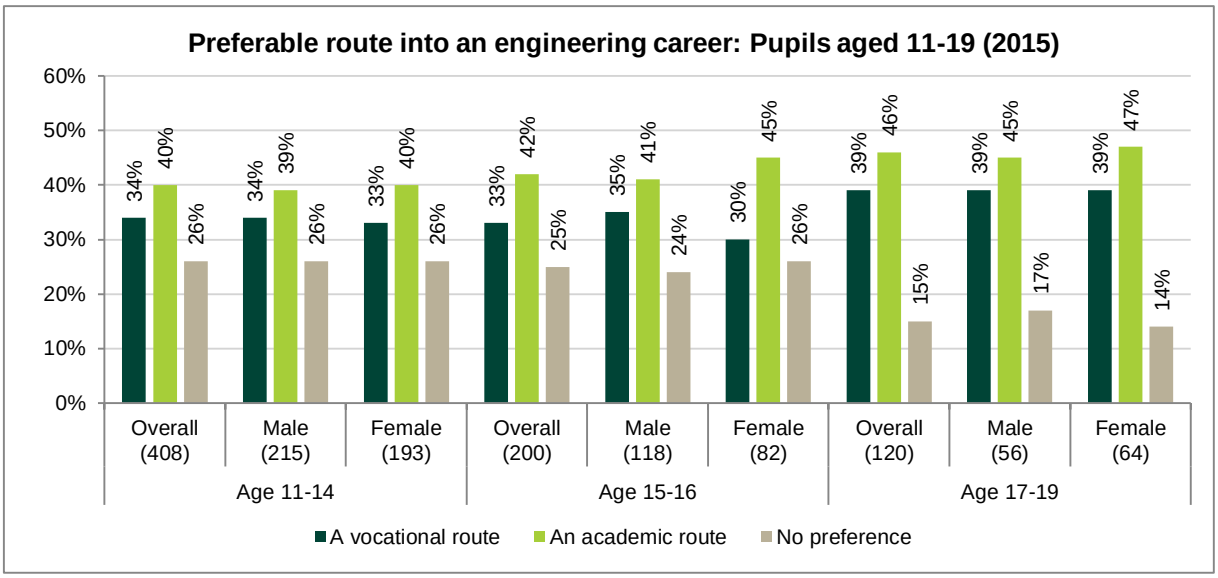


Q: To what extent do you agree or disagree with the following statements: I know what to do next in order to become an engineer? – 'Agree a little / Agree a lot'

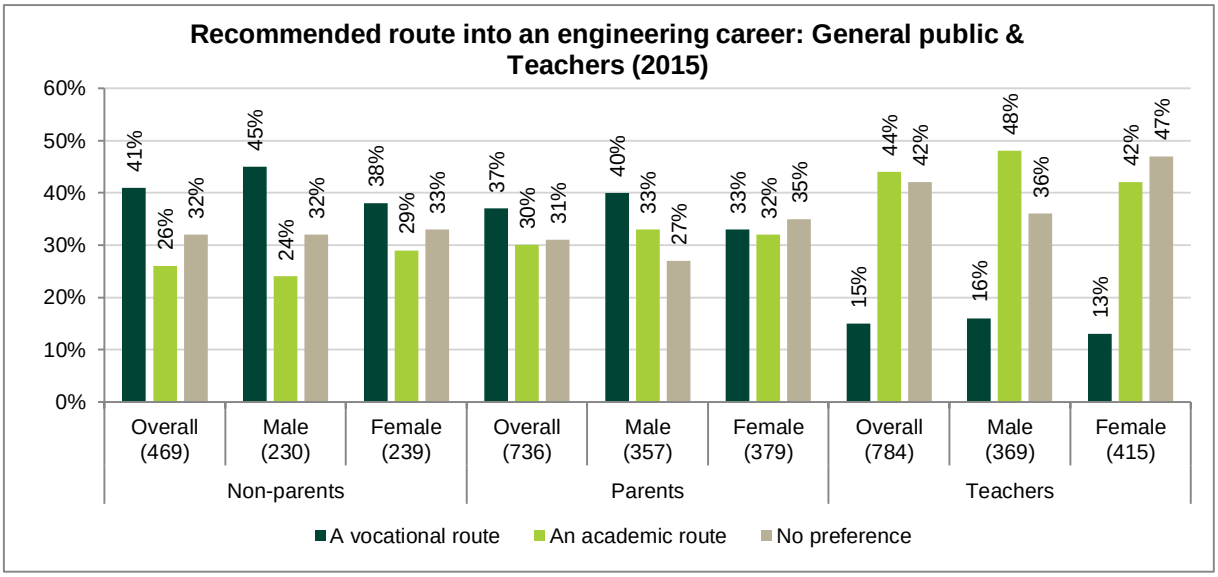


Q: To what extent do you agree or disagree with the following statements: My child(ren) / pupils know what to do next in order to become an engineer? – 'Agree a little / Agree a lot'

Pupils and teachers were more likely to consider / recommend an academic route (11-14: 40%; teachers: 44%) into engineering than a vocational route (11-14: 34%; teachers: 15%). Parents (vocational: 37%; academic: 30%; no preference: 31%) and non-parents (vocational: 41%; academic: 26%; no preference: 32%) were more likely to recommend a vocational route.

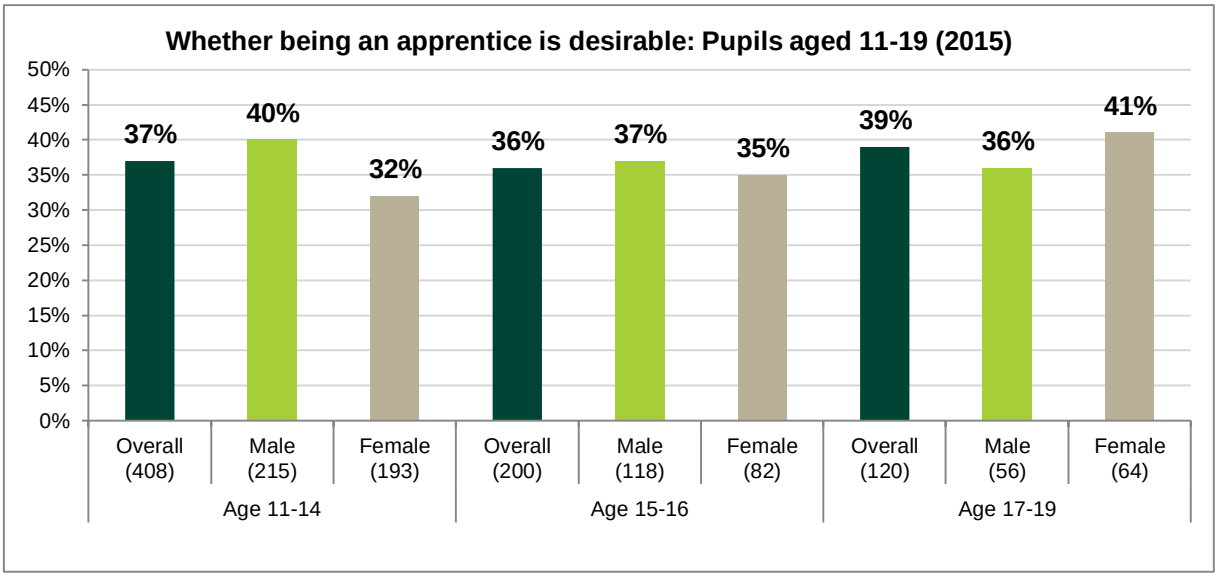


Q: If you were going to pursue a career in engineering, which of the following two routes would you be most likely to consider?

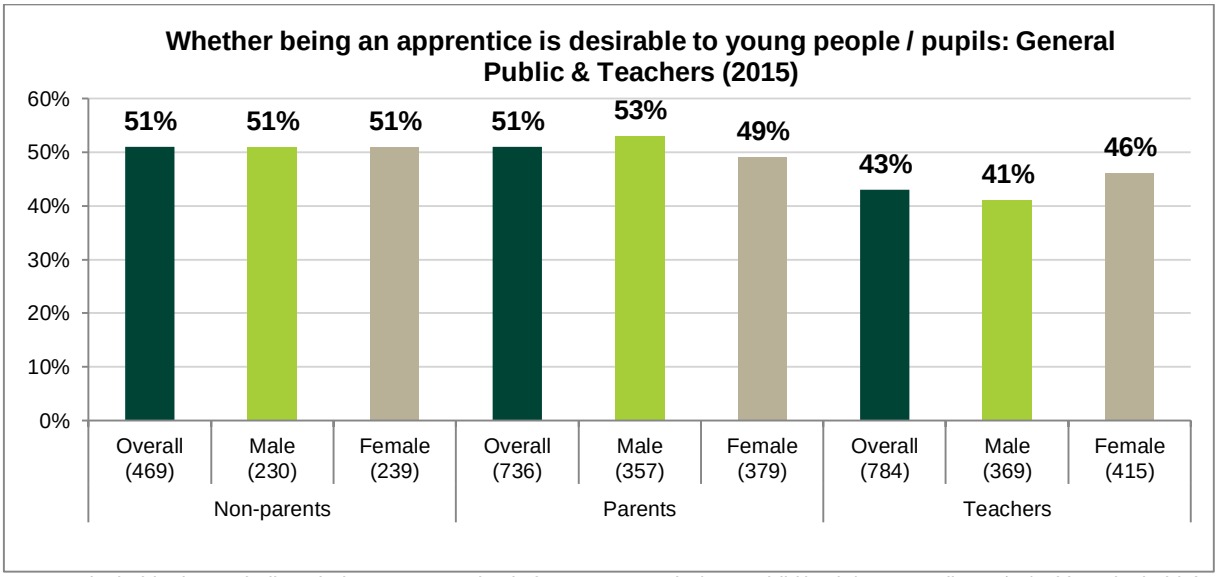


Q: If a young person / your child(ren) / your pupils were going to pursue a career in engineering, would you be most likely to recommend a vocational or academic route?

Around two in five pupils (11-14: 37%; 15-16: 36%; 17-19: 39%) and teachers (43%) viewed being an apprentice as desirable to them/their pupils. Parents' (51%) and non-parents' (51%) perceptions of the desirability of being an apprentice for their child(ren) and young people was higher than that given by pupils themselves.



Q: How desirable do you believe being an apprentice is? – '4 / 5-Very desirable'

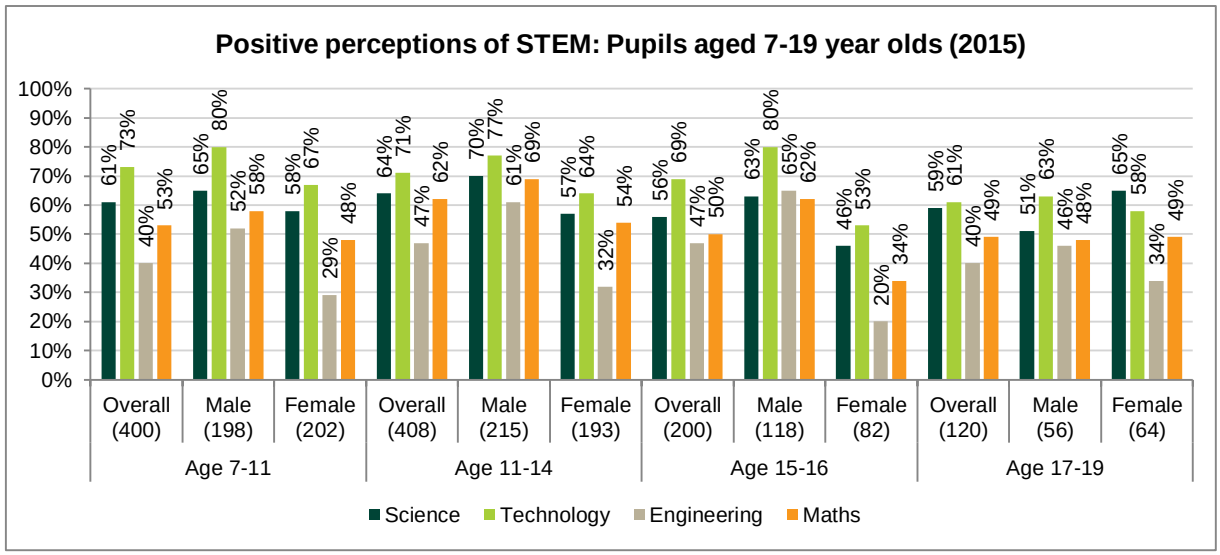


Q: How desirable do you believe being an apprentice is for young people / your child(ren) / your pupils? – '4 / 5-Very desirable'

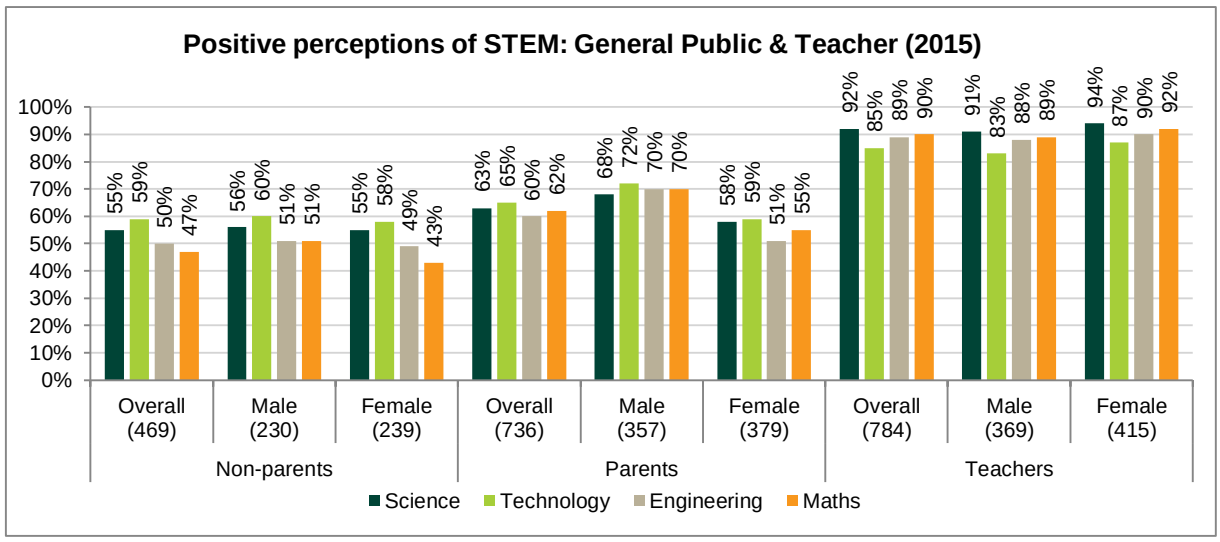
1.6 The gender bias in perceptions of engineering

As in previous years, there is a gender bias throughout the findings. For example, compared with females:

- Male pupils, parents and non-parents are more likely to consider an engineering career
- Male pupils are more likely to believe that engineering careers are desirable relative to other careers
- Male parents and pupils aged 7-16 are more likely to have a positive perception of STEM
- Among 11-14s, 15-16s, parents, non-parents and teachers, males are more like to know what people working in engineering do
- Among 7-11s, boys are more likely to pick positive words/phrases to describe engineering
- Male teachers are more likely to have been asked for careers advice about engineering in the past year
- Male teachers and parents are more likely to be confident giving careers advice on engineering
- Male pupils are more likely to believe that they know how to become an engineer



Q: How positive or negative is your view of each of the following? – '4 / 5-Very positive'



Q: How positive or negative is your view of each of the following? – '4 / 5-Very positive'

2 Background

2.1 Background

The Engineers and Engineering Brand Monitor (EEBM) has, since 2010, provided an annual review of the perception of engineering among pupils aged 7-19 years, the general public aged 20+ and teachers of Science, Technology, Engineering and Maths (STEM) subjects. As well as capturing a thorough annual snapshot of national perceptions of engineers and engineering, the EEBM produces trend data that helps us shape our programmes, improve our impact and, for our own and others' programmes, form a national benchmarking tool for evaluation processes.

Throughout the report we refer to the different audiences as 7-11s (for 7 to 11 year olds), 11-14s (for 11 to 14 year olds), 15-16s (for 15 to 16 year olds), 17-19s (for 17 to 19 year olds)[1], parents (for those aged 20 and over who report having children), non-parents (for those aged 20 and over with no children) and teachers.

The main report explains the findings of the 2015 EEBM within four key themes: consideration of engineering; desirability of engineering; knowledge and perceptions of engineering and career pathways and influences.

2.2 Research objectives

The specific objectives of the 2015 wave of the EEBM are:

- To measure perceptions among children, the general public and teachers towards engineering, engineers and STEM as a whole;
- To establish what, if anything, people have seen or heard about engineering/engineers and whether this projected a positive or negative image;
- To understand attitudes towards vocational routes into engineering; and,
- To obtain data on influences, influencers and viewpoints on career choice.

2.3 Questionnaire design

In 2015 the surveys were redesigned in agreement with EngineeringUK. Throughout the report where comparisons are possible with the previous EEBM surveys these have been made.

2.4 Methodology

The 2015 Brand Monitor was conducted in May/June 2015, utilising an online survey with 3,117 respondents across the different audiences. Four different quantitative questionnaires were developed as follows:

- General public (those aged 20+ including both parents and non-parents)
- Pupils aged 11-19 (those aged 11-14, 15-16 and 17-19)
- Pupils aged 7-11
- Teachers

[1] These reflect Key Stages 2-5 in England and Wales.

The samples achieved, by audience, were as follows:

- 20+ year olds parents (n=736)
- 20+ year olds non-parents (n=469)
- 11-19s (n=728)[2]
- 7-11s (n=400)
- Teachers (n=784)

Respondents were recruited through an online research panel provider, except in the case of the teachers who were recruited from the database of a leading education provider, Pearson.

We would like to take this opportunity to thank Pearson for providing the sample for the teachers audience of the 2015 EEBM.

2.5 Demographics

The table below provides a basic unweighted demographic breakdown for the different groups.

	Overall	Male	Female
7-11s	400	198	202
11-14s	408	215	193
15-16s	200	118	82
17-19s	120	56	64
Parents	736	357	379
Non-parents	469	230	239
Teachers	784	369	415
TOTAL	3117	1543	1574

[2] Seventy additional 17-19s were asked a single question through the general public survey. For this question alone the 17-19s response in the report includes a combined response from both the 17-19s within the pupil survey and 17-19s who were not studying at school or sixth form from the general public survey (a total of 190 respondents).