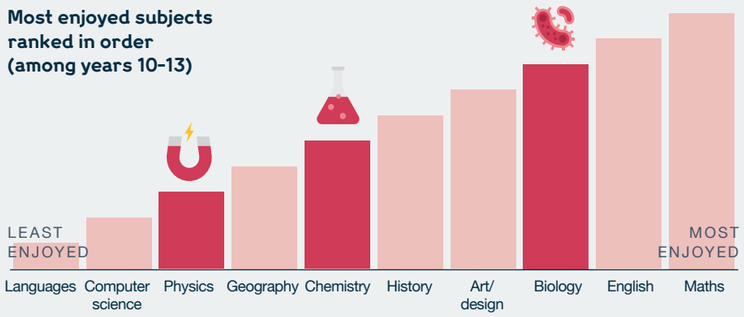
SCIENCE EDUCATION TRACKER 2019

What affects engagement with science

How much different subjects are enjoyed

Biology is the most enjoyed and physics is the least enjoyed science subject

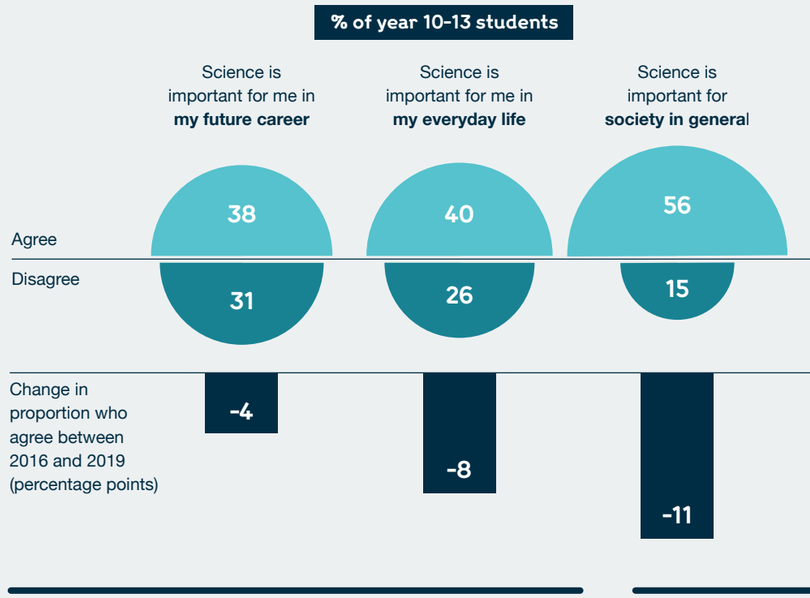
Most enjoyed subjects ranked in order (among years 10-13)

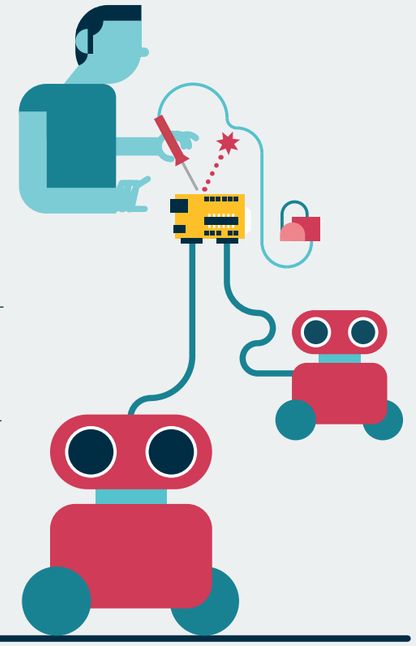


Relevance of science to everyday life

Less than half feel that understanding science is relevant to everyday life and this has fallen since 2016

% of year 10-13 students

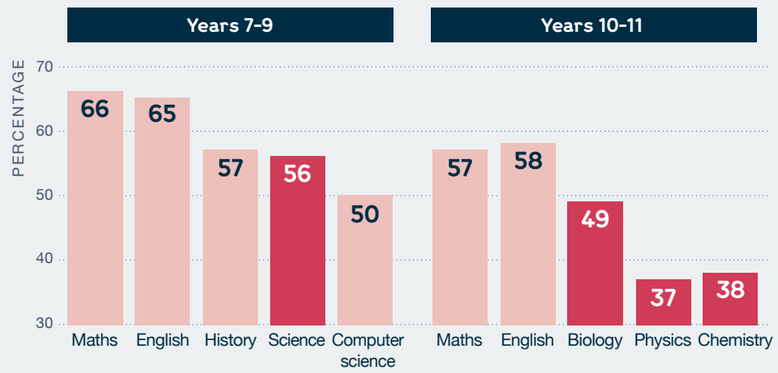




Self-belief in science

Compared with other subjects, students are less likely to rate themselves as good at science and computer science.

% of students who think they are good at different subjects



What has encouraged young people to learn science

% of students in years 7-13

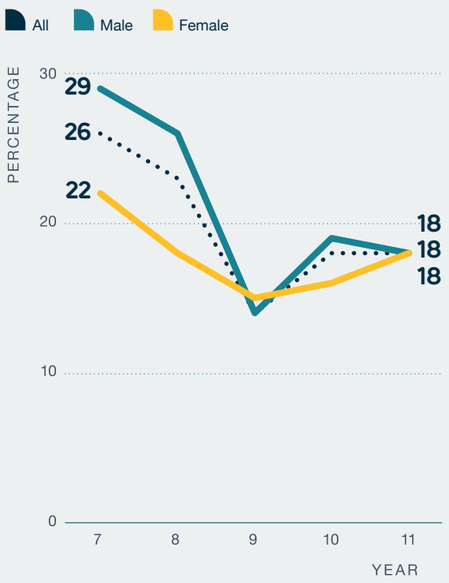
What young people think makes good science teaching

The most important things about science teachers that help students in years 7-13 (%)

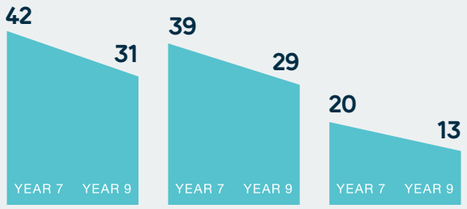
Interest in science lessons by school year

There is a large drop in interest between year 8 and year 9, especially for males. A range of factors may explain this drop in interest.

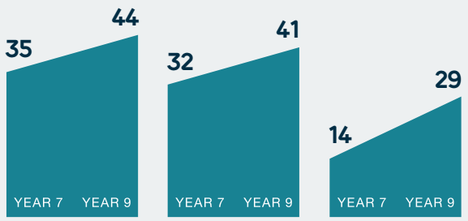
% of students who find science lessons very interesting



What has encouraged young people to learn science (%)



What has put young people off learning science (%)



% of students who do hands-on practical work at least once a fortnight

The SET 2019 was conducted by Kantar. In total, 6,409 students in school years 7 to 13 attending state-funded schools in England took part by completing an online questionnaire, between 13 July and 2 September 2019. The full findings are available at **www.wellcome.ac.uk/set2019**

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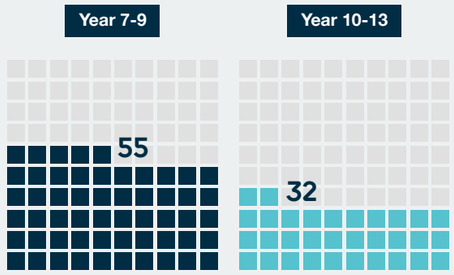
Practical experience of science

Motivations for learning science

Practical work was the key motivation to learn science, especially for students in years 7-9

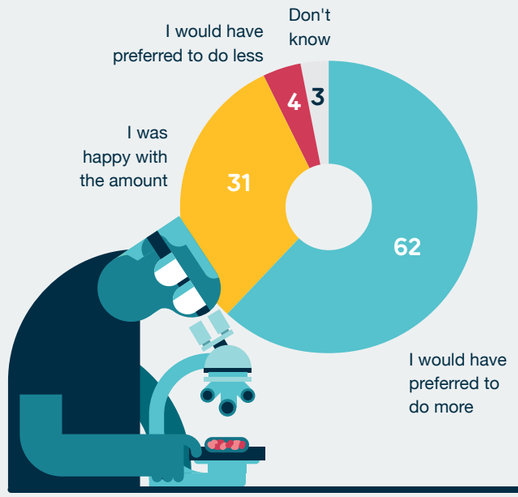
% of students who mention practical work as a motivating factor in science lessons



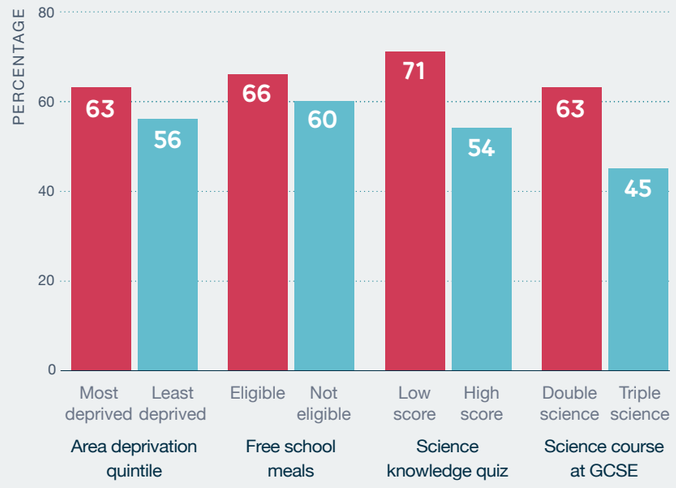
Most students want to do more practical work

This is especially the case amongst disadvantaged students and those least engaged in science

Preference to do more practical work in years 7-11 (%)



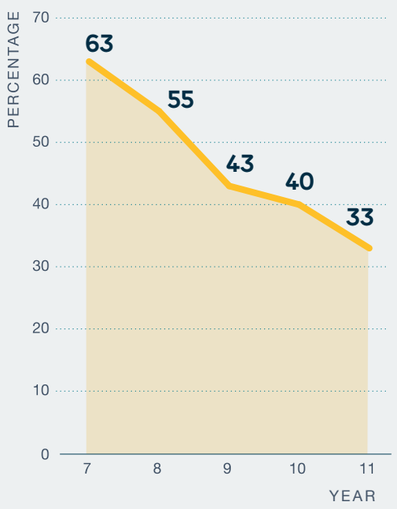
% of year 7-11 students who wanted to do more practical work

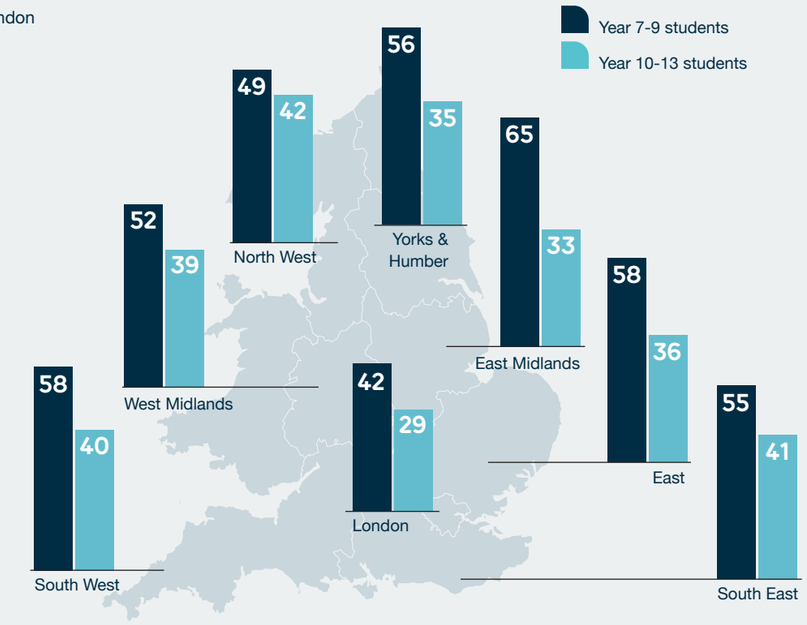


Frequency of hands-on practical work

Frequency declines by school year and is lower in London

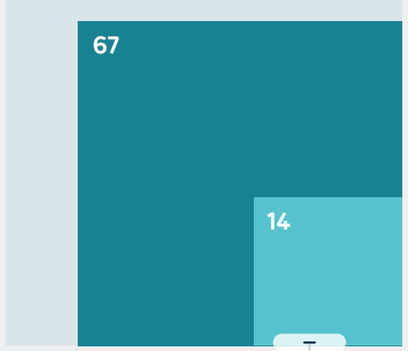
% of students doing hands-on practical work at least once a fortnight





STEM-based work experience

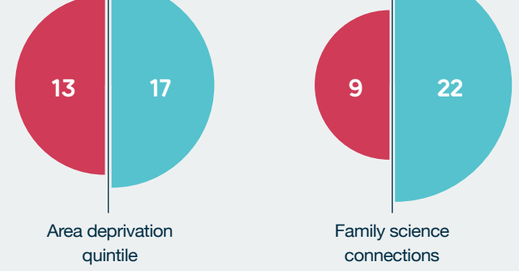
This was rare and take-up was lower among more disadvantaged students and those with fewer family science connections



% of students in years 10-13 who had completed **work experience of some kind**

% of students in years 10-13 who had completed **STEM-related work experience**

STEM-based work placements by survey subgroup (%)



STEM: Science, technology, engineering and maths

Family science connections: A survey measure based on the number of science connections held by students (e.g. whether parents and other family members work in science or are interested in science)

Area deprivation quintiles: based on the Income Deprivation Affecting Children Index (IDACI)

Free school meal eligibility: based on whether the student has been eligible in the previous six years

Science quiz: A science quiz was used to measure young people's scientific knowledge

Changes since 2016

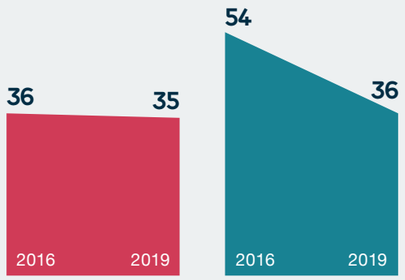
Students have less exposure to practical work in 2019 and this decline is more focused in affluent areas

% of students in years 10-11 who do hands-on practical work at least once a fortnight

All students in years 10-11

Hands-on practical work

Area deprivation quintile



Students in most deprived quintile

Students in least deprived quintile

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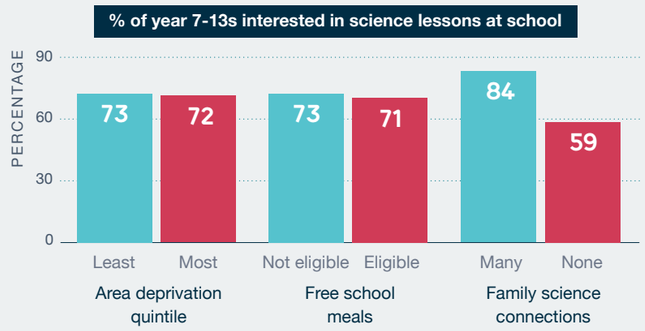
Inequalities in access to STEM

The influence of family background

Interest in science by family background

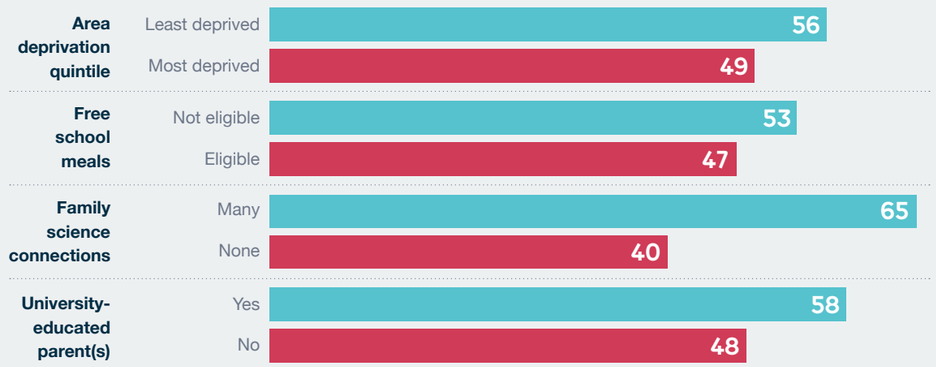
Students from all income backgrounds are equally interested in science though students with more family science connections show greater interest



Informal science learning by family background

Students from more disadvantaged backgrounds are less likely to visit science-related museums and attractions

% of year 7-13 students who have visited science-related museums or attractions in the past year



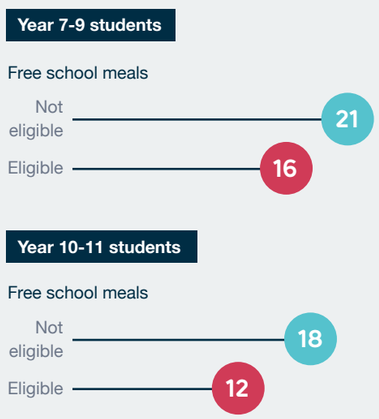
Obstacles to reaching STEM aspirations

Students from more disadvantaged backgrounds face more obstacles to a future in STEM

Students from more disadvantaged backgrounds...

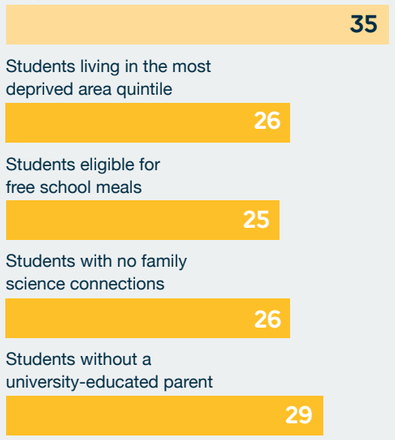
...have lower levels of **SELF-BELIEF IN SCIENCE**

% who think they are very good at science



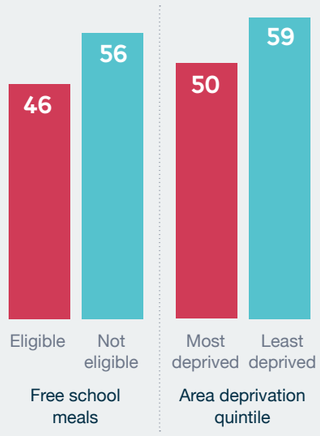
...are less likely to **TAKE UP TRIPLE SCIENCE**

% who take up triple sciece



...are less likely to **ASPIRE TO UNIVERSITY**

% of year 10-13 students who aspire to university



Influences on career choices

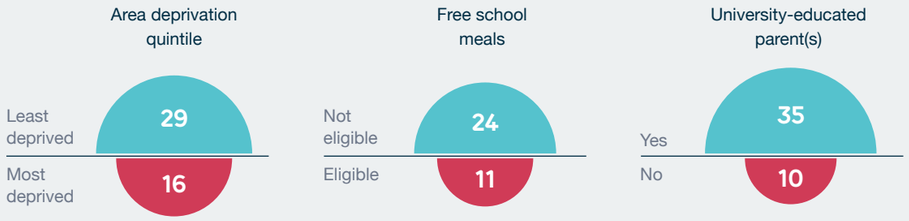
Parents are the most influential sources when helping students make career choices

Sources used for careers advice by students in years 10-13 (%)

Family science connections and disadvantage

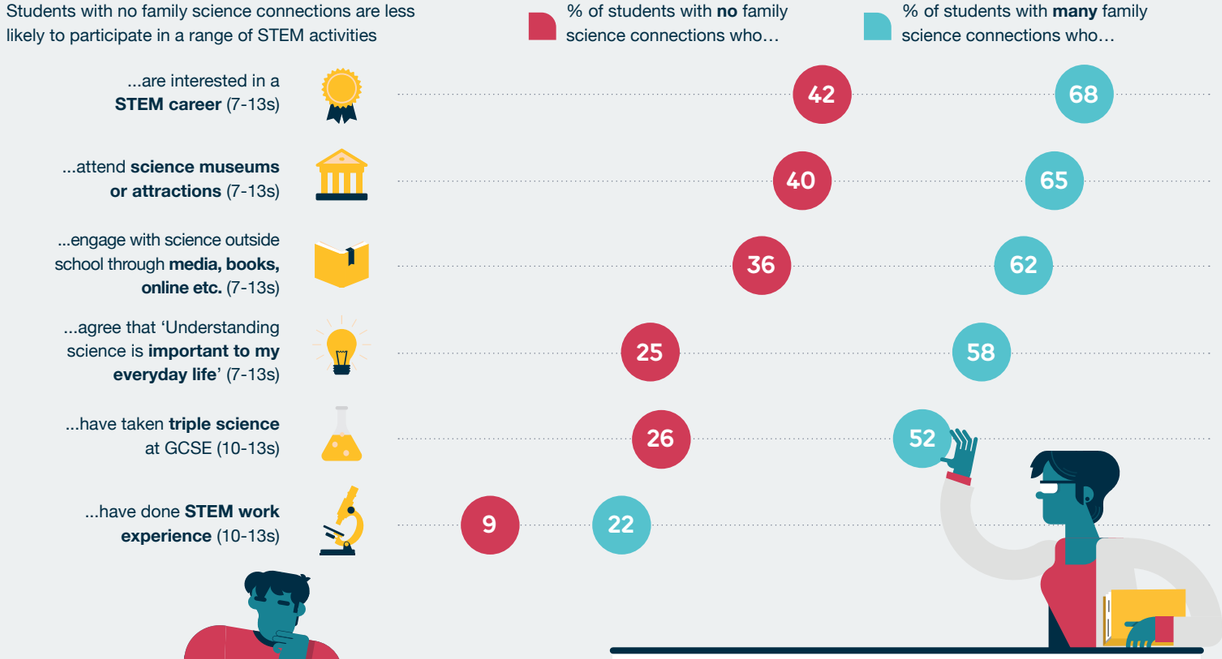
Students from more disadvantaged backgrounds are less likely to have family science connections

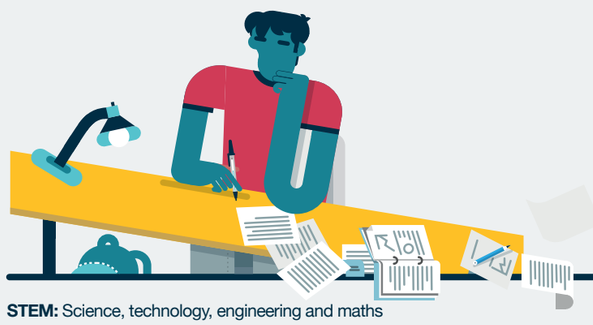
% of students in years 7-13 who have many family science connections



Family science connections are linked to higher rates of STEM participation

Students with no family science connections are less likely to participate in a range of STEM activities





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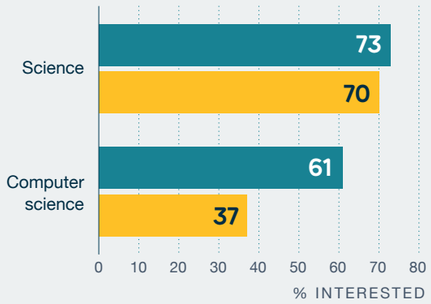
Gender gaps

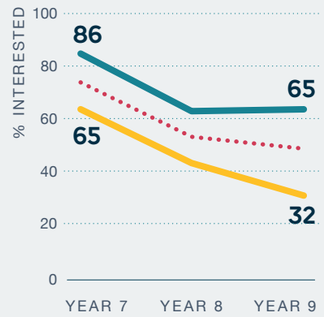
All Male Female

Interest in science vs interest in computer science

The gender gap in interest in science at school is small, but is much wider for computer science (years 7-13)



Interest in computer science falls between years 7 and 9



Self-perceived ability in school subjects

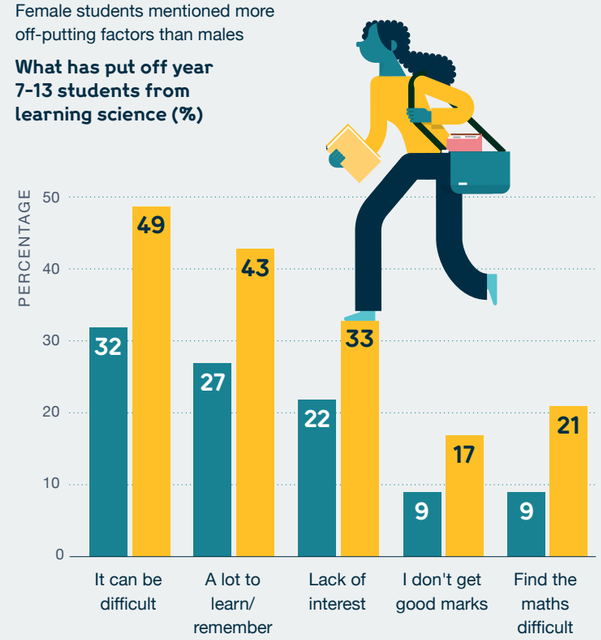
Female students were less likely than males to rate themselves as 'good' at maths, physics and chemistry

% of year 10-13 students who rate themselves as 'good'

Barriers to learning science

Female students mentioned more off-putting factors than males

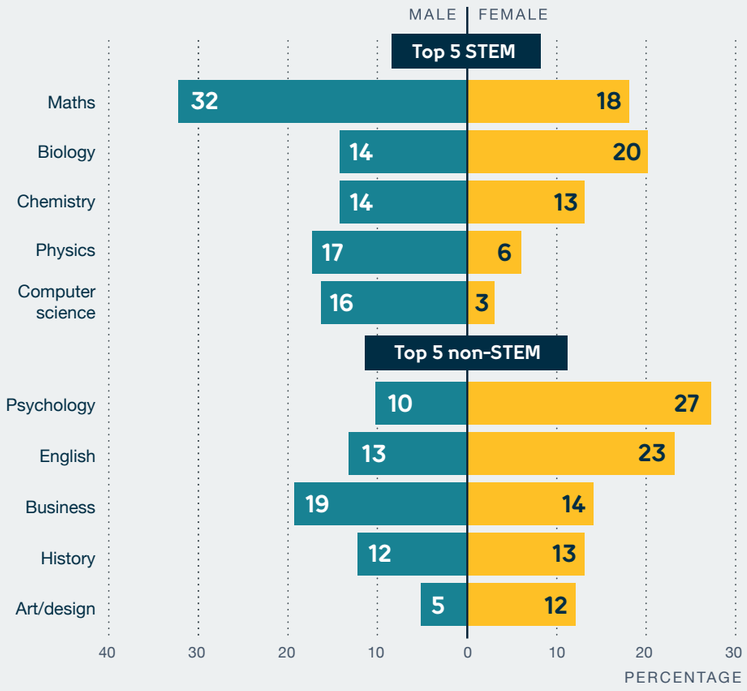
What has put off year 7-13 students from learning science (%)



Post-16 subject choices

Male students are more likely to choose science subjects (except biology) post-16

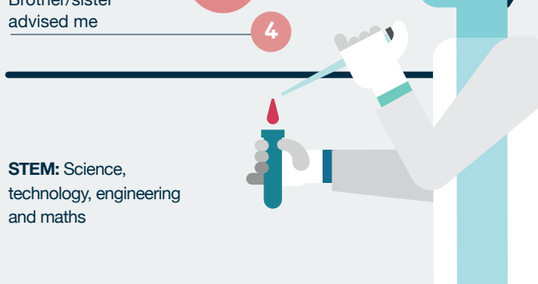
Post-16 subject choices among year 11-13 students (%)



Motivations for a science career

Among the many attractions of science-related work, male students were more drawn to good pay and female students to the chance to help others

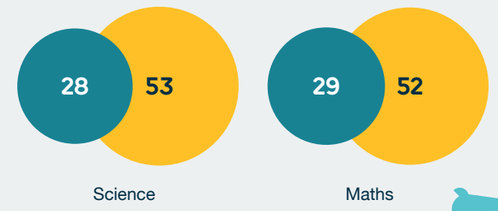
What makes year 10-13 students interested in a science career (%)



Anxiety in school exams

Female students are more anxious than males about STEM subjects

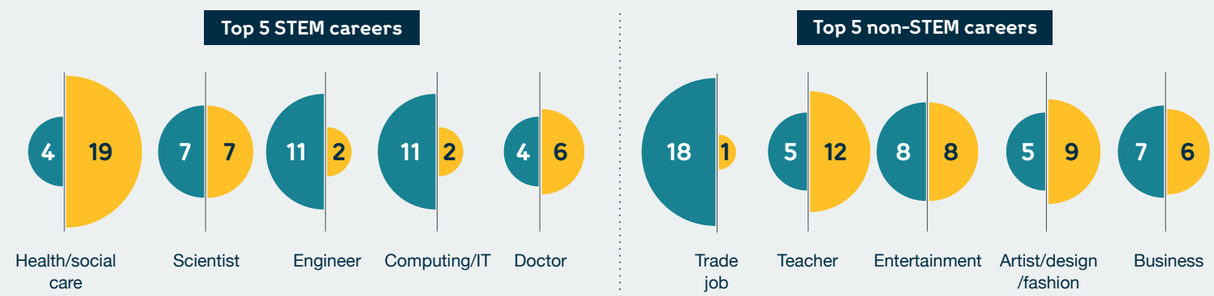
% of year 10-11 students who feel anxious in tests or exams 'most times'



Career aspirations

There are big gender gaps in the appeal of careers in engineering, computing/IT and health/social care

Interests of year 10-13 students with some idea of future career (%)



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