

STEM & HUMANITIES

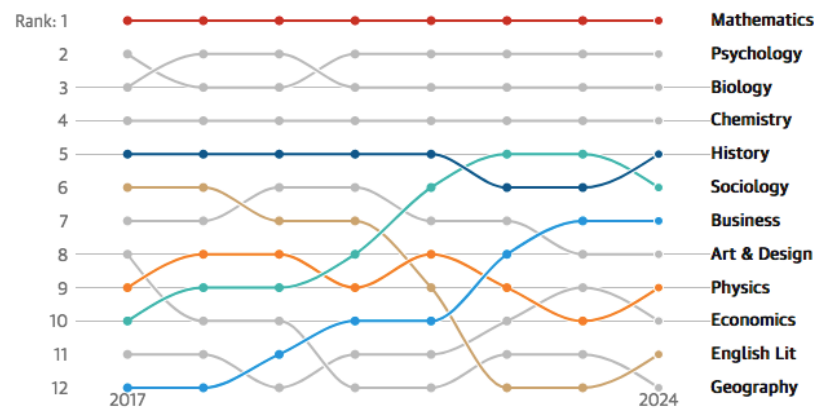
PART 1

Comment on these graphs and cartoons.

1a

Maths remains the most popular A-level

Top 12 subjects in England, ranked by popularity



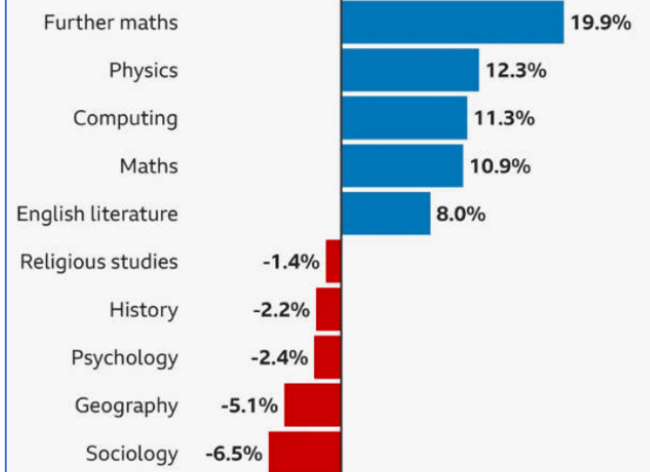
Guardian graphic. Source: Joint Council for Qualifications. Base: English A-level students



1b

STEM subjects jumped in popularity in 2024

Biggest percentage rises and falls in number of A-level entries by subject, 2023-2024



Note: Excludes subjects with fewer than 10,000 entries

Source: Joint Council for Qualifications

BBC

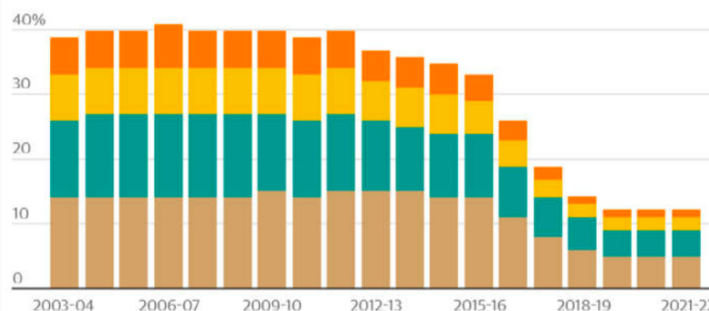
1c

Published in August 2024 in *The Guardian*

Fewer A-level students are taking subjects from a diverse range of subject areas

Proportion of A-level students studying different three-way combinations of subjects by major subject group

■ Humanities, social sciences, Stem
 ■ Arts, humanities, social sciences
 ■ Arts, social sciences, Stem
 ■ Arts, humanities, Stem



Guardian graphic. Source: National Foundation for Educational Research

<https://www.theguardian.com/education/article/2024/aug/14/a-level-students-choosing-narrower-range-of-subjects-after-gove-changes>

1d

More women are thriving in science – does that mean attitudes have changed?

Éliane Ubalijoro. – the Guardian – 9th November 2024



Over the past four years, you could be excused for thinking that there has been an avalanche of women excelling in the field of science. We have seen half a dozen women collect Nobel prizes in physiology or medicine, physics and chemistry. Their staggering achievements range from Katalin Karikó's contribution to the development of mRNA vaccines against Covid-19 to Andrea Ghez's co-discovery of a supermassive black hole at the centre of our Milky Way galaxy. In 2020, we witnessed the first science Nobel prize won by two women alone – without sharing the honour with a man – after Jennifer Doudna and Emmanuelle Charpentier revolutionised the study of genetics with the development of Crisprgenome editing, raising hopes for the treatment of many diseases.

So, what's going on? Has there been a change in attitudes towards women in science?

While the public celebration of women who reach the pinnacle of their scientific careers surely encourages girls in school, it is all too easy to overlook the persistent barriers that hinder entry into the profession. For every woman who manages to defy gender stereotypes and make a career in science, thousands don't, because they are discouraged by teachers or by parents, lack enough confidence to take the first step, or are denied adequate healthcare and reproductive rights.

We now have an International Day of Women and Girls in Science that serves as a reminder that there is still much work to be done to correct the gender imbalance and offer opportunities to everyone who wants to pursue a scientific career. After all, UN international days are not just celebrations but are meant to raise awareness about "issues of concern".

As of 2023, women accounted for just 35% of all graduates in Stem-related fields (science, technology, engineering and mathematics), while only 12% of members in national science academies are women, according to the UN. Marginalised women and girls – including Indigenous women and those of African descent, women with disabilities, those living in rural areas and those who identify as LGBTQ+ – face even greater barriers to entry. And then there are the socioeconomic impediments that force many people – regardless of gender, ethnicity or sexual orientation – to drop out simply because they can't afford to continue their studies or lack access to healthcare.

Boosting female education – not just in science – depends on investment in health. More than 500 million women and girls globally lack access to safe menstrual care, leading them to miss days at school and work. When half the population is unable to show up, they can't participate as agents of change. This has knock-on effects for all of society and undermines a gender-inclusive transition to a net zero future.

In the absence of a level playing field, women and girls are left to overcome the odds. And this is where role models can be a vital source of inspiration. My own experience is living proof to girls that dreaming big can take you a long way. With the encouragement of my parents, I managed to chart a course that took me from a childhood in Rwanda to living on three continents, to a doctorate in molecular genetics and a professorship at McGill University in Canada, a successful career in the private sector, boardrooms around the world, and now to the top of a leading research organisation.

Last year, I became the first African female leader of a CGIAR research center when I started as CEO of the Center for International Forestry Research and World Agroforestry. When Yvonne Pinto takes on the leadership of the International Rice Research Institute in April later this year, it will be the first time in more than 50 years that two African women will lead institutions in the CGIAR global research partnership. With Ismahane Elouafi and Lindiwe Majele Sibanda also now leading the board and senior management, we will be part of a growing community of African women leading at the interface of food

50 systems, climate and biodiversity conservation. Now we have seats at the leadership table,
there is no limit to what we can achieve collectively.
Marie Maynard Daly, the first African American woman to earn a doctorate in chemistry in
the US, in 1947, said: “My parents didn’t discourage me because I was a woman.” Like Daly, I
was fortunate to have parents who not only didn’t discourage me but believed in me and
55 pushed me to excel. The confidence and grit that they gave me have been critical to
overcoming obstacles in my life. The encouragement of mentors, coaches and champions
has also been key to my career progression. Every girl and woman deserves the same
supportive environment at home, at school and in the workplace.
So, to the women and girls who dream of a career in science, I say: dream big. Dare to try. Be
60 audacious. Dream so big, some will ask, “How dare you?” You may not win a Nobel prize, but
you will be following your true passion. And that’s the most important ingredient to a
fulfilling
life of purpose.

Éliane Ubalijoro is the CEO of CIFOR-ICRAF