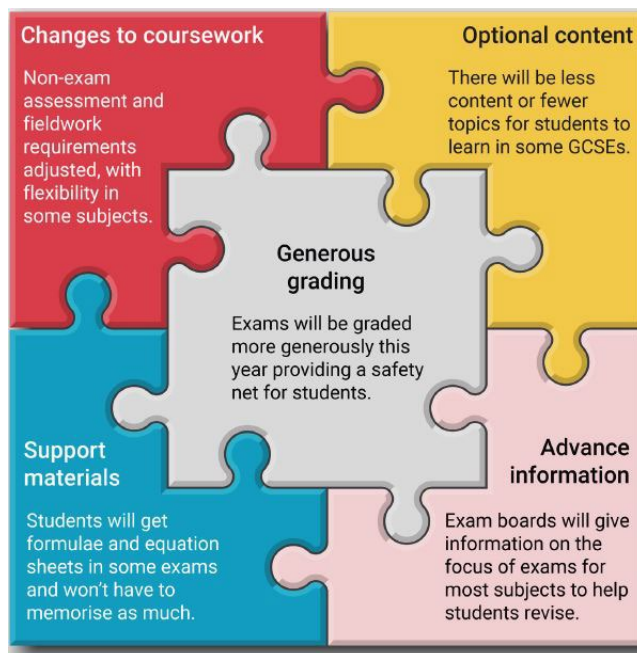


GCSE Results 2022

For the first year since 2019 GCSE results are based on examinations. In 2020 and 2021 due to the ongoing coronavirus pandemic, grades were awarded by Centre Assessed Grades (CAGs) and Teacher Assessed Grades (TAGs) respectively. The high variation in the results between 2019 to 2022 are directly linked to this change. In an attempt to mitigate the impact of the pandemic on young people's educational outcomes, exam boards were asked by Ofqual to amend grade boundaries. This was set at the mid-point between 2019 and 2021.

There were also adjustments made to the scope and content within the exam papers and advance notification of exam topics were provided. Science and Maths exams included the use of formulae sheets to assist young people during the examinations, which were also released prior to exams for exam practice and to aide revision. Teachers could also deliver practical work in science subjects by demonstration rather than through participation. Ofqual had predicted that the results, while likely to be higher than in 2019 when examinations last took place, would also be lower than in 2021.

Ofqual additional support measures for 2022.¹

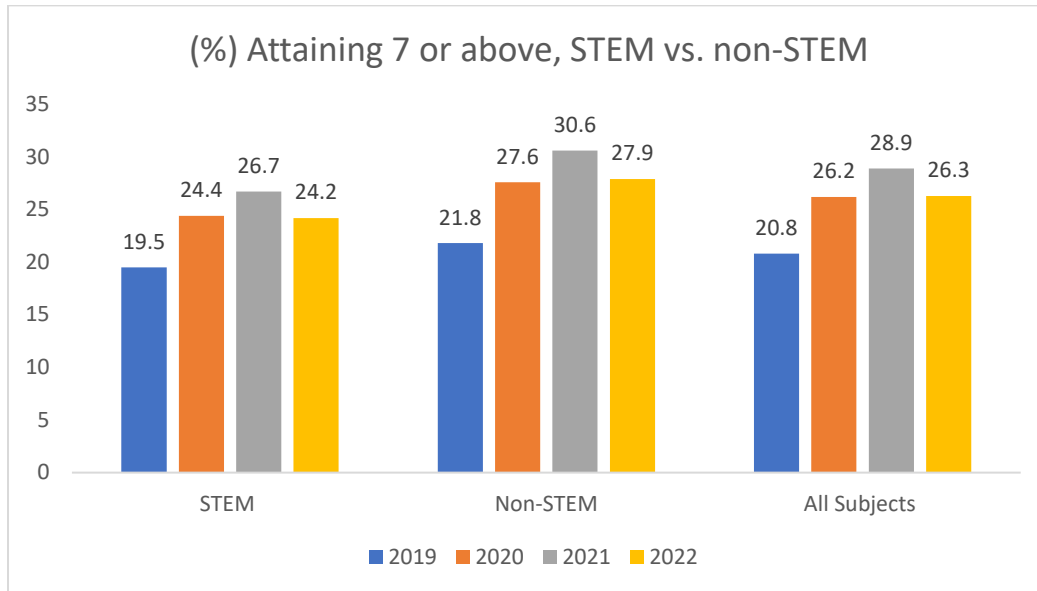


STEM v non-STEM - 2019 to 2022

The proportion of young people attaining 4+ and 7+ increased significantly in 2020 and 2021 when gradings were based on teacher judgments. This year, as widely predicted, the results are below those of 2021. The decline in STEM is roughly in line with non-STEM subjects.

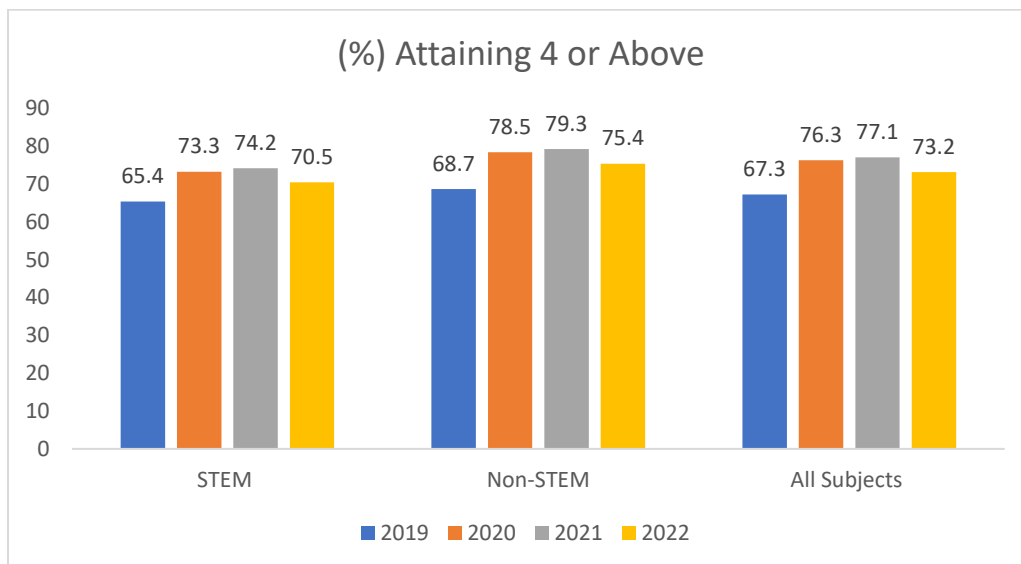
¹ <https://www.gov.uk/guidance/subject-by-subject-support-for-gcse-as-and-a-level-students-in-2022>

Proportion of young people attaining 7 or above, STEM vs. non-STEM subjects



- The proportion of young people attaining a level 7 or above in STEM subjects has historically been below that of non-STEM subjects. This has remained the case in 2022.
- The proportion of young people attaining a 7 or above has slightly dipped between 2021 and 2022. In STEM the decline -2.5 percentage points (%p), non-STEM -2.7%p and the overall decline is -2.6%p.
- However, compared with 2019, the last year when exams were sat, the proportion of young people attaining a 7 or above in STEM has increased.

Proportion of young people attaining 4 or above, STEM vs. non-STEM subjects



- The proportion of young people attaining a 4 or above has dipped between 2021 and 2022. It is still above the 2019 pre-pandemic levels, likely due to the interventions put in place by Ofqual.

- The dip in the proportion of young people attaining a 4 or above in STEM (-3.7%p) is roughly in line with non-STEM subjects (-3.9%p).

Entries for STEM subjects

The below table represents the entries for different STEM GCSEs as a proportion of all entries. Many STEM subjects are compulsory at GCSE, including Maths and Science, therefore the focus should be on the optional subjects indicated by (*).

Subject	2019 (%)	2020 (%)	2021 (%)	2022 (%)
Biology	3.2	3.13	3.2	3.27
Chemistry	3.07	2.99	3.08	3.12
Computing*	1.44	1.38	1.39	1.42
Construction*	0.01	0.02	0.02	0.02
Design & Technology*	1.8	1.73	1.59	1.51
Economics*	0.12	0.12	0.12	0.12
Engineering*	0.06	0.06	0.05	0.04
ICT*	0.17	0.16	0.17	0.17
Mathematics	14.04	14.21	14.12	13.71
Mathematics (Additional)*	0.07	0.07	0.07	0.07
Mathematics: Numeracy	0.43	0.43	0.6	0.49
Other Sciences*	0.06	0.05	0.05	0.05
Other Technology*	0.02	0.02	0.02	0.01
Physics	3.03	2.96	3.05	3.1
Science	0.12	0.13	0.14	0.14
Science: Double Award	15.13	15.43	15.6	15.84
Statistics*	0.43	0.43	0.31	0.39

- As would be expected Science: Double Award and Mathematics had the highest entries.
- Design and Technology entries has had one of the biggest dips from 2019 to 2022. The pandemic and the uncertainty surrounding opportunities to take part in practical elements could account for this.
- Engineering has similarly seen a slight decline, though numbers have always been low. As part of this GCSE there is a large practical element, which could be responsible for this drop.

Entries by Gender

Subjects	Female (%)	Male (%)
Biology	3.3	3.23
Chemistry	3.11	3.12
Computing*	0.61	2.23
Construction*	0	0.03
Design & Technology*	0.9	2.13
Economics*	0.08	0.17
Engineering*	0.02	0.07
ICT*	0.11	0.22
Mathematics	13.65	13.77
Mathematics (Additional)*	0.07	0.07
Mathematics: Numeracy	0.48	0.49

Other Sciences*	0.02	0.08
Other Technology*	0	0.03
Physics	3.08	3.13
Science	0.13	0.14
Science: Double Award	15.69	15.97
Statistics*	0.33	0.45

- Males are more likely than females to take optional STEM subjects at GCSE based on entries. This is particularly apparent in Computing, Design and Technology and ICT.

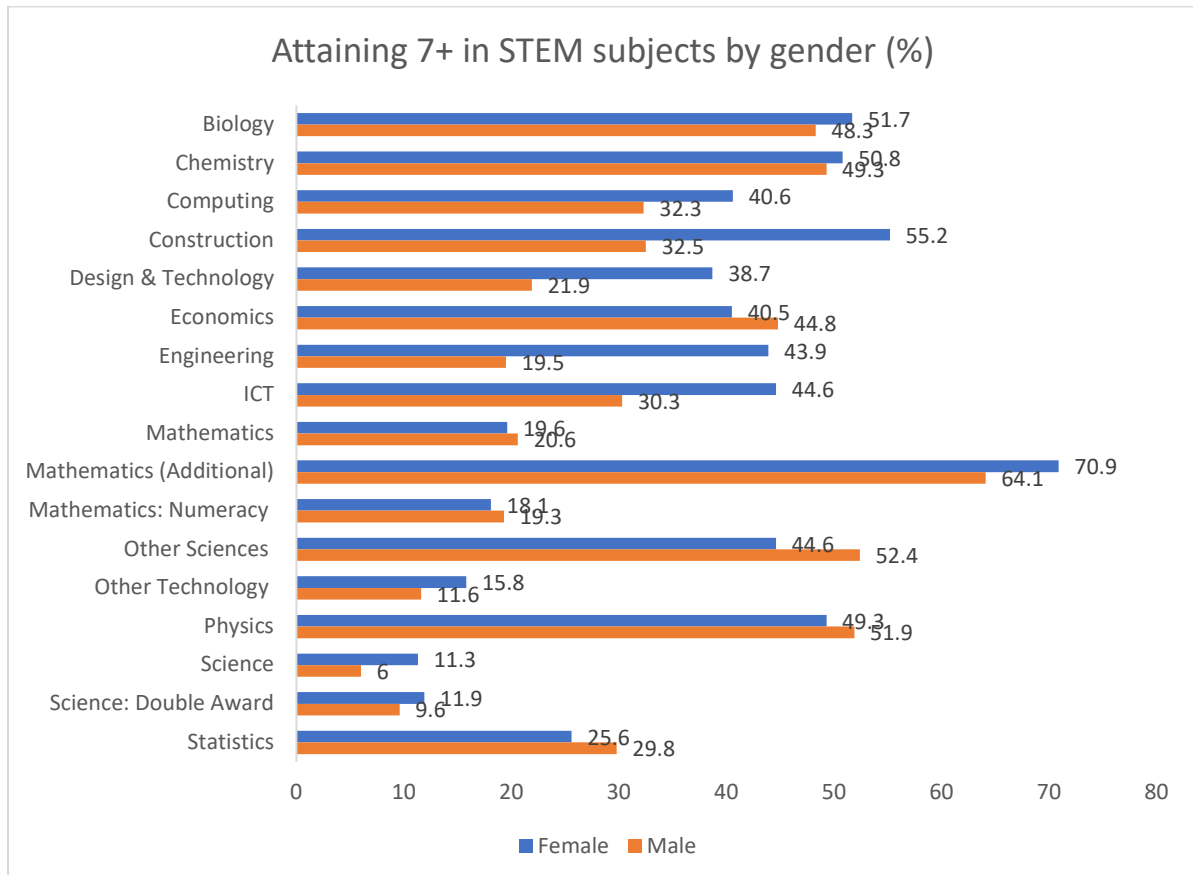
Proportion of young people attaining 7 + in STEM Subjects

Subjects	2019	2020	2021	2022
Biology	42.4	52.7	56	50
Chemistry	44.1	53.3	54.9	50
Computing*	21.7	33.7	39.7	34.1
Construction*	25.9	33	38.6	34.8
Design & Technology*	19.4	27.8	30.2	26.8
Economics*	32	46.8	52.8	43.5
Engineering*	11.6	25.5	29.7	23.6
ICT*	27.2	36.3	39.2	35
Mathematics	16.1	19.1	21	20.1
Mathematics (Additional)*	57.9	64.1	67.5	67.4
Mathematics: Numeracy	11.9	17.9	22.6	18.7
Other Sciences*	39.2	56	55.9	50.6
Other Technology*	7.2	12.2	12.2	11.8
Physics	44	53.1	55.6	50.6
Science	5.6	7.3	8.3	8.5
Science: Double Award	7.8	10.8	12.7	10.7
Statistics*	19.3	28	32.7	28

- There have been some large dips in the proportion of young people attaining a 7 or above in many of STEM subjects between 2021 and 2022.
- There were particularly large attainment dips in Economics (-9.3%p), Engineering (-6.1%p) and Biology (-6%p).

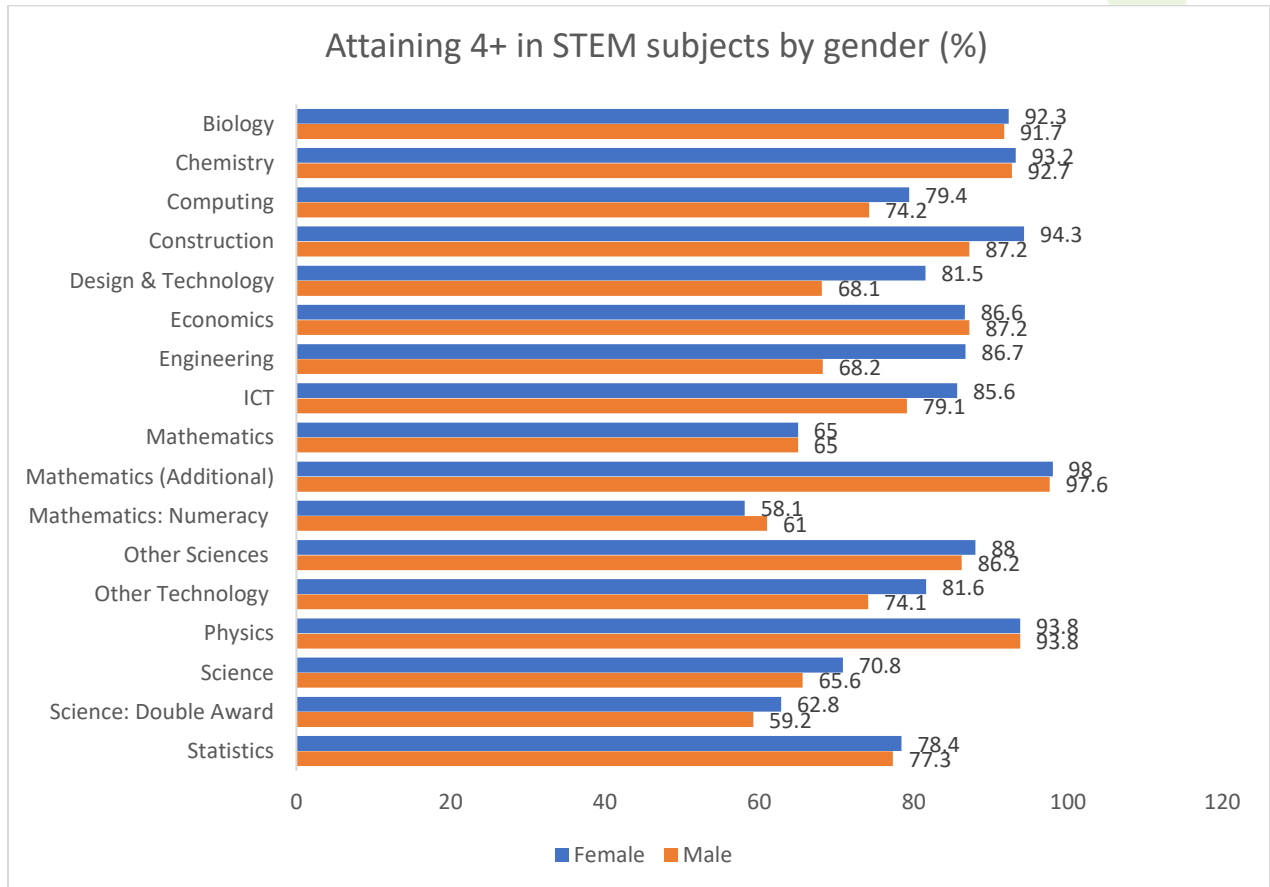
Attainment by gender 2022

Females have historically outperformed males across most subjects at GCSE, including in STEM subjects. There have been longstanding issues surrounding females choosing optional STEM subjects for GCSE, but despite the sometimes large gender disparity females still outperform males in these subjects, particularly when looking at the proportion attaining a level 4 or above in these subjects.



- The proportion of females attaining 7 or higher in STEM subjects is above males in most core science subjects (Double Science, Science, Chemistry and Biology).
- Although entries for females in Computing and ICT are lower than males, the attainment levels are higher.

Attainment 4+ in STEM subjects by gender



- Females outperform males in the majority of STEM subjects, with the only subjects where males outperform being Mathematics: Numeracy and Economics.

Scotland - National 5 Examinations

Exams results in Scotland were released on 9th August 2022. As with the situation in the rest of the United Kingdom, some support measures were put in place to minimize the impact of the coronavirus pandemic on the educational outcomes. The Scottish Qualification Authority (SQA) announced course assessment modification and revision support, as well as wider support from across the education system at a national, regional, local and school/college level.² This is also the first year since 2019 with examinations.

² https://www.sqa.org.uk/sqa/files_ccc/nq2022-chief-examining-officer-report.pdf

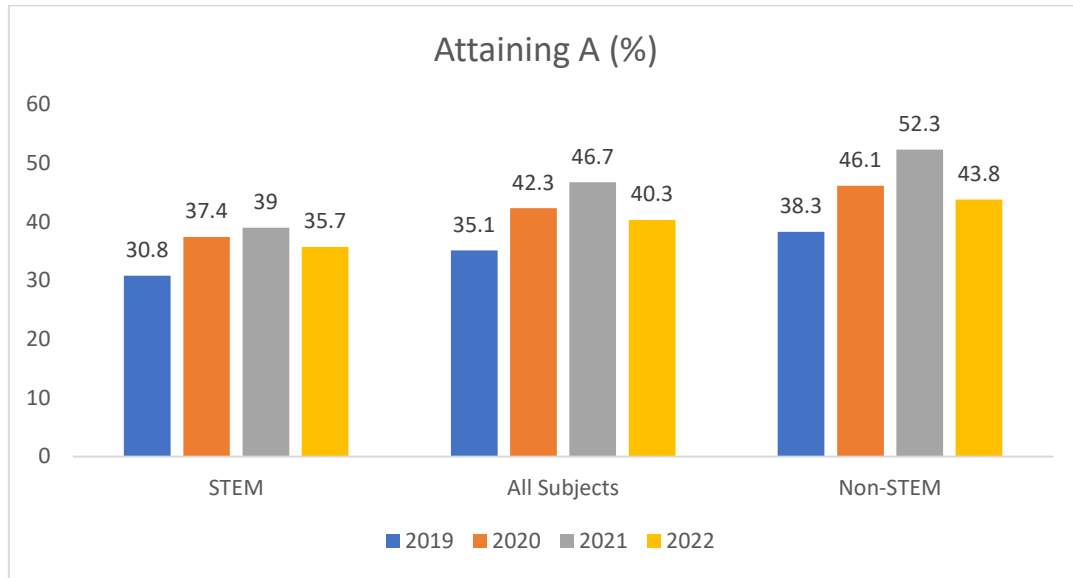
Entries

Between 2019 and 2022, entries haven't significantly changed in Scotland for the proportion of young people studying STEM subjects. There was a slight increase in the overall STEM entry figure in 2022 from 2021 to be in line with 2020.

Subject	2019	2020	2021	2022
Administration and IT	1.7	1.7	1.8	1.7
Applications of Mathematics	1.5	3.5	3.6	4.6
Biology	7.5	7.2	7.1	7.3
Chemistry	5.6	5.3	5.1	5
Computing Science	2.2	2.1	2.1	2.1
Design and Manufacture	1.6	1.5	1.5	1.4
Economics	0.1	0.1	0.1	0.1
Engineering Science	0.6	0.5	0.6	0.6
Environmental Science	0.1	0.1	0.1	0.1
Fashion and Textile Technology	0.1	0.1	0.2	0.2
Health and Food Technology	0.5	0.5	0.6	0.6
Mathematics	14.4	13.7	12.2	12.3
Physics	4.8	4.5	4.4	4.3
Practical Electronics	0.1	0.1	0.2	0.2
Practical Metalworking	0.4	0.5	0.5	0.5
Practical Woodworking	1.8	2.0	2.3	2.3
All STEM Entries	42.9	43.6	42.4	43.4

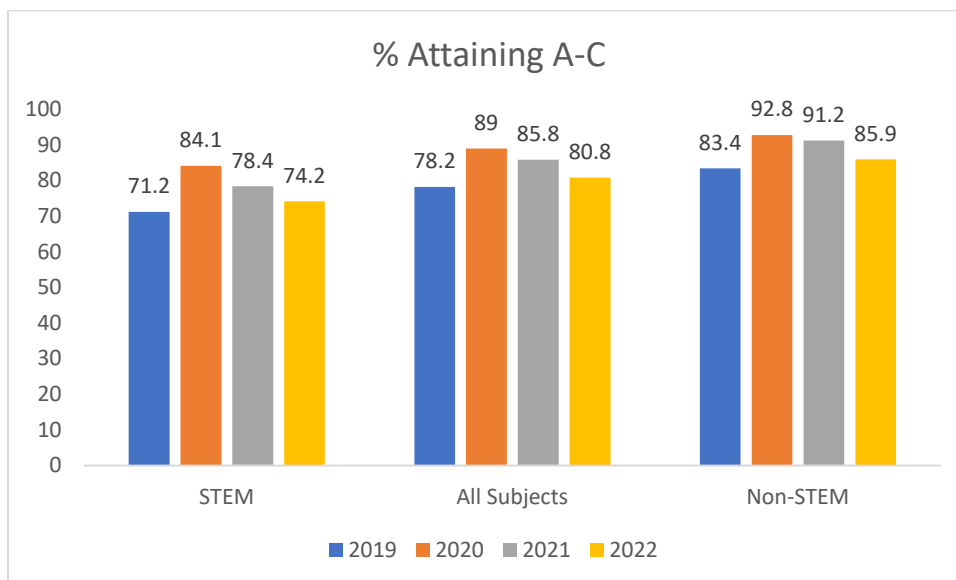
- Although there has been a small decline in the proportion of young people studying Mathematics since 2020, there has been an increase in Applications of Mathematics which is an alternative path of study.
- There has been an increase in the proportion of young people taking Practical Woodworking (0.5%p) since 2019.
- There has been a slight decline in the proportion of young people studying Chemistry (0.6%p) and Physics (0.5%p) between 2019 and 2022.

Proportion of young people attaining A



- The proportion of young people in STEM subjects attaining A is traditionally below non-STEM subjects.
- The percentage point change between 2021 and 2022 is smaller in STEM subjects (-3.3%p) than non-STEM subjects (-8.5%p).

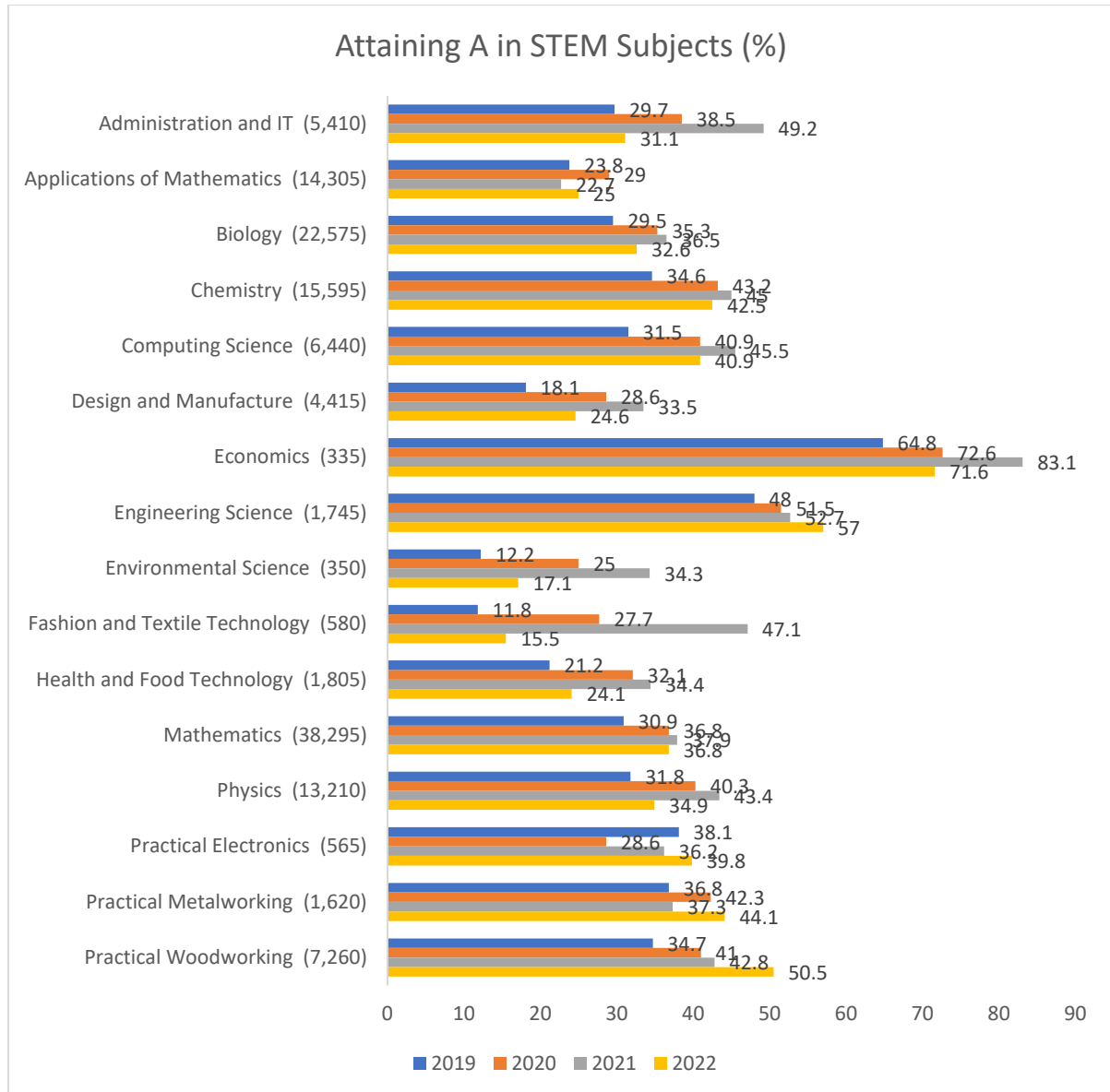
Proportion of young people attaining A-C



- The proportion of young people attaining A to C in STEM subjects is below non-STEM subjects, this has been the case since 2019.
- The percentage point difference between 2021 and 2022 is smaller for STEM subjects (-4.2%P) than non-STEM (-5%p).

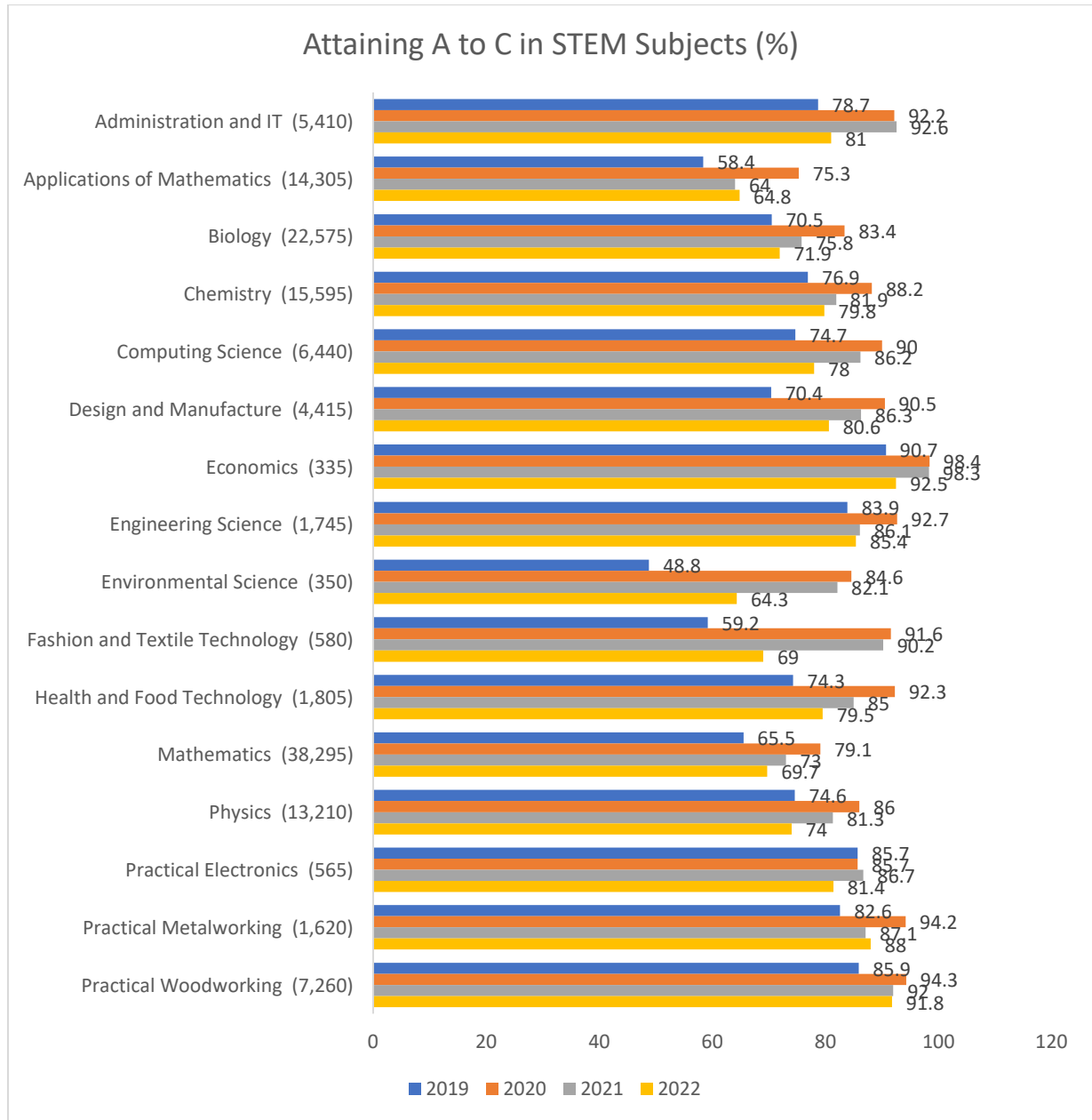
STEM Subjects

Proportion of young people attaining A in STEM subjects



- As would be expected the core subjects of Mathematics had the largest numbers of entries.
- The subjects with the largest declines in attainment between 2021 and 2022 are Fashion and Textile Technology (31.6%p), Administration and IT (18.1%p) and Environmental Science (17.2%p). Both Fashion and Textile (580) and Environmental Science (350) have very small numbers of entries, and this can account for some of the variation.
- Some subjects increased in the proportion of young people attaining an A between 2021 and 2022 including Practical Woodworking (7.7%p), Practical Metalworking (6.8%p). Those subjects also had quite sizable entries, particularly practical woodworking with 7,260 entries.

Proportion of young people attaining A to C in STEM subjects



- There have been declines in the proportions of young people attaining C or above in the majority of STEM subjects between 2021 and 2022.
- Practical Metalworking (0.9%p) and Application of Maths (0.8%p) have slightly improved in 2022.