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In this our 2019 annual report on trends in A-level choices and grades, we look for pointers as to what the results in August might be.

Entries in English and maths have fallen this year. Over the past 25 years modern languages has collapsed; the social sciences have burgeoned; the physical sciences are recovering; computer science has not taken off; and media studies flowered only to fade.

Consistently, candidates in Northern Ireland do much better than those in England or Wales, but this superior performance receives surprisingly little attention outside NI.

In 2011, Ofqual took the decision that after 30 years of rising grades they would be held consistent from year to year, changing only to allow for improvement and the abilities of the cohort.

The overall pattern of results in 2019 is, therefore, likely to be much as it was in 2018 when 8.0% were awarded A*; 26.4%, A*/A; 77.0%, A*-C; and between 97% and 98% passed.

But we know from the provisional entry figures published by Ofqual in May that there have been some significant shifts this year, on top of the changes of the past 25 years. Candidates this year include the first to take the reformed GCSEs in maths and English, and they are also the first to take the reformed A-level maths and further maths A-levels.

This seems to have led to fewer entrants. It is likely that the experience of tougher GCSEs and the prospect of tougher A-levels has led to potentially weaker candidates not taking these subjects.

Maths is especially interesting because it is the main driver of top grades. Remarkably, nearly a third (31.4%) of all the A* grades awarded in 2018 were in maths and further maths. The percentage of top grades can therefore be expected to rise.

The trends also show that, within the overall distribution of grades, it is possible for one group of candidates to improve relative to another.

When A-levels became fully modularised in 2002, girls opened up a big lead over boys. They went ahead at grade C and above by nearly seven percentage points; they went in front at grade A with a gap of nearly three percentage points; and were ahead at A* when it was introduced in 2010.

But, in 2017, when the first tranche of Gove’s reformed exams were rolled out, boys regained the lead at A*/A and retained the lead they had taken at A*. By 2018 the gap at A*-C had halved.

With the reformed examinations in maths and further maths coming on stream in 2019, boys could improve further relative to girls, since twice as many of the top grades in these two subjects go to boys. In 2018, nearly half of the boys’ A* grades (44.4%) came from them, more than double the percentage for girls.

If there are more top grades in maths, boys are likely to edge further ahead at A* and A*/A in the overall grades, get closer at A*-C, but nevertheless be still more prone to fail.

None of these forecasts may prove to be correct. We are making predictions from trends not scientific laws. The published results are essentially what Ofqual wants them to be.
1. A-Level Reforms

1.1. In 2019 we are into the third year of the reform of A-level examinations initiated by Michael Gove when he was Secretary of State for Education. Twenty-one more of the new-style A-levels come on stream, adding to the 24 introduced in the previous two years. Notable additions this year are maths and further maths, which were held back so that they could build on the reformed GCSE sat for the first time in 2017. Only a number of ‘other modern languages’ and ancient Hebrew are still outstanding so the process is nearly complete. The full schedule is set out in Chart 1.1.

<table>
<thead>
<tr>
<th>Subject</th>
<th>2017 %NE Assess</th>
<th>2018 Subject</th>
<th>2018 %NE Assess</th>
<th>2019 Subject</th>
<th>2019 %NE Assess</th>
<th>2020 Subject</th>
<th>2020 %NE Assess</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art &amp; Design</td>
<td>100.0</td>
<td>Classical Greek</td>
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<td>Accounting</td>
<td>0.0</td>
<td>Biblical Hebrew</td>
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<td>Biology</td>
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<td>Dance</td>
<td>50.0</td>
<td>Ancient History</td>
<td>0.0</td>
<td>Arabic</td>
<td>0.0</td>
</tr>
<tr>
<td>Business Stud</td>
<td>0.0</td>
<td>Drama &amp; Theatre</td>
<td>60.0</td>
<td>Archaeology</td>
<td>20.0</td>
<td>Bengali</td>
<td>0.0</td>
</tr>
<tr>
<td>Chemistry</td>
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<td>French</td>
<td>30.0</td>
<td>Chinese</td>
<td>30.0</td>
<td>Gujarati</td>
<td>0.0</td>
</tr>
<tr>
<td>Computer Sci</td>
<td>20.0</td>
<td>Geography</td>
<td>20.0</td>
<td>Classical Civil</td>
<td>0.0</td>
<td>Greek</td>
<td>0.0</td>
</tr>
<tr>
<td>Economics</td>
<td>0.0</td>
<td>German</td>
<td>30.0</td>
<td>D &amp;T</td>
<td>50.0</td>
<td>Modern Hebrew</td>
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<tr>
<td>English Lang</td>
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<td>Latin</td>
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<td>Electronics</td>
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<td>Japanese</td>
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</tr>
<tr>
<td>English Lit</td>
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<td>Music</td>
<td>60.0</td>
<td>Environ Science</td>
<td>0.0</td>
<td>Panjabi</td>
<td>0.0</td>
</tr>
<tr>
<td>Eng Lang &amp; Lit</td>
<td>20.0</td>
<td>PE</td>
<td>30.0</td>
<td>Film Studies</td>
<td>30.0</td>
<td>Persian</td>
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<tr>
<td>History</td>
<td>20.0</td>
<td>Religious Stud</td>
<td>0.0</td>
<td>Geology</td>
<td>0.0</td>
<td>Polish</td>
<td>0.0</td>
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<tr>
<td>Physics</td>
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<td>Spanish</td>
<td>30.0</td>
<td>History of Art</td>
<td>0.0</td>
<td>Portuguese</td>
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<tr>
<td>Psychology</td>
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<td></td>
<td>Italian</td>
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<td>Turkish</td>
<td>0.0</td>
</tr>
<tr>
<td>Sociology</td>
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<td></td>
<td>Law</td>
<td>0.0</td>
<td>Hebrew</td>
<td>0.0</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>Mathematics</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Further Maths</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>Media Studies</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Philosophy</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Political Studies</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Russian</td>
<td>30.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Percentage non-examination assessment.

1.2. The nature of the reformed exams is becoming more familiar, but it is worth restating the changes from their predecessors. The new A-levels differ from their predecessors in three main ways:

- They are organised as two-year courses, rather than being split into modules. This means that an AS-level is no longer a stepping stone to the A-level, contributing as it did 40 per cent of the final marks.

- Assessment will be entirely by end-of-course examinations in many subjects, but some have retained non-examination components, with art & design continuing to be entirely assessed in this way (see Chart
1.1 for details for all subjects). The mode of the non-exam assessment has, however, been reformed with course work giving way to controlled assessment.

- Content has been made more demanding to become comparable with international standards.

1.3. Other things being equal, these changes could be expected to result in lower grades at the top levels. When the Dearing reforms switched A-levels from linear to modular assessment in 2002, the pass rate leapt by 4.5 percentage points and A grades by 2.1 percentage points. The courses and examinations will also be new to schools and colleges, which will therefore be less practised in optimising their pupils’ exam performance.

1.4. But, surprisingly, there has been little impact so far on the overall percentage of top grades awarded. How can this be? The new exams are explicitly more difficult and they come at the end of more demanding courses. One of the reasons for their introduction was to recover from a long period of grade inflation stretching back to 1982 and enable the different levels of performance to be distinguished once more.

1.5. The answer to this seeming paradox is simple: Ofqual, the regulator for England, has decided in the name of fairness to keep the overall pattern of results the same as it was in 2011 (the year grade inflation was at its peak!). What this means in practice is that if the marks fall the threshold for achieving a particular grade is lowered to keep the percentage awarded similar. While this approach protects the first candidates from being disadvantaged as guinea pigs, it does mean that the reformed A-levels are no better at distinguishing levels of achievement than those that had to be replaced.

1.6. In looking at the overall results it also has to be borne in mind that Gove’s changes only apply to England. The overall results also include Wales and Northern Ireland which together account for about eight per cent of the entries. These have their own regulatory authorities which have their own preferred styles of examining. In both countries the modular structure and coursework have been retained, and the AS continues to be a half-way house to the A-level.

1.7. Although the overall pattern of results may not change very much, the relative performance of different groups of candidates could, as for example, between boys and girls. The anticipated increased difficulty could also mean that potentially weaker candidates are put off from entering. This could influence the proportion of top grades awarded since they are adjusted in line with prior attainment at GCSE. Thus in spite of Ofqual’s policy of holding the line, there may be some changes to the pattern of results and this report seeks to see from the trends of the past three decades what these might be.
2. Trends from 1951 to 2018

2.1. The A-level grades awarded are not determined solely by the marks achieved. The conversion depends on the policies in operation at the time the exam is taken. In Chart 2.1 the leap in the pass rate of 4.5 percentage points associated with modularisation in 2002 clearly stands out. But it is also possible to discern three distinct phases in the shape of the pass-rate (A*-E) curve:

(1) 1951 to 1982, when the pass rate was on a plateau at around 70% because it had been set at that level;

(2) 1983 to 2010, when the pass rate rose from 68.2% to 97.6%, because the attempt was made to keep standards the same and award the grade to as many who could assemble the necessary marks;

(3) 2011 to the present, when the pass rate remains close to its 2011 level as a result of Ofqual applying statistical controls to keep it there.

The continuation of this ‘comparable outcomes’ policy, which is an attempt to ensure that candidates are not disadvantaged by being the first to take the new exams, will tend to mask the effects of the courses being more demanding and the restoration of end-of-course examinations.

Chart 2.1: A-Level Entries and Passes in UK, 1951-2018

2.2. So far we have been focusing on the overall pass rate, but just passing A-levels is not enough these days to get into the leading universities. At first, A-levels were pass/fail, with outstanding performance recognised by a distinction. When grades were
introduced in 1963, a ceiling of 10 per cent was put on the proportion to be awarded an A grade. This applied through to 1982. Chart 2.2 shows that during this period the percentage of A grades hovered just below this level. But when grades became attached to stated standards (criterion-referencing) the success rate took off, trebling from 9.1 per cent in 1983 to 27.0 per cent in 2010, calling into question whether it was possible to define standards with sufficient precision. They were certainly not as unambiguous as say the reference standards kept at the National Physical Laboratory in Bushy Park for reference. In the third period, the percentage of A-grades (now subdivided into A/A*) falls back somewhat from that peak to 25.8 per cent in 2016 as a consequence of Ofqual’s statistical controls.

2.3. In 2017, it is possible to discern the beginning of a fourth period with the proportion of top grades rising again. Charts 2.2 and 2.3 show that the proportion of A/A* grades went up in 2017 when the first 13 reformed A-levels were first sat and this increase was sustained in 2018 when 11 more were added. This is possibly due to weaker candidates being deterred by the more demanding courses and the tougher exams, and also AS no longer counting as the first year of the A-level. This trend is likely to continue in 2019 when 20 more new-style A-levels are rolled out including maths and further maths.

2.4. A new top grade was introduced in 2010 to distinguish those who had done exceptionally well. Chart 2.3 shows that since its inception the overall percentage achieving this grade has been close to eight per cent. In 2017, in spite of the 13 tougher A-levels, the percentage of A* awarded rose to 8.3% the highest ever, but it fell back in 2018. The main contributors to the overall figure are maths and further maths. Both are taken for the first time in 2019 and in both entries have fallen. If
this is due to weaker candidates selecting themselves out, this would mean the proportion of A* rising again.

<table>
<thead>
<tr>
<th>Year</th>
<th>% A*</th>
<th>%A*/A</th>
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<tbody>
<tr>
<td>2010</td>
<td>8.1</td>
<td>27.0</td>
</tr>
<tr>
<td>2011</td>
<td>8.2</td>
<td>27.0</td>
</tr>
<tr>
<td>2012</td>
<td>7.9</td>
<td>26.6</td>
</tr>
<tr>
<td>2013</td>
<td>7.6</td>
<td>26.3</td>
</tr>
<tr>
<td>2014</td>
<td>8.2</td>
<td>26.0</td>
</tr>
<tr>
<td>2015</td>
<td>8.2</td>
<td>25.9</td>
</tr>
<tr>
<td>2016</td>
<td>8.1</td>
<td>25.8</td>
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<tr>
<td>2017</td>
<td>8.3</td>
<td>26.3</td>
</tr>
<tr>
<td>2018</td>
<td>8.0</td>
<td>26.4</td>
</tr>
</tbody>
</table>

2.5. In this chapter we have looked at the broad shape of the results as released by the Joint Council for Qualification (JCQ) in August. The overall figures are, however, a composite of the grades awarded in the different subjects and under different regulatory authorities to candidates differing in age and gender. In the following chapters we will look at these subsets in more detail.

2.6. The main determinant of the proportions of grades awarded is the prior attainment of the candidate population at GCSE which is used to keep the results comparable from year to year. Ofqual, the regulatory authority in England, publishes provisional entries in May each year and from these it is possible to draw some inferences as to the likely outcomes to be published in August. We, therefore, consider entries extensively and from them try to discern what the results might be.
3. Grades by Subject

3.1. The percentage of grades awarded varies greatly with subject and which grades are considered. Chart 3.1 shows the distribution of the topmost grade and Chart 3.2 shows how the subjects fare in terms of A*-C grades.

Chart 3.1: Percentages A* Grades by Subject in 2018
Chart 3.2: Percentages A*-C Grades by Subject in 2018
3.2. Further maths and maths make a striking contribution to the percentage of A* awarded, bearing in mind that maths is also the most frequently taken subject. They tend to pull the average A* awarded per subject towards them so that only 12 subjects award an above average proportion compared with 26 below. The two maths subjects are joined in the above-average group by languages and sciences – subjects where there are right answers. But the more subjective art & design and English literature are there also. Talent thus plays a major role and not all subjects attract the cognitively able to the same extent.

3.3. The distribution of A*-C grades is more balanced with the overall average falling exactly halfway between the subjects. Ten of the 12 above average at A* remain above average at A*-C, with eight still in the top 12. But chemistry and physics drop dramatically down the ranking. Along with biology they lose their seats at the top table, falling to 24th, 29th and 30th, respectively, out of 38. The only subjects below them are four that are being phased out in the reforms, plus computing, PE, D&T and Welsh as a second language.

3.4. In the sciences we thus have a pattern of the high flyers hoovering up top grades, but the general performance being below average. With their strong evidence bases and well-tested theories the sciences are subjects that find you out. Take-up has been rising in recent years in response to the drive to increase the numbers studying STEM (science, technology, engineering and maths) subjects. The relatively poor average performance raises the question of whether too many are being drawn in when their abilities do not lie in this direction.
4. Gender Gaps

4.1. The way A-levels are examined has a bearing on the relative performance of boys and girls. Chart 4.1 shows that, in terms of Grades A*-C, a gap was opening up between boys and girls as a modular format became increasing popular. But when in 2002, following the Dearing Report, they became fully modularised, the girls leapt ahead by nearly seven percentage points. This huge gap subsequently narrowed somewhat, but as Gove’s reformed A-levels have been introduced, it is back to what it was before Dearing. At this stage we cannot be sure whether this is mainly associated with the exams being at the end, the more demanding content or some other factor.

Chart 4.1: Gender Gap at Grades A*-C

4.2. The time course of A*/A grades in Chart 4.2 brings out the swing to boys even more clearly. It shows that when A-levels were mainly linear, boys were ahead, but as assessment became more modular the advantage shifted to girls. After A-levels became fully modular in 2002 girls took a substantial lead which has subsequently been eroded, possibly as boys adjusted to this mode of assessment. Since 2017 when the first of Gove’s reformed A-levels were put in place, the boys have been ahead at this level once more.

4.3. The nature of the gender gap thus depends on grade. This emerges even more strongly if we focus on just A*, which was introduced in 2010 to distinguish the top performers after grade inflation had robbed the A grade of some of its meaning. Chart 4.3 shows that while girls were awarded a few more in the first year, the boys have overhauled them and the gap in the boys’ favour seems to have been cemented by Gove’s reformed exams.
Chart 4.2: Gender Gap at A*/A

Chart 4.3: Gender Gap at A*
4.4. These gaps, with girls well ahead in terms of grades A*-C and boys in front at A*/A and A* are consistent with the finding that on a wide variety of psychological tests and measures, the scores of males and females are distributed differently. Males tend to be more spread out, with more very high and very low scorers. Females’ scores tend to bunch around the mean. Alice Heim, the psychologist famous for her work on personality and intelligence, with her tongue firmly in her cheek, called this phenomenon ‘the mediocrity of women’. Given these distributions, it is possible for females to have a higher mean score, but there still be more males at the top.

**Gender Gap in Subjects**

4.5. We can thus see how the A-level grades of girls can be better overall, but nevertheless boys achieve more of the top grades. But it is important to remember that the overall grade distribution published by the Joint Council for Qualifications in August each year is a composite of all the subject distributions, and is not a single measure. The percentages of A* and A grades awarded varies considerably with subject, as is shown in Chart 3.1 on page 6, with by far the highest percentages in further maths, followed by maths itself, then languages and the sciences. All are subjects where there are right answers. The overall grades of boys and girls could, therefore, simply reflect the subjects they have chosen to study.

4.6. Chart 4.4 shows the percentages of A* awarded in each subject in 2018 and ranks them in order of how far the boys were ahead. Strikingly, those where boys had the largest gaps in their favour tended to be those awarding the highest percentages of the top grade – maths, sciences and languages. Boys it seems tend to gravitate to subjects where there are right answers and in which top grades can confidently be awarded. Girls, on the other hand, tend to be attracted to subjects which are more personal and subjective, where there are fewer top grades. This is necessarily a broad brush description and there are exceptions. An interesting one which came to light when the results for English language and English literature began to be published separately is that boys, very much in the minority, obtain proportionally more A* in English literature.

4.7. In some subjects, such as maths and physics, boys not only outscore the girls, but are in the majority, so these subjects contribute heavily to the overall percentage. In others, such as the languages, they get a higher proportion of top grades but are in the minority. On occasions, as in physical education, the reverse is true with the girls in the minority doing much better than boys. It is likely that to choose a subject associated with the opposite sex, a person has to be more sure of themselves and their interests and abilities, and therefore more likely to do well.

4.8. When we compare the relative performance of boys and girls in terms of A*-C grades, in Chart 4.5, a completely different picture emerges. Consistent with the view that girls’ performance tends to be bunched around the mean, they are ahead by a wide margin at this level. Boys do better in only five subjects – three languages again (where they are in the minority), plus chemistry and music. In biology and business studies there is no difference, but in all 24 other subject groups the girls are awarded more grades of C and above, including six where the gap is ten or more percentage points. Girls are even ahead in maths, further maths and physics at A*-C.
Chart 4.4: Gender Gap at A* by Subject in 2018
Chart 4.5: Gender Gap at A*-C, 2018

Boys' Lead in Percentage Points

-3 -2 -1 0 1 2 3

German Spanish French Chemistry Music Biology Business Studies Further Maths Religious Stud Maths Political Stud History Economics Physics Eng Lit Computing

Boys' Lead in Percentage Points

-12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1

Other Mod Lang ALL Class Subj Other Sci Eng LangLit Sociology Geography Art & Design Law Drama D & T PE Psychology Media ICT
Composition of Overall A* Grade

4.10. So far we have been looking at percentages of grades awarded, but the actual numbers are important. The biggest contributors to the overall total are those which have large entries and/or award a high proportion of A*. Chart 4.6 shows that two stand-out – maths and further maths. Maths alone accounts for 24 per cent of the total A* grades awarded in 2018. Together with further maths it accounts for nearly a third (31.4%) of all A* awarded. These are both examined for the first time in 2019 in their reformed versions and any changes in take-up or outcomes could have a major impact on the results overall.

Chart 4.6: Numbers of A* Awarded in Selected Subjects, 2018

<table>
<thead>
<tr>
<th>Subject</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Entries</td>
<td>%A*</td>
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<tr>
<td>Maths</td>
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<td>17.3</td>
</tr>
<tr>
<td>Further Maths</td>
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<td>29.1</td>
</tr>
<tr>
<td>Physics</td>
<td>29.4</td>
<td>9.5</td>
</tr>
<tr>
<td>Chemistry</td>
<td>25.6</td>
<td>9.6</td>
</tr>
<tr>
<td>Economics</td>
<td>21.2</td>
<td>6.6</td>
</tr>
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<td>Geography</td>
<td>16.3</td>
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</tr>
<tr>
<td>English Literature</td>
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<td>9.3</td>
</tr>
<tr>
<td>Art &amp; Design</td>
<td>10.7</td>
<td>10.4</td>
</tr>
<tr>
<td>All Subjects</td>
<td>365.4</td>
<td>8.5</td>
</tr>
</tbody>
</table>

1. Entries and numbers of A* awarded in thousands.

4.11. Not only that, Chart 4.6 also shows that maths and further maths make a major contribution to the gender difference in performance at A*. Together they account for approaching half the A* (44.4%) awarded to boys, but only a fifth (19.5%) of those awarded to girls. Maths alone contributes a third (33.1%) of the boys’ A*, more than double the 15.6% which it contributes to the girls’ total (but nevertheless still the largest contributor). If there are changes to the grade patterns in these subjects, it will bear strongly on the relative performance overall of the boys and girls.

4.12. Maths and further maths are not alone in determining the extent and direction of the gender gap. Chart 4.6 shows that they are backed up by the large differences in favour of boys in physics, chemistry and economics – also quantitative, impersonal subjects, with right answers at this level. These five subjects account for two-thirds (65.9%) of the A* awarded to boys.

4.13. Girls’ draw their A* more evenly across the subjects. Chart 4.6 shows maths is the main source here also, followed by art & design. Psychology and sociology, which attract mainly girls who outperform boys by a wide margin contribute strongly too, as does English literature in spite of the boys getting the higher grades. There is a very different flavour to these subjects to those in which the boys star. They are about people and, therefore, more interpretive making the marking more subjective.
4.14. This is not an argument for awarding the same proportions of grades in every subject. The subjects are what they are and they attract students of different abilities. It does, however, seem that boys are more drawn to subjects where there are right answers so that it is possible to score the very high marks which merit an A*. 
5. England, Wales and Northern Ireland

5.1. Responsibility for education is devolved to the countries of the United Kingdom. The much discussed GCSE and A-level reforms have taken place only in England. Examinations in Wales and Northern Ireland remain much as before with a modular structure, assessment by course work with AS integral to the A-level. Over time the examinations in the three UK countries will inevitably grow further apart. There will be three distinct versions of each A-level. In the transition period they are still sufficiently similar for meaningful comparisons to be made.

5.2. Chart 5.1 shows the percentage of A*/A awarded by the exam boards in the three countries in the past two decades. Northern Ireland clearly and consistently has awarded more top grades. A*/A grades rose to a peak of 35.4 per cent in 2008, since when they have fallen back somewhat to 30.4 per cent in 2018.

Chart 5.1: Trends in A*/A Grades Awarded in UK Countries

5.3. In England, it is the picture we have already seen of grades going up year-by-year, rising to a high point of 26.8 per cent in 2011, when the comparable-outcomes approach was adopted and the proportion of top grades levelled off to stand at 26.2 per cent in 2018. Wales was initially ahead of England, but as grades rose in England it fell behind. Top grades have risen in Wales for the past two years and by 2018 it moved just ahead of England once more, with 26.3 per cent A*/A.

5.4. When it comes to A*-C, the countries’ rank similarly, but are closer. Chart 5.2 shows that Northern Ireland is out in front reaching a peak of 84.6 per cent in 2009 which is a level that it has more or less maintained. In England, the percentage went up rapidly from 58.8 per cent in 2001 to 75.0 per cent in 2006 from which it has edged up reaching a peak of 77.5 per cent in 2016. Wales initially was well ahead of England...
on 73.6 per cent, but has remained more or less on a plateau since England overtook it after Wales peaked at 76.5 per cent in 2009.

Chart 5.2: Trends in A*-C Grades Awarded in UK Countries

5.5. Whether we look at A*-C grades or A*/A grades, Northern Ireland is consistently streets ahead. It could be that its exam board operates to different standards, but until they were separated in the recent reforms, the regulatory authorities and the awarding bodies in the three countries worked very closely together to maintain common standards.

5.6. The outstanding performance of pupils in Northern Ireland also emerges in international comparisons such as PISA and TIMSS, so it is much more likely to be a real difference. Northern Ireland’s impressive performance does not receive the attention that it deserves, perhaps arising from a reluctance on the part of the educational establishment to acknowledge that its pre-eminence could conceivably have anything to do with it having a grammar school system.
6. Trends in Entries

6.1. The popularity\(^1\) of A-level subjects has changed over the years. Chart 6.1 shows the twelve most frequently taken in 1998, 2008 and 2018. English has been consistently in the top two, although now overtaken by maths. General studies, the attempt to introduce breadth into A-levels, was second in 1998, and fourth in 2008, but had dropped to 31\(^{st}\) out of the 39 subject groups by 2018. But it is in free-fall because it no longer counts towards league tables nor is accepted as an entry qualification by the leading universities. In fact, it is literally in terminal decline, coming to an end in 2019.

<table>
<thead>
<tr>
<th>Subject</th>
<th>1998 Entries(^1)</th>
<th>Subject</th>
<th>2008 Entries(^1)</th>
<th>Subject</th>
<th>2018 Entries(^1)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>94.1</td>
<td>English</td>
<td>89.1</td>
<td>Maths</td>
<td>97.6</td>
</tr>
<tr>
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<td>Maths</td>
<td>64.6</td>
<td>English</td>
<td>72.0</td>
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<tr>
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<td>Biology</td>
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<td>General Studies</td>
<td>54.9</td>
<td>Psychology</td>
<td>59.7</td>
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<td>52.7</td>
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<td>History</td>
<td>46.5</td>
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<td>Chemistry</td>
<td>41.7</td>
<td>Physics</td>
<td>37.8</td>
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<tr>
<td>Business Studies</td>
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<td>Media/Film/TV</td>
<td>32.7</td>
<td>Sociology</td>
<td>34.9</td>
</tr>
<tr>
<td>Physics</td>
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<td>Geography</td>
<td>31.7</td>
<td>Geography</td>
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</tr>
<tr>
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<td>29.8</td>
<td>Business Stud</td>
<td>31.0</td>
<td>Business Stud</td>
<td>32.8</td>
</tr>
<tr>
<td>Sociology</td>
<td>26.2</td>
<td>Sociology(^3)</td>
<td>28.4</td>
<td>Media/Film/TV</td>
<td>25.4</td>
</tr>
</tbody>
</table>

1. In thousands.
2. Includes further maths.
3. Physics in 13\(^{rd}\) spot with 28.1K sitting the exam

6.2. Of the top dozen subjects in 1998, 2008 and 2018 respectively, ten appear in all three – maths, English, biology, chemistry, history, geography, art & design, psychology, sociology, and business studies. The other places are taken by three subjects each of which appears twice. General studies we have already mentioned, physics nearly made it into all three coming 13th in 2008, media/film/TV burst on the scene in the early part of the century, but has now fallen back somewhat. There is not a single foreign language in any of the lists.

6.3. In 2018 there was a huge range in entries, from 97,627 in maths and 72,015 in the three new English exams combined, to 26 in critical thinking and 1,162 in communication studies (leaving aside the 332 in Irish and 252 in Welsh first language which are specific to those countries). Like general studies, both communication studies and critical thinking are being phased out, along with ICT and various applied

\(^1\) Entries’ and ‘numbers sitting the exam’ are used interchangeably although they do differ somewhat, with entries being the preferred term because it makes for more concise sentences.
A-levels that derived from the General National Vocational Qualifications. Entries fell by 1.9 per cent in the year to July 2019.

**Demography**

6.4. Chart 6.2 shows that the fall in entries parallels the fall in the UK population of 18-year-olds, published by the Office for National Statistics. The comparison is difficult to make, however, since this population estimate includes Scotland (8.4% of the UK population) which has its own qualifications. It is also a moot point whether the national population is the right comparator rather than the cohort that has successfully completed GCSEs.

![Chart 6.2: Overall Entries in Relation to Cohort](chart)

**English & Maths**

6.5. English and maths were the first two subjects to be reformed as GCSEs in 2017. The 2019 A-level candidate cohort is thus the first to take the new GCSEs, and it is also the first to take the reformed A-levels in maths and further maths, whose introduction was held back so it could build on the more demanding GCSE. Provisional figures from Ofqual show that entries to both English and maths fell in 2019, perhaps because the experience of the tougher GCSEs and the prospect of harder A-levels put potentially weaker candidates off.

6.6. Chart 6.3 traces the trends in the take-up of these two core subjects. Both fell in the run-up to the modularisation of A-levels in 2002, which put into effect the recommendations of the Dearing Review. Both then grew strongly, but English peaked in this phase at 90 thousand in 2011 and then for several years plateaued, before falling to 72 thousand in 2018. Maths grew particularly strongly because it was successfully argued that the content changes at the time of the Dearing reforms had made the subject too difficult and the demands were reduced in 2004. It
subsequently took off reaching a peak in 2018 of 97,600 entries, moving ahead of English in 2014 to take the number one spot. Meanwhile entries in further maths trebled.


6.7. Putting the scaled-up provisional figures from Ofqual for 2019 into the graph shows that both English and maths entries fell. The English entries also fell in 2017 when the reformed A-levels were first introduced and the decline has continued through to 2019 when the candidates will have also have taken the reformed GCSE in 2017.

6.8. It may be the tougher courses and exams are causing candidates to think more carefully about their A-level choices, and potentially weaker ones are looking elsewhere. It could be argued that English entries began to decline in 2016 before the reformed A-levels were in place. But there had been previous changes to the structure of GCSE English reducing the amount of internal assessment ceded to the schools.

Sciences

6.9. Entries in A-level physics and chemistry dropped dramatically when the 1988 National Curriculum turned physics, chemistry and biology into a subject called ‘science’, and the GCSEs were changed accordingly. The science GCSEs proved to be a less effective ladder to A-level in the physical sciences than the old O-levels had been. In part, this was because, with physics teachers being very hard to come by, national curriculum science was often taught by biologists.

6.10. Gordon Brown, when he was Chancellor of the Exchequer, as part of his Science Investment Strategy, in 2004, incentivised schools to return to the separate sciences and Chart 6.4 shows that this seems to have borne fruit with the physical science A-levels rising year by year. Entries in all three sciences fell for several years from 2015
along with the decline in the number of 18-year-olds, but with the introduction of the reformed A-levels in 2017 numbers went up in physics and chemistry. This continued in 2018 with biology also increasing. Unlike maths and English, the introduction of the new exams seems to have boosted the sciences. Perhaps this is connected with the removal of practicals from the exam. The increases, however, are far from a swing to the sciences. The 2018 entry of 37.8 thousand in physics in 2018 pales beside the nearly 56 thousand in the 1980s.

Chart 6.4: Trends in Entries to Sciences

Languages

6.11. The most dramatic of changes in the number of entrants in the past three decades is the collapse of foreign languages. Entries in French were only a quarter in 2018 (8,700) of what they were in 1992 (31,300). It has now been overtaken by ‘other modern languages’ (9,700) a collection of languages such as Polish, Arabic and Gujarati, which could easily be the candidates’ first language or the language of the home. German fell from 11,300 to 3,100, fewer entries than general studies which is on its way out. Spanish, to some extent, bucked the trend rising from 4,700 to 8,300 but this is still below French.

6.12. Quite why students in the UK are so reluctant to learn another language is still a matter for speculation. Perhaps it is because English is a world language and the British take it for granted that the people of other countries will speak it. Low A-level entries limit the output of graduates, so it is difficult to find the teachers, and this will impact on the quality of language teaching in schools. Perhaps it is because too often the teaching of languages begins in secondary schools when receptivity to language learning is much less than in childhood, and it is a mystery why we do not teach modern languages from the early years, as other countries do English.
Chart 6.5: Trends in Entries to Modern Languages

- French
- German
- Spanish
- Other ML

Chart 6.6: Trends in Entries to Social Sciences

- Psychology
- Sociology
- Economics
- Political Studies
Social Sciences
6.13. In contrast to modern languages the social sciences have all grown in the past decade. In psychology there has been considerable growth over 25 years. By 2018 entries had more than trebled to 59,700 from 19,500 in 1994. This has been fuelled mainly by girls who make up three-quarters of the entry. In sociology growth begins with the Dearing reforms of 2002, with entries rising from 22,700 to 34,900. Again it is popular with girls who in 2018 comprised 77.1 per cent of the entry.

6.14. In the other two social sciences, economics and political studies, boys are in the majority. Economics has grown since the Dearing reforms, but the 2018 entry of 30,000 is still below its 1992 entry of 40,200. Political studies has also increased its entries since Dearing recovering from its lowest point in 1994 (13,300) to reach 18,000 in 2018.

Humanities
6.15. History and geography remain staples of the sixth form curriculum. Geography entries fell away from 1998 onwards, but picked up again in 2015 perhaps associated with its inclusion in the GCSE core curriculum defined by the EBacc. But it fell again in 2018 when the reformed A-level was introduced.

Chart 6.7: Trends in Entries to Humanities

6.16. History enjoyed a long period of growth following the Dearing reforms of 2002 reaching a peak of 55,800 in 2015. It then fell away and it too went down when the reformed A-level was first examined in 2018. Classics is taught mainly in the independent schools. In 1992 there were 8,400 entries in the group of subjects which includes Latin, Greek and classical civilisation. This was its high point in the three
decades, and it drifted downwards to 6,400 in 2017, with a further fall to 5,700 when the reformed A-levels in Latin and Greek came into play.

**Arts and Media**

6.17. The Arts and Media entries have all followed a similar trajectory perhaps best exemplified by the media/film/TV studies group. First listed separately in 1994 with 5,600 entrants, it grew rapidly, peaking in 2011 at 33,900, since when it has fallen to 25,400 in 2018.

**Chart 6.9: Trends in Entries to Arts and Media**

6.18. All the other Arts and Media subjects shown fell from at least 2012 onwards, suggesting that the decline in the number of 18-year-olds played a part. Even art & design where entries have remained high over the three decades followed this trajectory. It attracted 34,100 entries in 1992, peaking at 46,500 in 2012, before falling to 43,000 in 2018. Three quarters of the entrants in 2018 were girls and, as it is high scoring in terms of A*, it is the main source of the girls’ total A* grades after maths. Art & design is the only one of Gove’s reformed A-levels that does not have an examination, but is assessed on work completed during the course.

**Professional Subjects**

6.19. The chart for what we have called professional studies, Chart 6.10, strikingly illustrates what a pivotal year the full modularisation of A-levels in 2002 was. The lines for business studies and computing come so close together that year that they give the impression of crossing over when, in fact, they merely meet. Business studies having dipped to 2002 then recovers, and computing having risen rapidly to 2002 falls away sharply as the alternative of ICT (information and communications technology) is introduced.
6.20. Under the Gove reforms, computer science, as the subject of the future, was one of the first tranche of the new A-levels to be examined in 2017, and ICT is to be ended in 2019. In 2018, their combined entry was 15,900 – a long way short of computing’s entry of 26,800 in 2002. Computer science has much still to do to fully establish itself as the gateway to the exciting developments in the technologies and AI at universities. In 2018, it was still below law which has kept a steady entry of about 11,000 per year over the 25 years.
7. Forecast for 2019

7.1 Since 2012 Ofqual, the exams regulator, has been seeking through an approach which it calls ‘comparable outcomes’ to keep the percentages of grades awarded similar from year to year. It was introduced initially to combat the rampant grade inflation which had seen increases in the pass rate of nearly 30 percentage points from 68.2 per cent in 1982 to 97.8 per cent in 2011. But it has continued with the approach even though more rigorous examinations are being rolled out, so as not to disadvantage the first candidates to take them. One might question the logic here since one of the reasons for the reforms was to have exams which enabled users of the qualifications to be better able to tell applicants apart. And it is conceivable that ‘comparable outcomes’ will be ended once the new exams have settled down. But comparable outcomes is what it is at present.

7.2 The overall pattern of results in 2019 is, therefore, likely to be close to what it was last year. That is there will be about eight per cent A* grades, 26 per cent A*/A grades, 77.0 per cent A*-C grades and a pass rate somewhere between 97 and 98 per cent. Boys are likely to be ahead in the top grades and girls at A*-C and in the overall pass rate.

7.3 The way Ofqual aims to keep standards consistent over time is to take into account the prior attainment of the candidate population. This it determines from GCSE results, so if the candidate cohort does better than the previous one the A-level grades are allowed to rise, if they did worse the grades are lowered. Two things then can alter the grades: (1) the candidate population changes significantly; and/or (2) the GCSE results change significantly.

Changes in Entries

7.4 Each year in May Ofqual publishes the provisional entry figures for A-levels to be sat that year in England. The headline results published by the Joint Council for Qualifications in August are for the whole UK, but since about 92 per cent of the entries are in England, the Ofqual figures give a reasonable indication of what the numbers actually sitting the exams are likely to be.

7.5 Chart 7.1 draws on the Ofqual data to show the change in entries in each subject this year compared with last. In total, entries went down by about two per cent which parallels the fall in the number of 18-year-olds. Anything greater or less than this figure, therefore, reflects redistribution of the candidates.

7.6 Among the fallers are the two most frequently taken A-levels – maths and English. The sharpest decreases are in English, where English language is down by 22.5 per cent, English language and literature by 15.8 per cent, and English literature by 8.6 per cent. These continue a decline that began in 2014, but which accelerated when the reformed exams were first sat in 2017.

7.7 In this, the first year of the new exams in maths, entries in maths itself have dropped by 5.2 per cent and in further maths by 9.9 per cent. In contrast to English this comes after a long period of growth. Since 2004 entries in maths have risen by 46 per cent, and in further maths they have trebled.
Chart 7.1: Change in Provisional A-Level Entries\(^1\) in England 2019
7.8 The main gainer are the social sciences and sciences. In the case of physics and chemistry this represents recovery from a slump which was associated with the switch from the separate sciences to combined science at GCSE, which schools were encouraged to make, but which Gordon Brown reversed when he was Chancellor of the Exchequer. Psychology and sociology, which are popular particularly with girls, have grown continually.

Likely Impact on Grade Pattern

7.9 By far the biggest contributors to the total of A* awarded are maths and further maths. In 2018 they accounted for over 30 per cent of all the A*s awarded. The fact that the entries of both have fallen this year could thus affect the overall percentage of A*. Those who in the past might have taken maths but have been put off either because of the more demanding reformed GCSE in 2017 or because the A-level is intended to be more difficult are likely to be the potentially weaker candidates. Paradoxically, therefore, although there may be fewer A* awarded in these subjects, the percentage is likely to increase, if Ofqual controls for prior attainment.

7.10 Other strong contributors to the A* total in 2018 were art & design (5.3%), chemistry (4.6%), English literature (3.8%) and physics (3.6%). Of these, entries to art & design, which has been largely unaffected by the reforms, have held steady. Those in English literature have fallen so here again grades may rise as more self-selection takes place. Chemistry and physics have shown increases and by the same logic grades could fall.

7.11 The biggest decrease in entries was in English language which was also nearly the lowest for A* grades awarded. English language and literature fared not much better. If potentially weaker candidates are now filtering themselves out in the face of the more demanding exams, the grades could be expected to rise in these subjects too.

7.12 Putting all this together suggests that the grade pattern this year will be close to what it was last year, but will tend to nudge upwards as a result of pupils selecting themselves out of subjects where they think they would do less well. They are more likely to do this because they will have been the first cohort to have experienced the tougher GCSEs in English and maths, which were first run in 2017.

Likely Impact on the Relative Performance of Boys and Girls

7.13 Maths and further maths are also major contributors to the gender gap. Over twice as many A* in these subjects are awarded to boys as to girls. They comprise nearly half of all A* awarded to boys. If the drop in entries is because potentially weaker candidates looked elsewhere then the percentages of top grades would go up. This would lead to boys moving somewhat further ahead at A* and also at A*/A.

7.14 But as important as maths and further maths are to the A* total, this still leaves over half to come from other subjects. Physics, the third highest contributor to the difference in favour of boys, has increased its entries in 2019 somewhat so there could be a slight fall in its contribution. Art & design is the subject with the biggest gender gap in favour of girls and entries here have held firm so the grade pattern is unlikely to be affected. Psychology and sociology continue to grow rapidly, but award few top grades, so the changes in entries are unlikely to make much difference.
Thus while the relative performance of boys and girls is likely to remain much the same, on the assumption that it is the weaker candidates that are more likely to be put off by the prospect of tougher exams, it is forecast that the percentages of top grades will see marginal increases. Moreover, in maths and further maths the top grades will continue to go mainly to boys, so that if anything they will move further ahead. This is supported by the reformed GCSE in maths which was introduced in 2017 where boys improved their performance relative to girls.

**Conclusion**

Those then are the forecasts. The overall pattern of results to remain much the same, but with top grades rising a little, boys continuing to be ahead in the top grades and increasing their lead slightly, and girls continuing to be well ahead in terms of A*-C grades and the overall pass rate.

But the results may not turn out like this. We are not making predictions from scientific laws, but are projecting from recent trends. The outcomes will be what Ofqual – the regulator answerable to the government - wants them to be.