Relationships between teacher estimates and results in Scotland

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Contents

1   Summary

♦ Teachers in Scotland routinely submit estimates each year to the Scottish Qualifications Authority (SQA) to use in awarding National Qualifications. Estimates also form part of the annual cycle of assessment in Northern Ireland and Wales.

♦ In 2020 examinations were cancelled due to the COVID-19 pandemic. SQA published new guidance for centres on estimates. The guidance aimed to strengthen the process because estimates had to form the basis of the alternative awarding process in 2020. In 2021, the estimates guidance was updated again, and SQA's Understanding Standards materials were expanded to include more information on how to devise valid internal assessments to support the process of determining estimates.

♦ Overall, when all National 5, Higher and Advanced Higher courses were combined, estimated attainment rates corresponded very well with results, between 2017 and 2019, at grades A to C (estimates were typically 1 percentage point higher than results) but there was a gap at grade A (estimates were typically 6 percentage points lower than results). In 2022, attainment rates were higher than estimated: grade A to C attainment was 3 percentage points higher than estimated, and grade A attainment was 5 percentage points higher than estimated.

♦ In total 51% of entries were awarded the same grade as estimated in 2022, whilst 30% were awarded a higher grade and 19% were awarded a lower grade. When estimated grades did not match awarded grades, they most commonly differed by one grade and the awarded grade was more often higher (than estimated) than lower.

♦ At National 5, the A to C attainment rate was 4 percentage points higher than estimates in 2022 (between 0 and 1 percentage point lower between 2017 and 2019), and the grade A attainment rate was 7 percentage points above estimates (approximately 8 percentage points between 2017 and 2019). 52% of National 5 entries were awarded the same grade as the estimate compared with 48% in 2019.

♦ At Higher, the A to C attainment rate was 2 percentage points higher than estimates in 2022 (approximately 2 percentage points lower between 2017 and 2019), and the grade A attainment rate was 3 percentage points above estimates (4 to 5 percentage points between 2017 and 2019). 49% of Higher entries were awarded the same grade as the estimate compared with 44% in 2019.

♦ At Advanced Higher, the relationships between results and estimates are somewhat different to the other levels. The A to C attainment rate is typically higher for estimates than results (by 3 or 4 percentage points between 2017 and 2019). The same was true in 2022 but the gap was smaller, with results 2 percentage points below estimates. As seen at other levels, the grade A attainment rate is typically lower for estimates than results (estimates were 5 to 6 percentage points lower than results between 2017 and 2019), but in 2022 the relationship was reversed (in contrast to the other levels) with 1% fewer entries awarded a grade A than estimated. 48% of Advanced Higher entries were awarded the same grade as the estimate compared with 43% in 2019.

♦ Overall, there is better alignment between results and estimates in 2022 than in the years preceding the pandemic. The approach to awarding, additional effort exerted by teachers in the estimates process since the cancellation of exams, as well as SQA's

support through Understanding Standards, are all likely to be factors in explaining this pattern.

2 Background

SQA collects estimates of attainment from centres every year as a part of the procedure for awarding National Courses. Centres provide estimates of attainment against the national standard as bands on a 9-point scale that is associated with notional percentage ranges. The relationship between bands and grades is shown in Table 1. Estimates contribute towards the decisions about grade boundaries for a course at a cohort level rather than an individual level. In particular, estimates can give an indication of the demand of the course assessment as a result of the perceived standard of the cohort compared to previous years. SQA also collects estimates as one line of evidence in support of an 'Exceptional Circumstances Consideration' request (Guidance on Producing Estimates, 2021).

Table 1: Relationship between bands and grades

Band	Estimated performance	Notional range (%)	Grade
1	Band A (upper)	85–100	A
2	Band A (lower)	70–84	A
3	Band B (upper)	65–69	B
4	Band B (lower)	60–64	B
5	Band C (upper)	55–59	C
6	Band C (lower)	50–54	C
7	Band D	40–49	D
8	No Award	30–39	No Award
9	No Award	0–29	No Award

During the global pandemic, SQA, in common with education systems around the world, had to use different approaches to assessment and certification.

In 2020, teachers and lecturers submitted estimates to SQA. The estimates were based on performance throughout the course and how they thought learners might perform in the final examination, meaning that there were elements of both demonstrated and inferred attainment (Table 2).

Table 2: Summary of estimate guidance for 2017 to 2022

Year	Demonstrated Attainment	Inferred Attainment	Submission deadline	Submitted to SQA
2017–2019	Yes	No	April	Band estimate
2020	Yes	No	April 2020	Band estimate
2020 (updated)	Yes	Yes	May 2020	Refined band estimate & rank order
2021	Yes	No	June 2021	Band estimate as provisional result
2022	Yes	No	April 2022	Band estimate

The 2021 alternative certification model was based on demonstrated attainment. Teachers and lecturers collected evidence of learning and skills before using their professional judgement to determine provisional results for their learners.

Scotland returned to formal national exams for National Qualifications in 2022. A package of measures (including course modifications and revision support, as well as wider support from across the education system at a national, regional, local and centre level) was in place. In 2022, the role of estimates and guidance for generating them was closer to the years preceding the pandemic, but use of estimates as provisional results remained as a contingency.

The role that estimates played in 2020, 2021 and 2022 was substantially different in each of these years. This report examines the relationships between awarded grades and estimates in exam years. The analysis includes 2022 and the three years prior to the pandemic (2017 to 2019) but does not include 2020 and 2021 when exams did not take place. The focus is on the correspondence between estimates and results in attainment rates (the proportion of entries attaining a particular grade or higher) at grade A and at grades A to C. Patterns of attainment across years are not examined here but are reported and discussed in the summary of provisional attainment statistics published on results day.

The overall correspondence between estimates and results — combining National 5, Higher, and Advanced Higher — is presented in section 3. Each qualification level is presented individually in section 4. Section 5 examines the correspondence of estimates and results at a course level to examine the overall alignment over time.

Further background about the role and reliability of teacher estimates is given in Ofqual's literature review (Ofqual, 2020).

3 Overall relationship (National 5, Higher, Advanced Higher combined)

Teachers typically estimate a lower proportion of A grades than awarded in any exam year. Between 2017 and 2019, the gap between estimated grades and awarded grades was stable, with between 6 and 7 percentage points more A grades awarded than estimated. The estimated proportion of A grades was again lower than results in 2022, but the gap decreased to 5 percentage points. This finding may suggest a contrast with predicted A-level grades in England, where only 1 in 5 candidates attain equivalent or better grades than predicted across three A-levels (UCAS 2016, 2021).

Figure 1. Difference in estimated and awarded grade A rate by year for all National 5, Higher and Advanced Higher entries

Estimates typically underestimate grade A attainment

Difference in estimated and awarded grade A rate by year for all National 5, Higher and Advanced Higher entries
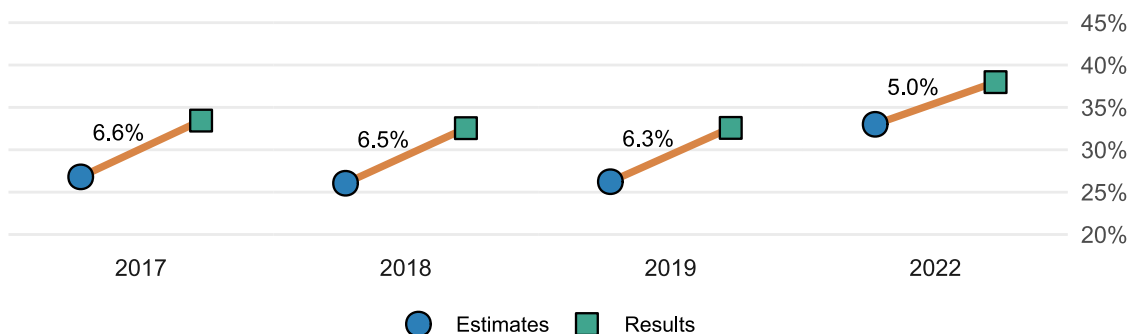
Table 3. Difference between results and estimates in grade A attainment for National 5, Higher and Advanced Higher entries combined

Year	Estimated A rate	Awarded A rate	Difference (percentage points)
2017	26.8%	33.4%	6.6
2018	26.0%	32.6%	6.5
2019	26.2%	32.6%	6.3
2022	33.0%	38.0%	5.0

The lower proportion of A grades in estimates than results in all years is also clear in the complete grade distributions for estimates and results.

Figure 2. Comparison of overall grade distributions for estimates and results.

Overall attainment was higher than estimates in 2022
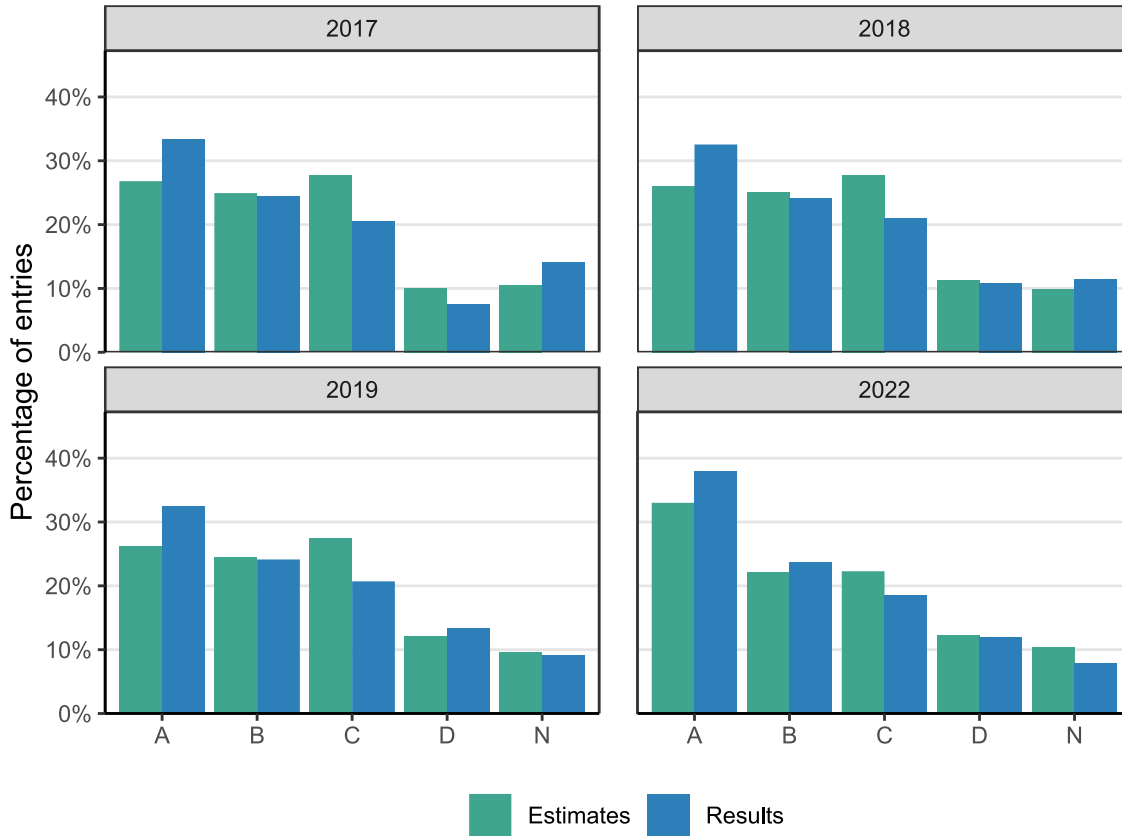
Table 4. Estimated and awarded grade distributions for 2017 to 2019 and 2022 for National 5, Higher and Advanced Higher combined

Year	Type of grade	A	B	C	D	No award	A to C
2017	estimate	26.8%	24.9%	27.7%	10.0%	10.5%	79.5%
2017	result	33.4%	24.5%	20.5%	7.5%	14.0%	78.4%
2018	estimate	26.0%	25.0%	27.8%	11.3%	9.9%	78.9%
2018	result	32.6%	24.2%	21.0%	10.9%	11.5%	77.7%
2019	estimate	26.2%	24.6%	27.4%	12.2%	9.6%	78.3%
2019	result	32.6%	24.1%	20.7%	13.4%	9.2%	77.4%
2022	estimate	33.0%	22.1%	22.3%	12.3%	10.3%	77.4%
2022	result	38.0%	23.7%	18.6%	11.9%	7.8%	80.2%

A different relationship is seen for attainment at grades A to C. Before the pandemic, the trend was for estimates to be higher than results by around 1 percentage point (1 in 100 fewer entries were awarded grades A to C than estimated). However, in 2022, estimated attainment at grades A to C was lower than seen in the three years preceding the pandemic and almost 3 in 100 *more* entries were awarded a grade of A to C than estimated.

Figure 3. Difference in estimated and awarded grades A to C rate by year for all National 5, Higher and Advanced Higher entries

A to C attainment was higher than estimates in 2022 but lower pre-pandemic

Difference in estimated and awarded grades A to C rate by year for all National 5, Higher and Advanced Higher entries
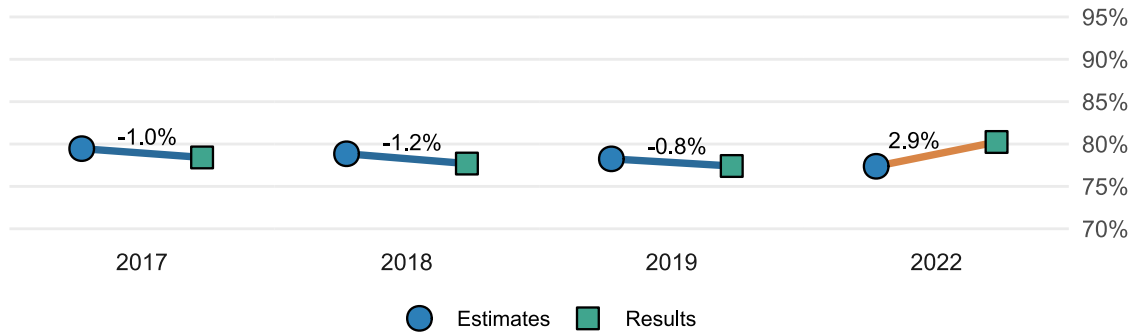

Table 5. Difference between results and estimates in grade A to C attainment for National 5, Higher and Advanced Higher entries combined

Year	Estimated A to C rate	Awarded A to C rate	Difference (percentage points)
2017	79.5%	78.4%	-1.0
2018	78.9%	77.7%	-1.2
2019	78.3%	77.4%	-0.8
2022	77.4%	80.2%	2.9

3.1 Is the correspondence between results and estimates even across the grade range?

In 2022, almost 4 in 5 entries (79%) estimated an A grade were awarded an A. Correspondence between estimates and results is substantially lower for the other estimated grades. At grades B, C and D, results can be higher or lower than estimated. Approximately 4 out of 10 (39%) entries estimated a grade B were awarded a B, 34% of estimated C grades were awarded Cs, 32% of estimated D grades were awarded Ds, and 45% of estimated No awards resulted in No awards. This suggests that estimating attainment is easier at grade A.

In total 51% of entries were awarded the same grade as estimated in 2022, whilst 30% were awarded a higher grade and 19% were awarded a lower grade. When estimated grades did not match awarded grades, they most commonly differed by one grade and the awarded grade was more often higher (than estimated) than lower.

Figure 4. Heatmap showing overall correspondence between estimates and results in 2022.

2022: Estimates compared to results

26% of entries were estimated a grade A and awarded an A

19% of entries were awarded lower grades than estimated (sum of upper triangle)

Result

Estimate	A	B	C	D	N
A	26%	5%	1%	0%	0%
B	8%	9%	4%	1%	0%
C	3%	7%	8%	4%	1%
D	1%	2%	4%	4%	2%
N	0%	1%	2%	3%	5%

30% of entries were awarded higher grades than estimated (sum of lower triangle)

51% of entries were awarded the same grade as estimated (sum of diagonal)
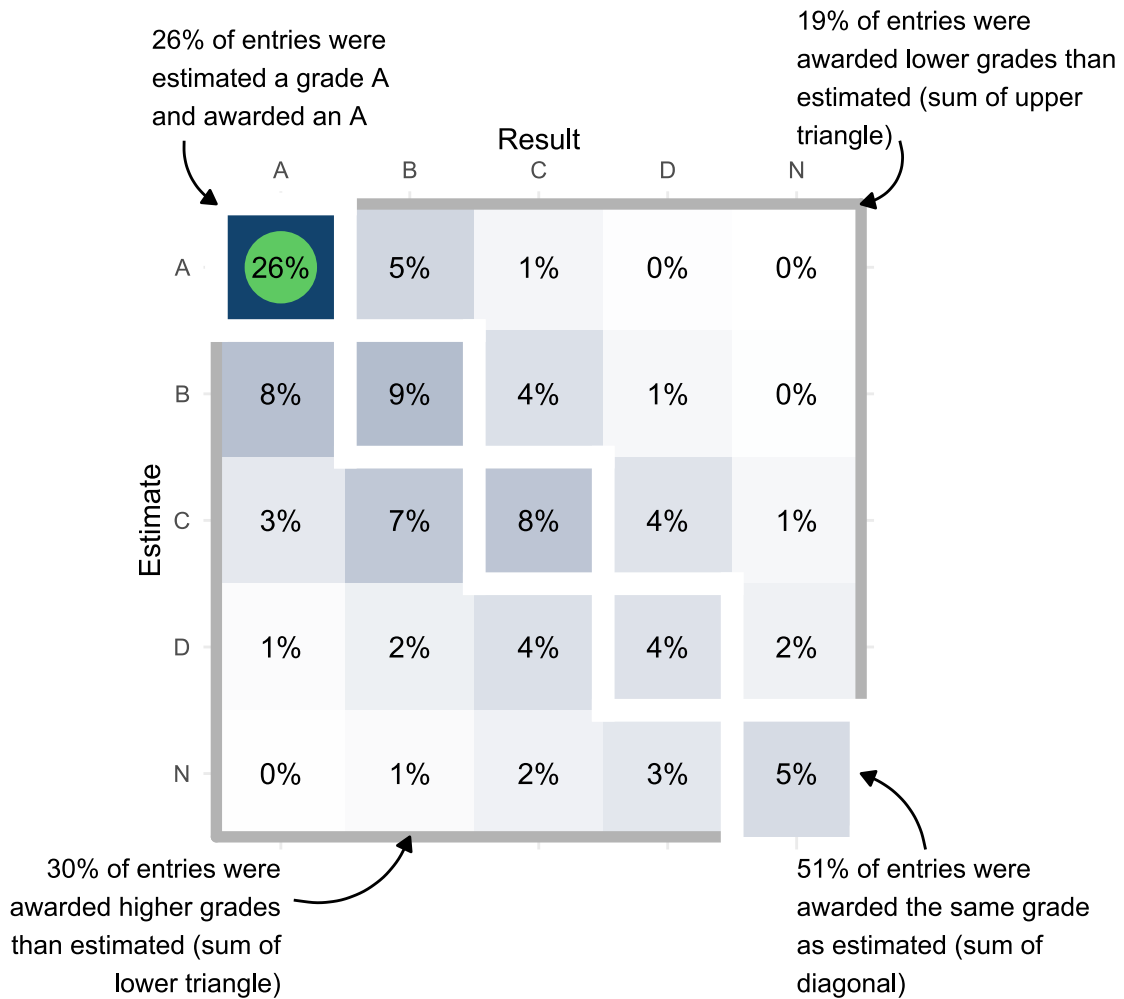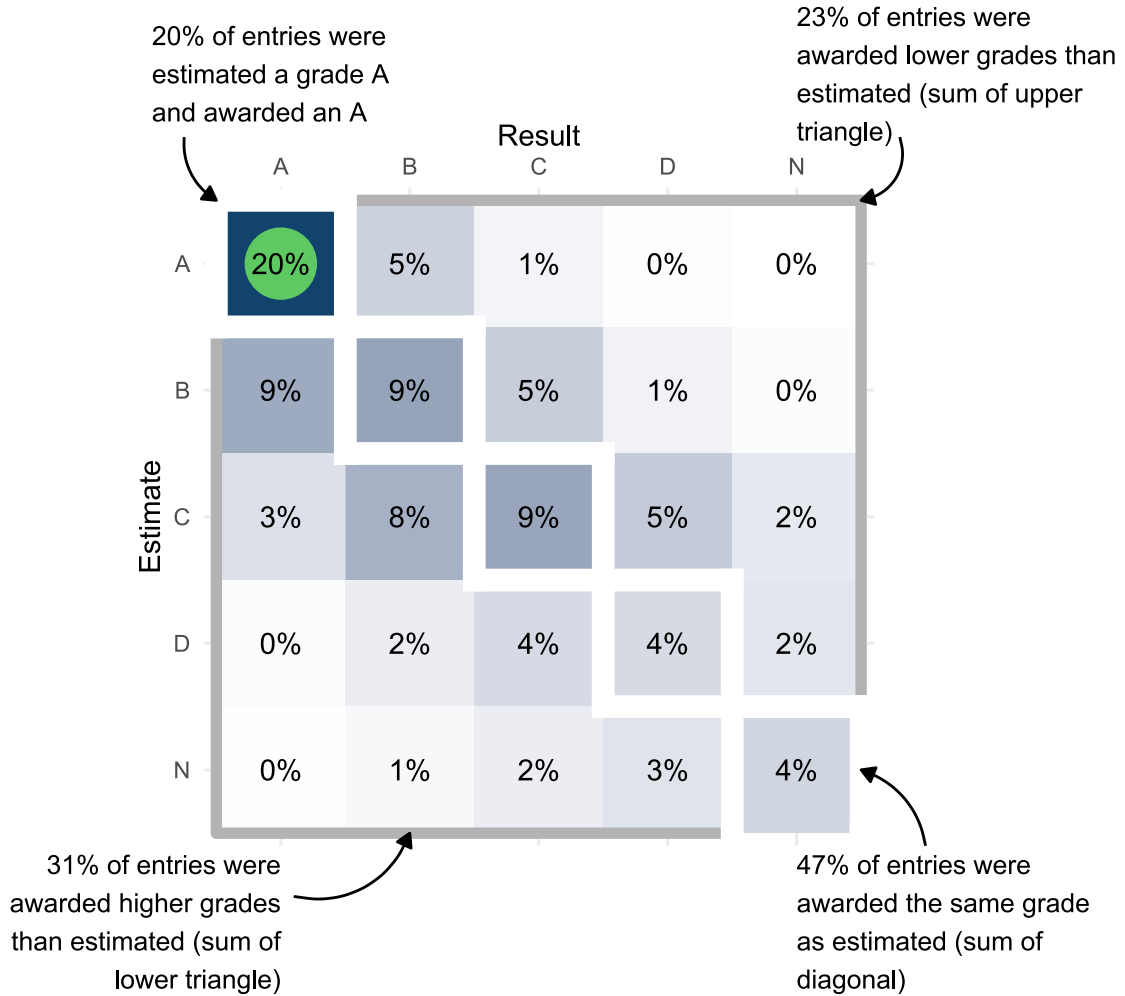
For comparison, in 2019, 47% of entries were awarded the same grade as estimated, whilst 31% were awarded a higher grade and 23% were awarded a lower grade.

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2019: Estimates compared to results

20% of entries were estimated a grade A and awarded an A

23% of entries were awarded lower grades than estimated (sum of upper triangle)

Result

	A	B	C	D	N
A	20%	5%	1%	0%	0%
B	9%	9%	5%	1%	0%
C	3%	8%	9%	5%	2%
D	0%	2%	4%	4%	2%
N	0%	1%	2%	3%	4%

Estimate

31% of entries were awarded higher grades than estimated (sum of lower triangle)

47% of entries were awarded the same grade as estimated (sum of diagonal)

4   By qualification level

4.1   National 5

At National 5, the attainment rate was typically 8 percentage points lower than awarded in the years before the pandemic (compared with an approximately 6 point gap overall). The proportion of entries awarded an A grade remained higher than estimated in 2022, but the gap was down to 6.7 percentage points.

National 5: Estimates typically underestimate grade A attainment

Difference in estimated and awarded grade A rate by year for National 5

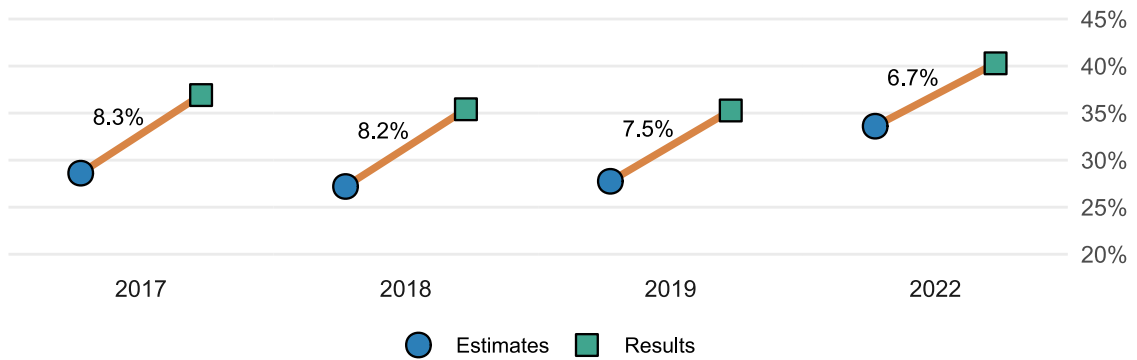| Year	Estimated A rate	Awarded A rate	Difference (percentage points)
2017	28.6%	36.9%	8.3
2018	27.2%	35.4%	8.2
2019	27.8%	35.3%	7.5
2022	33.6%	40.3%	6.7

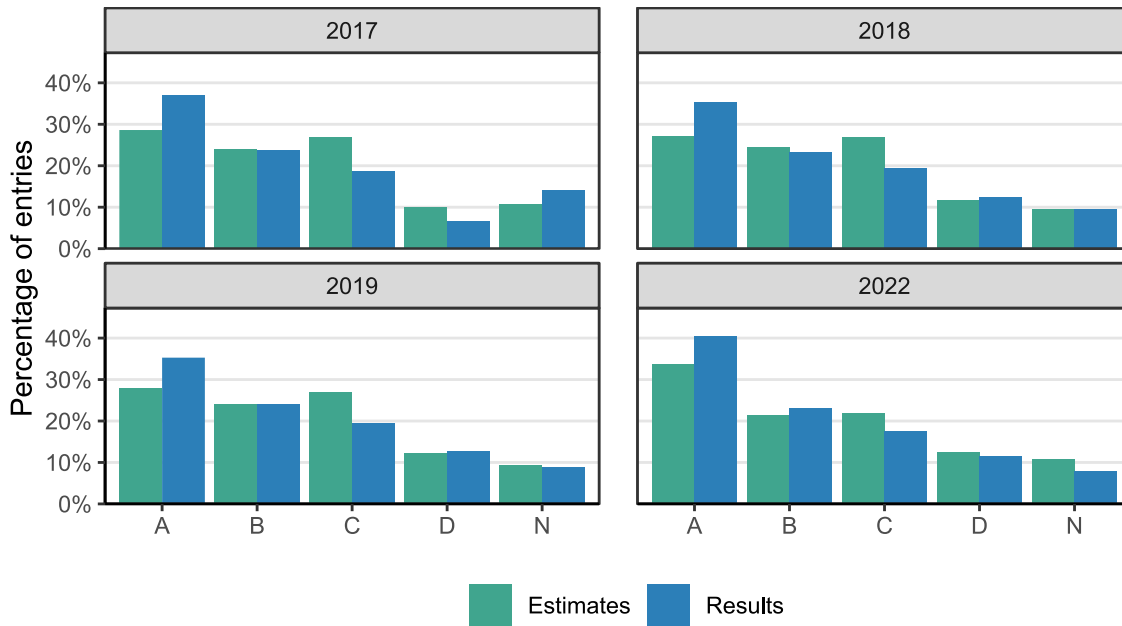## National 5 attainment was higher than teacher estimates in 2022

Table 7. Estimated and awarded grade distributions for 2017 to 2019 and 2022 for National 5

Year	Type of grade	A	B	C	D	No award	A to C
2017	estimate	28.6%	23.9%	26.8%	9.9%	10.7%	79.4%
2017	result	36.9%	23.6%	18.6%	6.7%	14.1%	79.2%
2018	estimate	27.2%	24.4%	27.0%	11.7%	9.6%	78.6%
2018	result	35.4%	23.2%	19.4%	12.4%	9.6%	78.0%
2019	estimate	27.8%	24.0%	26.8%	12.2%	9.2%	78.6%
2019	result	35.3%	24.0%	19.3%	12.6%	8.9%	78.6%
2022	estimate	33.6%	21.3%	21.8%	12.5%	10.8%	76.7%
2022	result	40.3%	23.0%	17.5%	11.4%	7.8%	80.8%

National 5 A to C attainment rates for awarded and estimated grades were within 1 percentage point in the three years before the pandemic. In 2022, results were 4 percentage points higher than estimated.

National 5: Estimated A to C attainment decreased in 2022 but results increased

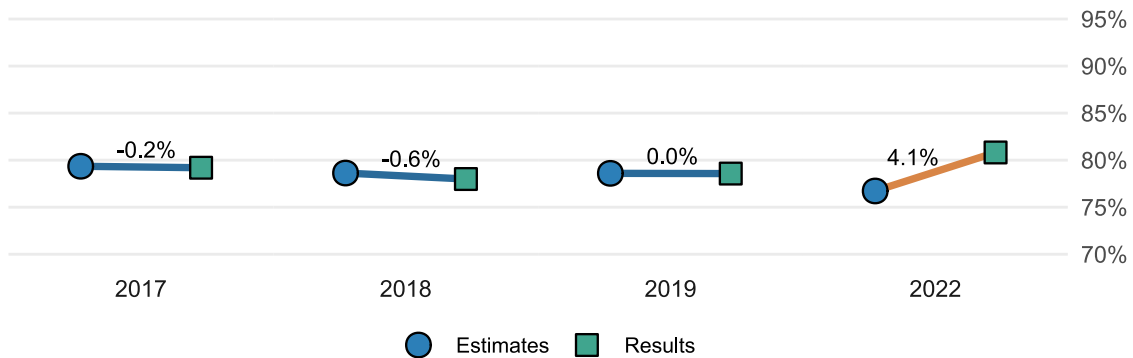Difference in estimated and awarded grades A to C rate by year for National 5

Table 8. Difference between results and estimates in grade A to C attainment for National 5

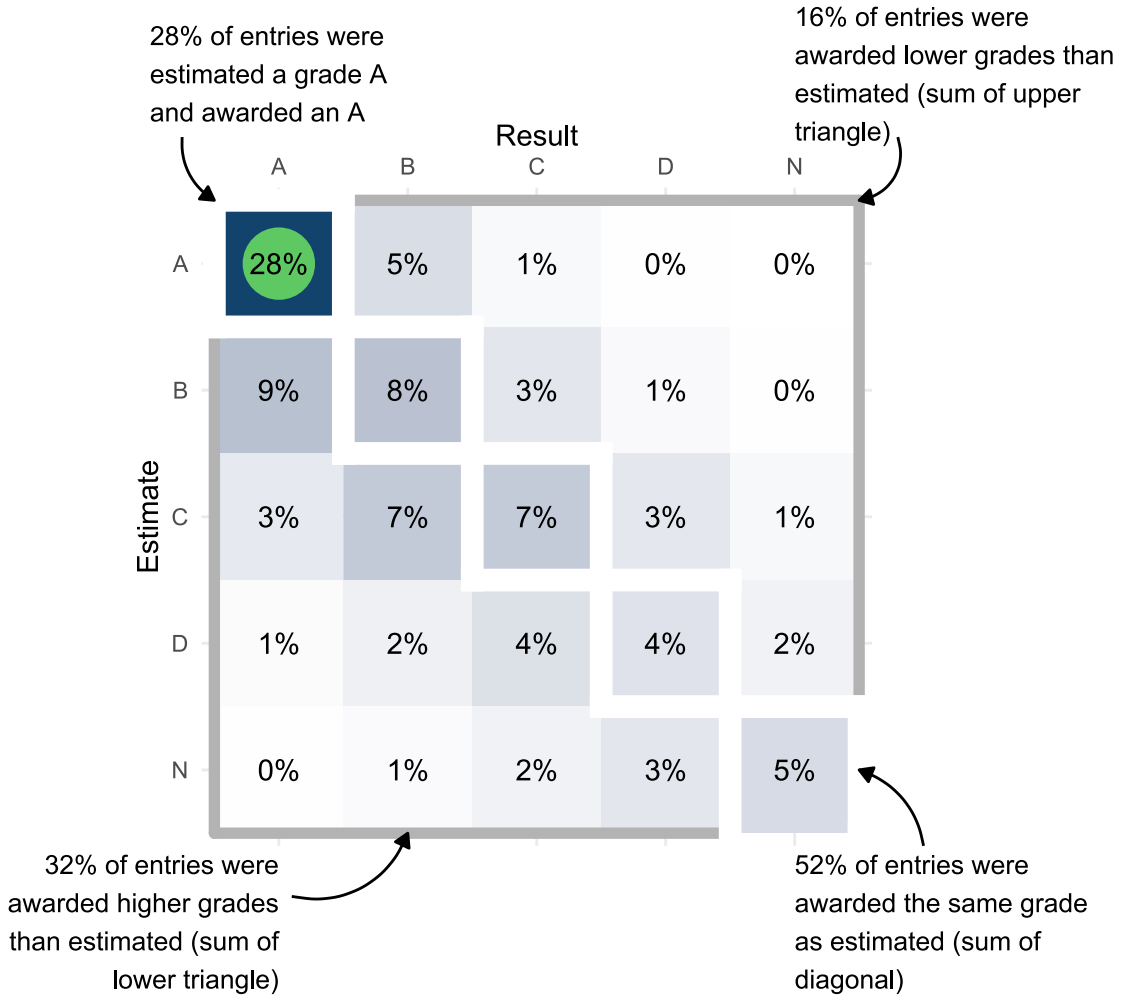| Year	Estimated A to C rate	Awarded A to C rate	Difference (percentage points)
2017	79.4%	79.2%	-0.2
2018	78.6%	78.0%	-0.6
2019	78.6%	78.6%	0.0
2022	76.7%	80.8%	4.1

4.1.1 Is the correspondence between National 5 results and estimates even across the grade range?

Correspondence between results and estimates at National 5 is very similar to the overall situation. In 2022, more than 4 in 5 entries (83%) estimated an A grade were awarded an A. Correspondence between estimates and results is substantially lower for the other estimated grades. At grades B, C and D, results can be higher or lower than estimated. Approximately 4 out of 10 (39%) entries estimated a grade B were awarded a B, 33% of estimated C grades were awarded Cs, 31% of estimated D grades were awarded Ds, and 45% of estimated No awards resulted in No awards.

In total, 52% of National 5 entries were awarded the grade that was estimated in 2022, 32% were awarded a higher grade, and 16% were awarded a lower grade. When estimated grades did not match awarded grades, they most commonly differed by one grade and the awarded grade was more often higher (than estimated) than lower.

National 5 in 2022: Estimates compared to results

28% of entries were estimated a grade A and awarded an A

16% of entries were awarded lower grades than estimated (sum of upper triangle)

Result

	A	B	C	D	N
A	28%	5%	1%	0%	0%
B	9%	8%	3%	1%	0%
C	3%	7%	7%	3%	1%
D	1%	2%	4%	4%	2%
N	0%	1%	2%	3%	5%

Estimate

32% of entries were awarded higher grades than estimated (sum of lower triangle)

52% of entries were awarded the same grade as estimated (sum of diagonal)

For comparison, in 2019, 48% of National 5 entries were awarded the grade that was estimated, 31% were awarded a higher grade, and 20% were awarded a lower grade.

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National 5 in 2019: Estimates compared to results

22% of entries were
estimated a grade A
and awarded an A

20% of entries were
awarded lower grades than
estimated (sum of upper
triangle)

Result

Estimate	A	B	C	D	N
A	22%	4%	1%	0%	0%
B	9%	9%	4%	1%	0%
C	3%	8%	9%	5%	2%
D	0%	2%	4%	4%	2%
N	0%	1%	2%	3%	4%

31% of entries were
awarded higher grades
than estimated (sum of
lower triangle)

48% of entries were
awarded the same grade
as estimated (sum of
diagonal)
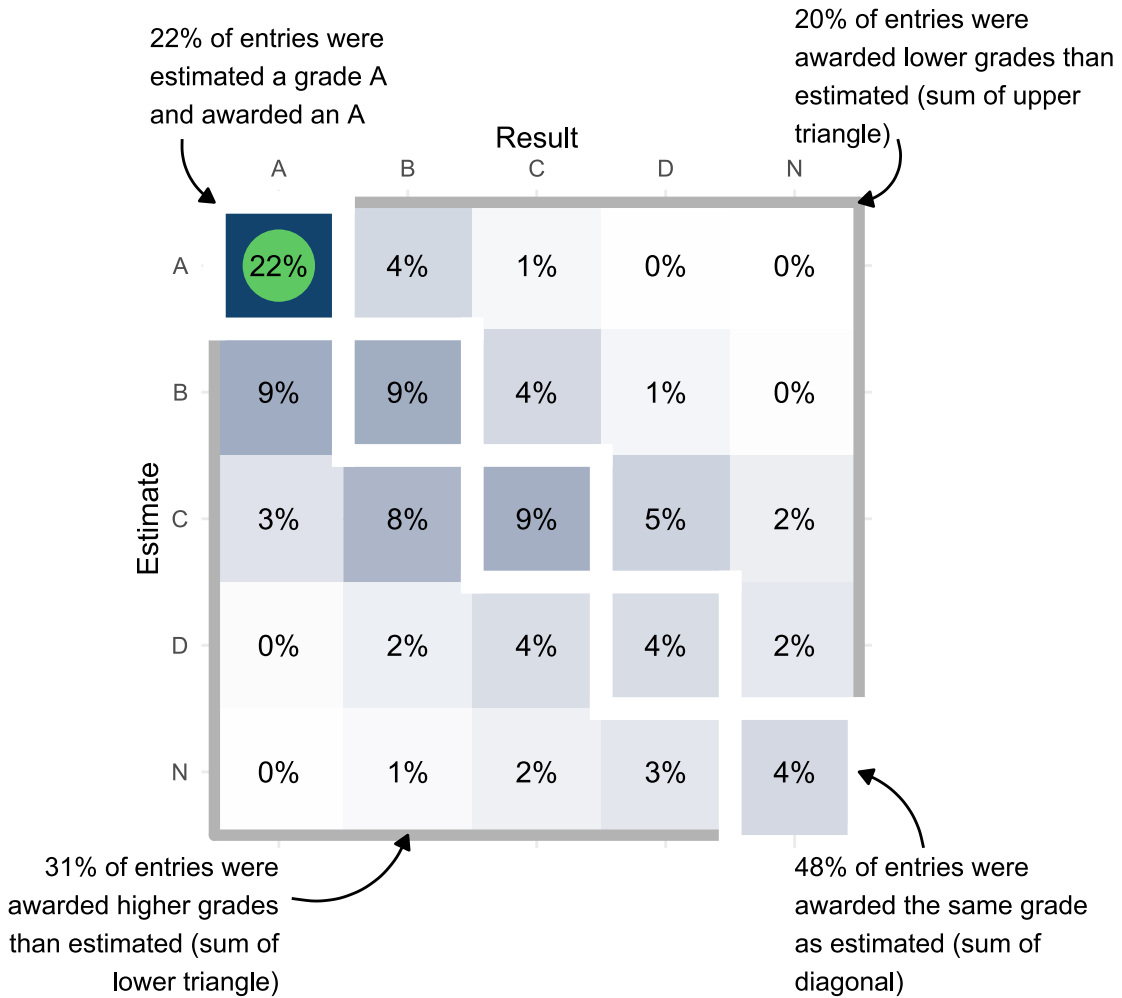
4.2   Higher

For Higher courses, the number of estimates of grade A attainment is typically 4 to 5
percentage points lower than results (a smaller gap than National 5). In 2022 the gap was
smaller at 3 percentage points.

Higher: Estimates typically underestimate grade A attainment

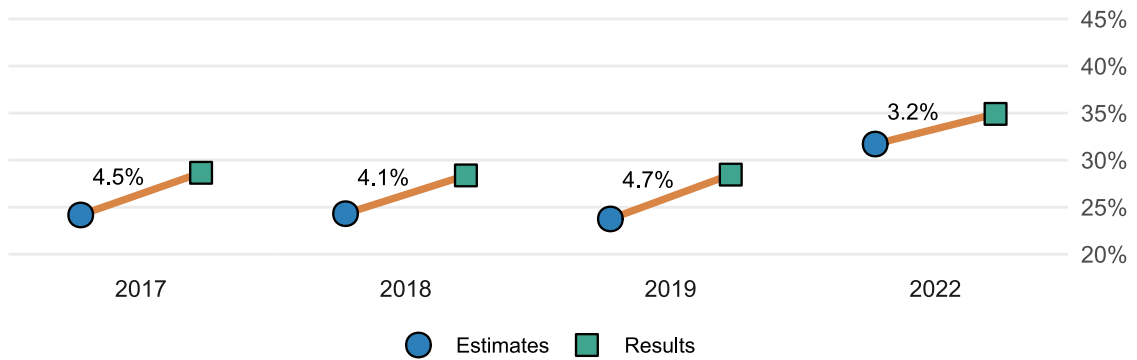Difference in estimated and awarded grade A rate by year for Higher

Table 9. Difference between results and estimates in grade A attainment for Highers

Year	Estimated A rate	Awarded A rate	Difference (percentage points)
2017	24.2%	28.7%	4.5
2018	24.3%	28.4%	4.1
2019	23.8%	28.5%	4.7
2022	31.7%	34.9%	3.2

Higher attainment was higher than teacher estimates in 2022
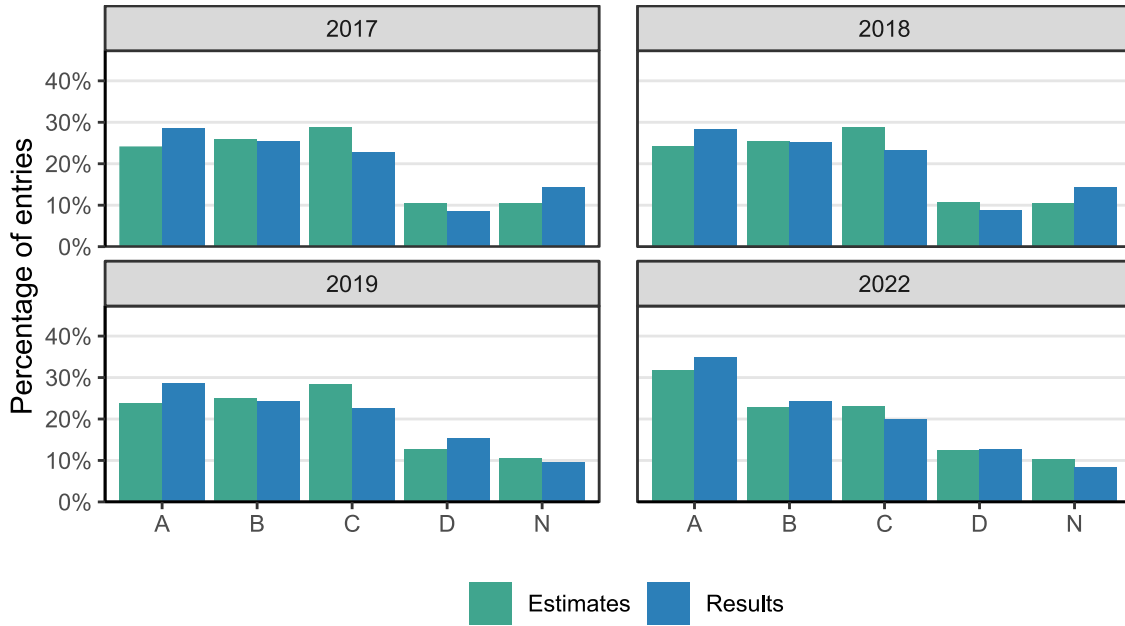
Year	Type of grade	A	B	C	D	No award	A to C
2017	estimate	24.2%	25.9%	28.9%	10.4%	10.6%	79.0%
2017	result	28.7%	25.5%	22.9%	8.6%	14.3%	77.1%
2018	estimate	24.3%	25.4%	28.9%	10.9%	10.5%	78.6%
2018	result	28.4%	25.3%	23.2%	8.9%	14.2%	76.9%
2019	estimate	23.8%	24.9%	28.3%	12.6%	10.4%	77.0%
2019	result	28.5%	24.3%	22.6%	15.3%	9.4%	75.3%
2022	estimate	31.7%	22.8%	23.0%	12.4%	10.2%	77.5%
2022	result	34.9%	24.3%	19.9%	12.7%	8.2%	79.1%

At grades A to C, estimates were approximately 2 percentage points higher than Higher results in the three years before the pandemic. In 2022, the gap is the same size but the direction is reversed — results were approximately 2 percentage points higher than estimates for Highers.

Higher: Estimated A to C attainment was lower than results in 2022

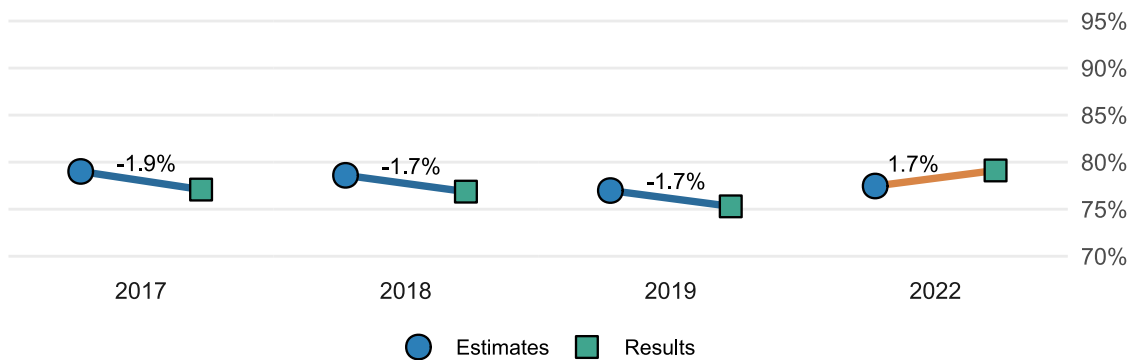Difference in estimated and awarded grades A to C rate by year for Higher

Table 11. Difference between results and estimates in grade A to C attainment for Highers

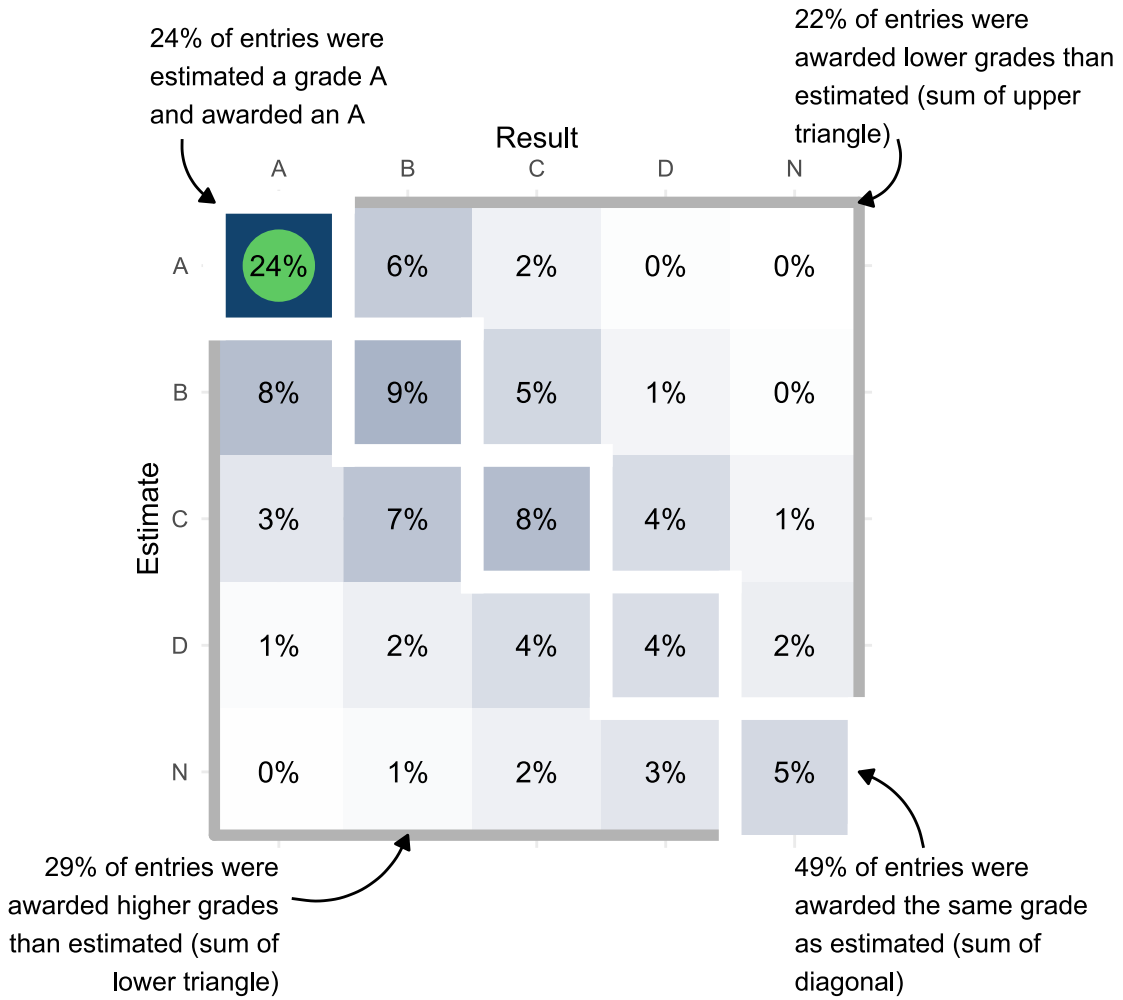| Year	Estimated A to C rate	Awarded A to C rate	Difference (percentage points)
2017	79.0%	77.1%	-1.9
2018	78.6%	76.9%	-1.7
2019	77.0%	75.3%	-1.7
2022	77.5%	79.1%	1.7

4.2.1 Is the correspondence between Higher results and estimates even across the grade range?

In 2022, almost 3 in 4 Higher entries (75%) estimated an A grade were awarded an A, suggesting that it is slightly more difficult to estimate attainment at this more advanced level than National 5 (83%% of National 5 entries estimated an A were awarded an A). Correspondence between Higher estimates and results is substantially lower for the other estimated grades. At grades B, C and D, results can be higher or lower than estimated. Approximately 4 out of 10 (39%) entries estimated a grade B were awarded a B, 34% of estimated C grades were awarded Cs, 32% of estimated D grades were awarded Ds, and 44% of estimated No awards resulted in No awards.

In total, 49% of Higher entries were awarded the grade that was estimated in 2022, whilst 29% were awarded a higher grade and 22% were awarded a lower grade. When estimated grades did not match awarded grades, they most commonly differed by one grade and the awarded grade was more often higher (than estimated) than lower.

Higher in 2022: Estimates compared to results

24% of entries were estimated a grade A and awarded an A

22% of entries were awarded lower grades than estimated (sum of upper triangle)

29% of entries were awarded higher grades than estimated (sum of lower triangle)

49% of entries were awarded the same grade as estimated (sum of diagonal)
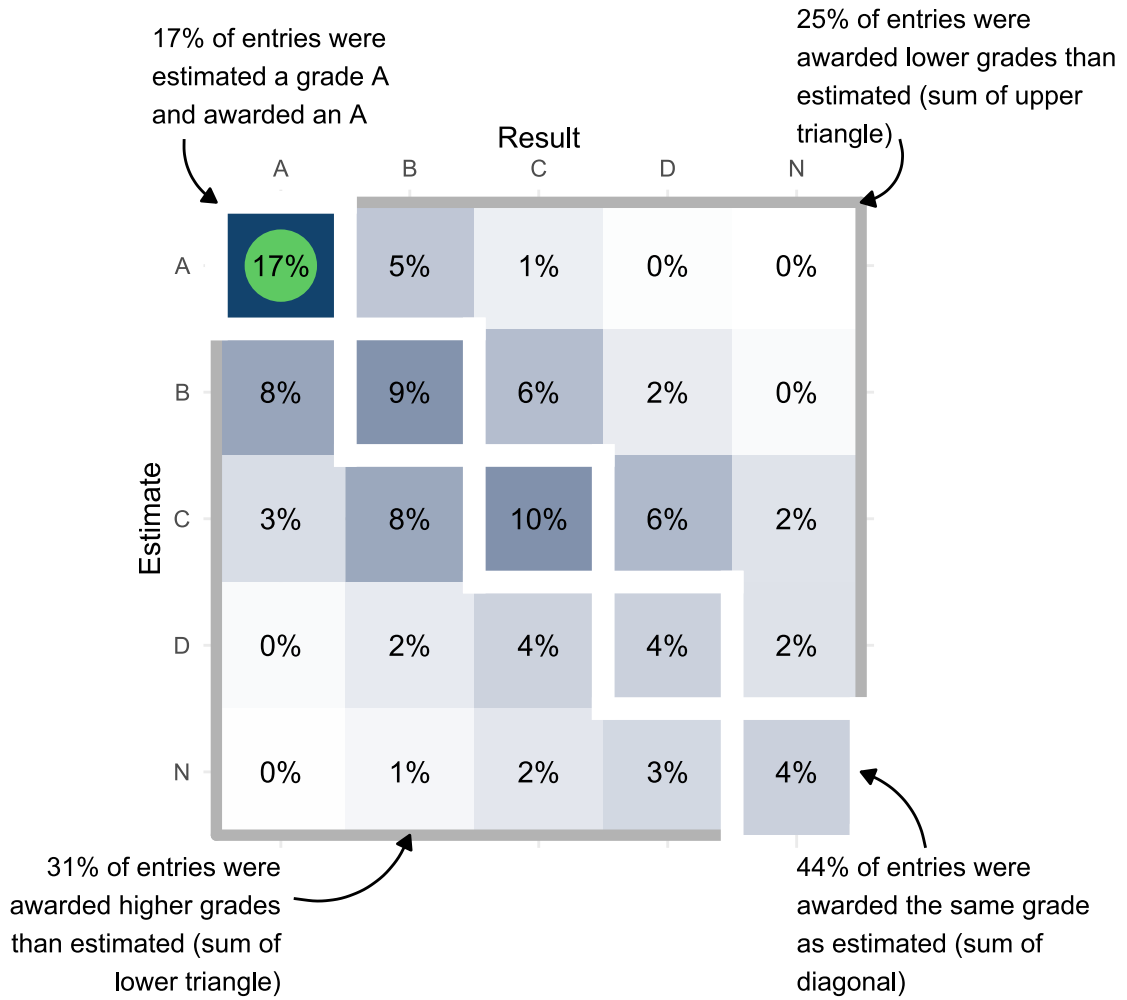
For comparison, in 2019, 44% of Higher entries were awarded the same grade as estimated, whilst 31% were awarded a higher grade and 25% were awarded a lower grade.

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Higher in 2019: Estimates compared to results

4.3 Advanced Higher

For Advanced Higher courses, estimates of the grade A attainment rate were approximately 5 or 6 percentage points lower than results. However, in 2022, more A grades were estimated than awarded (a 1.4 percentage point gap).

Figure 16. Difference in estimated and awarded grade A rate by year for Advanced Higher.

Advanced Higher: Estimates typically underestimate grade A attainment but reverse is true in 2022

Difference in estimated and awarded grade A rate by year for Advanced Higher
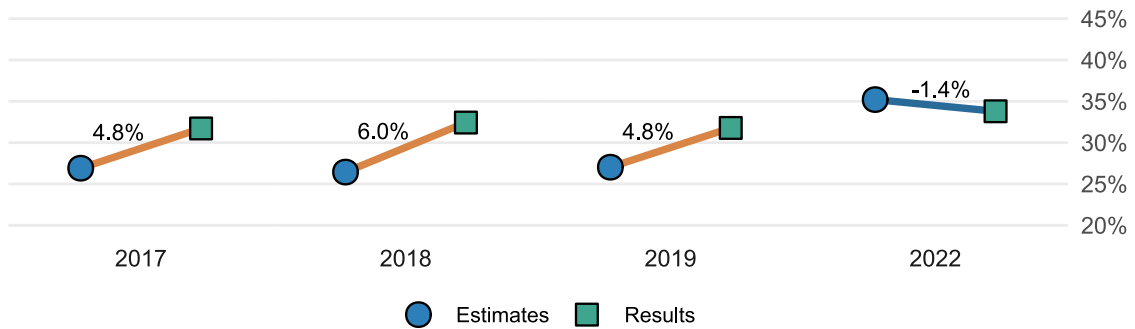

Table 12. Difference between results and estimates in grade A attainment for Advanced Highers

Year	Estimated A rate	Awarded A rate	Difference (percentage points)
2017	26.9%	31.7%	4.8
2018	26.4%	32.4%	6.0
2019	27.0%	31.8%	4.8
2022	35.2%	33.8%	-1.4

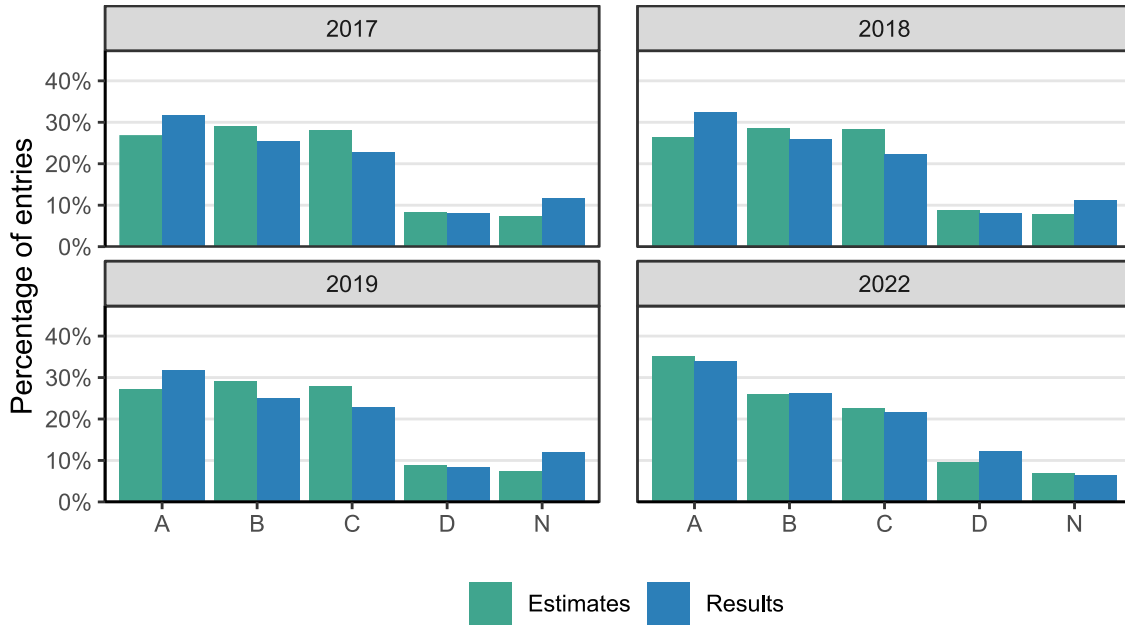**Advanced Higher attainment was similar to estimates in 2022**

Table 13. Estimated and awarded grade distributions for 2017 to 2019 and 2022 for Advanced Highers

Year	Type of grade	A	B	C	D	No award	A to C
2017	estimate	26.9%	29.1%	28.2%	8.4%	7.4%	84.3%
2017	result	31.7%	25.5%	22.9%	8.2%	11.7%	80.1%
2018	estimate	26.4%	28.6%	28.3%	8.9%	7.8%	83.4%
2018	result	32.4%	25.9%	22.4%	8.1%	11.2%	80.7%
2019	estimate	27.0%	29.1%	27.9%	8.7%	7.3%	84.0%
2019	result	31.8%	25.0%	22.8%	8.4%	11.9%	79.6%
2022	estimate	35.2%	25.9%	22.6%	9.5%	6.8%	83.7%
2022	result	33.8%	26.1%	21.6%	12.2%	6.3%	81.5%

Estimated A to C attainment at Advanced Higher was higher than results in the three years preceding the pandemic as well as 2022, but the gap between estimates and results was smaller in 2022 (2.1 percentage points in 2022 compared to 2.6 to 4.4 percentage points between 2017 and 2019).

Advanced Higher: the gap between estimated and awarded A to C attainment closed in 2022

Difference in estimated and awarded grades A to C rate by year for Advanced Higher
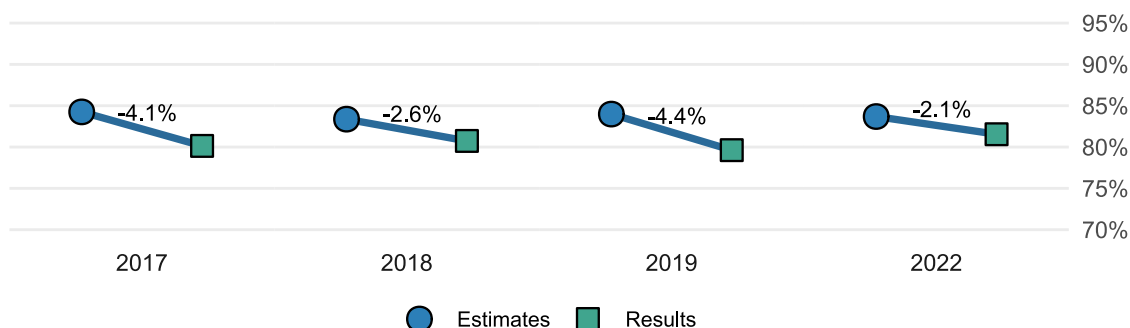

Table 14. Difference between results and estimates in grade A to C attainment for Advanced Highers

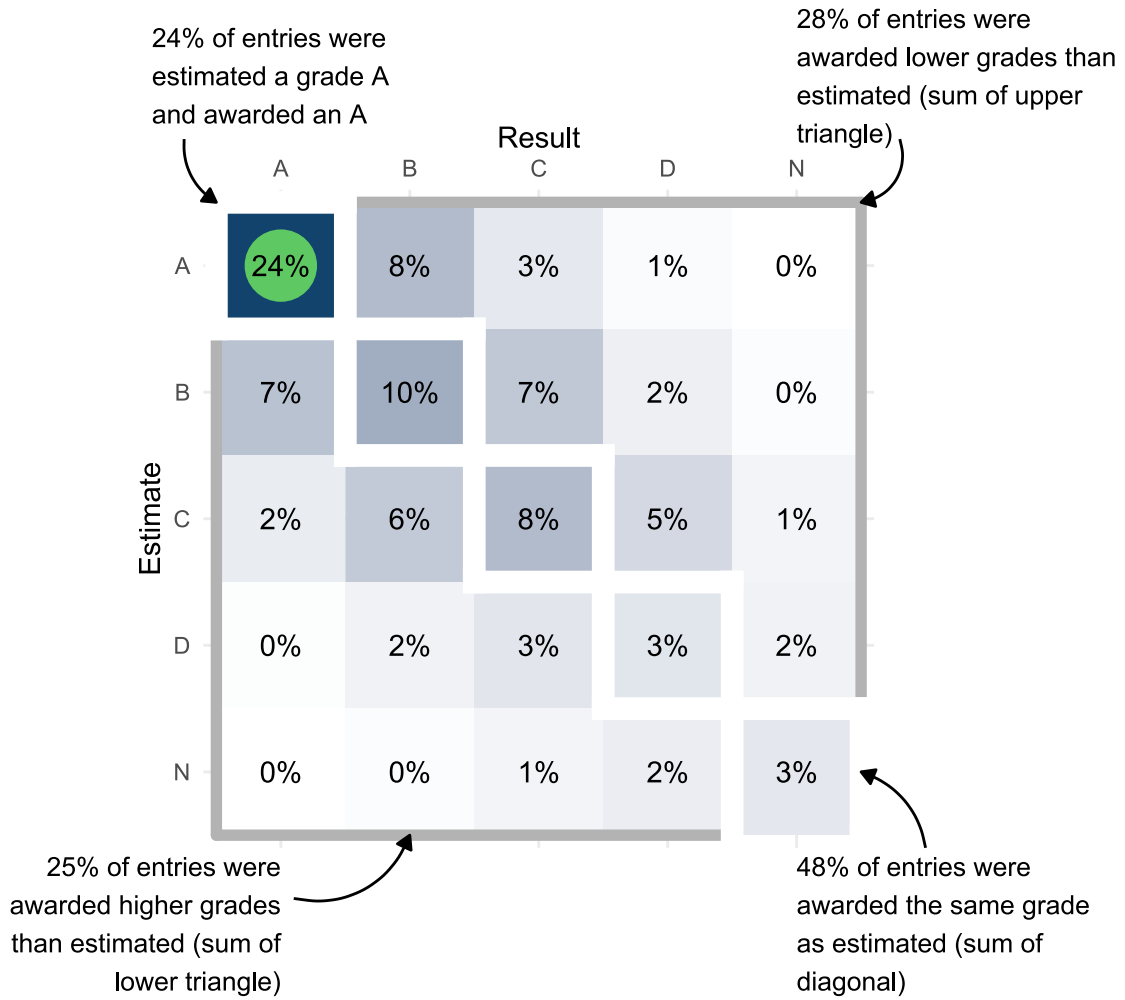| Year	Estimated A to C rate	Awarded A to C rate	Difference (percentage points)
2017	84.3%	80.1%	-4.1
2018	83.4%	80.7%	-2.6
2019	84.0%	79.6%	-4.4
2022	83.7%	81.5%	-2.1

4.3.1 Is the correspondence between Advanced Higher results and estimates even across the grade range?

Estimating attainment at Advanced Higher appears more difficult than for less advanced courses. In 2022, approximately 2 out of 3 entries (68%) that were estimated at grade A were awarded an A (compared with 83% at National 5). Correspondence between Advanced Higher estimates and results is substantially lower for the other estimated grades. At grades B, C and D, results can be higher or lower than estimated. Approximately 4 out of 10 (38%) entries estimated a grade B were awarded a B, 36% of estimated C grades were awarded Cs, 32% of estimated D grades were awarded Ds, and 41% of estimated No awards resulted in No awards.

In total, 48% of Advanced Higher entries were awarded the grade that was estimated in 2022. 25% were awarded a higher grade and 28% were awarded a lower grade. Advanced Higher entries that were estimated a grade B but awarded a different grade were more likely to have received a lower grade than estimated than a higher grade, which contrasts with grades C and D and with the pattern at other qualification levels.

Advanced Higher in 2022: Estimates compared to results

24% of entries were estimated a grade A and awarded an A

28% of entries were awarded lower grades than estimated (sum of upper triangle)

Result

	A	B	C	D	N
A	24%	8%	3%	1%	0%
B	7%	10%	7%	2%	0%
C	2%	6%	8%	5%	1%
D	0%	2%	3%	3%	2%
N	0%	0%	1%	2%	3%

Estimate

25% of entries were awarded higher grades than estimated (sum of lower triangle)

48% of entries were awarded the same grade as estimated (sum of diagonal)

For comparison, in 2019, 43% of Advanced Higher entries were awarded the same grade as estimated, whilst 28% were awarded a higher grade and 29% were awarded a lower grade.

Advanced Higher in 2019: Estimates compared to results

19% of entries were estimated a grade A and awarded an A

29% of entries were awarded lower grades than estimated (sum of upper triangle)

Result

	A	B	C	D	N
A	19%	6%	2%	0%	0%
B	9%	10%	7%	2%	1%
C	3%	7%	9%	4%	4%
D	0%	1%	3%	2%	3%
N	0%	1%	2%	1%	3%

Estimate

28% of entries were awarded higher grades than estimated (sum of lower triangle)

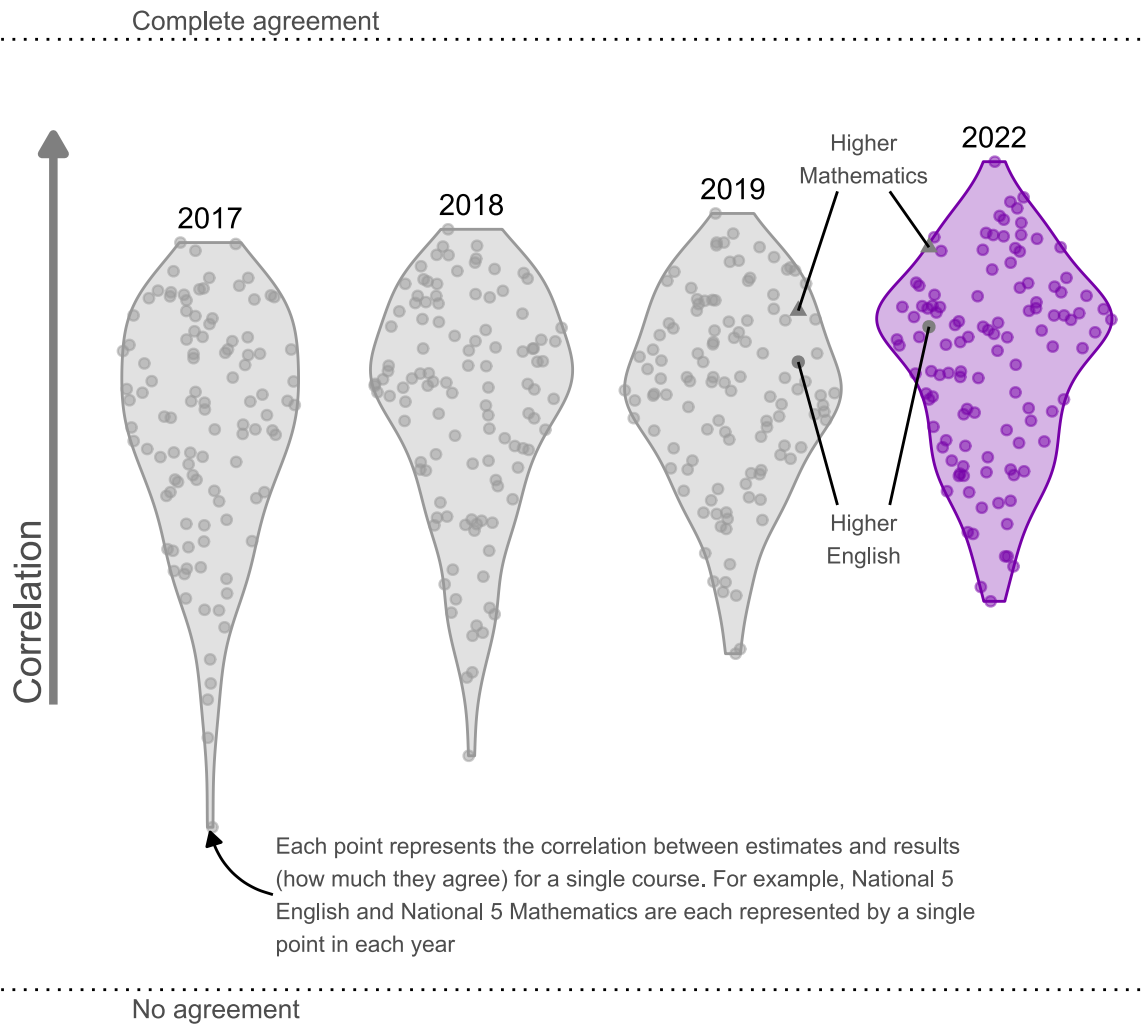43% of entries were awarded the same grade as estimated (sum of diagonal)
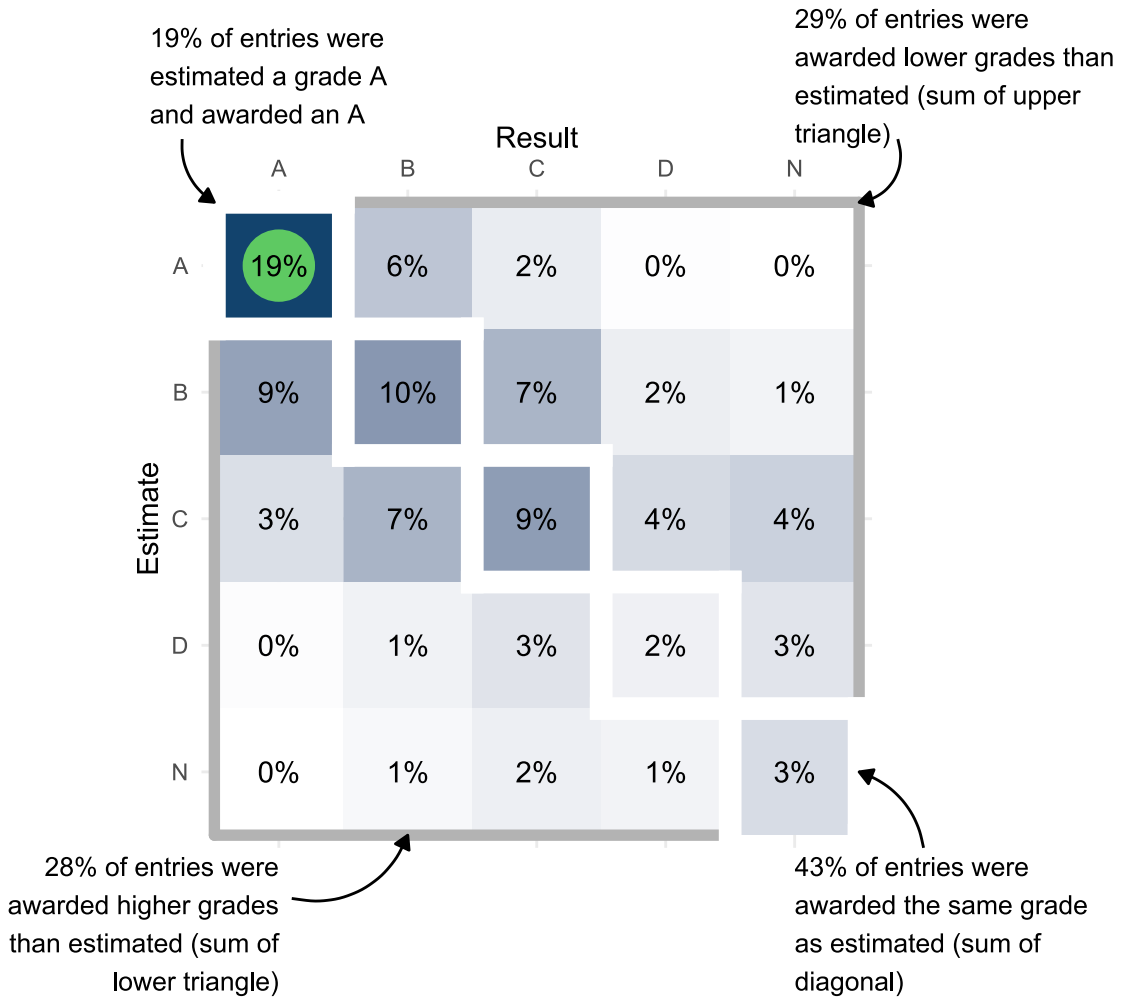
5   Correlation between estimates and results at subject level

At subject level, a range of factors are expected to impact the correspondence between estimates and results. It is possible to collapse the correspondence between all the individual estimates and results for an individual course to a single metric — the correlation. The correlation value must be a value between 0 and 1, and the heatmaps above (for example, Figure 4) give an indication of how the values are calculated. In those charts, the diagonal shows the percentages (for each grade) of entries where the awarded grade matched the estimate. If all estimates matched awarded grades, the percentages on the diagonal would sum to 100% and the correlation between estimates and results would equal 1 ('complete agreement'). On the other hand, if we generated random pairs of estimates and results — for instance by taking two sets of balls marked with the grades A to D plus No award, and drawing them at random from a hat (replacing the balls in the hat after each draw) — estimates would not match results in most cases and the correlation would be 0 ('no agreement').

Figure 21 shows the correlation between estimates and results for all National 5, Higher and Advanced Higher courses with an entry size of at least 100. Small entry subjects are removed — differences between years become more about the individual candidates taking the course rather than about the process of estimating attainment. The correlation for each course is represented by a point and the shaded 'violin' around the points shows the density of the points for each correlation value: wherever the violin thickens, more courses share similar correlation values.

The distribution of correlation values is shifted upwards in 2022, indicating better alignment between estimates and results than was seen in the years preceding the pandemic. This is likely be explained in part by the different awarding arrangements in place in 2022, but it also suggests that work the SQA has done with teachers to communicate and explain 'Understanding Standards' has had an impact on estimates. The analysis shows that future support provided to centres could usefully focus on intermediate and lower grades, since these are less easy to estimate.

Figure 21. Variation in the correspondence between estimates and results (the correlation) between 2017 and 2019 and in 2022.

Complete agreement

Correlation

2017

2018

2019

Higher
Mathematics

2022

Higher
English

Each point represents the correlation between estimates and results
(how much they agree) for a single course. For example, National 5
English and National 5 Mathematics are each represented by a single
point in each year

No agreement

6   Methods

Teachers submit estimates of 'bands' rather than grades (Table 1). Operationally, the actual bands relate to the overall mark via a notional percentage range. For example, a band '1' corresponds to a notional percentage range of 85 – 100. The full breakdown of bands with the notional percentage range is documented in Guidance on Producing Estimates, (2021) and shown in table 1.

Estimates were considered to be those values ranging from 1 to 9. Although an estimate of '0' is possible, in practice this value is used when centres are unable or unwilling to enter an estimate. An estimate of '0' was therefore considered as equivalent to a blank estimate in all subsequent analyses, and excluded. These bands were then converted to their equivalent grades for example, a band 1 or 2 is a grade A.

Approximately 99% of entries for 2017 to 2022 had a valid estimate and were included in analyses. Qualifications for which estimates ought not to be provided or were not provided were removed from the analyses. Practical Metalworking, Practical Woodworking and Practical Electronics were internally marked in 2022 so no estimate was made.

The analysis of overall outcomes (National 5, Higher and Advanced Higher combined) is weighted by the number of entries. This means that National 5 (56% to 58% of all entries analysed) has more influence on statistics than Higher (36% to 39% of all entries analysed) or Advanced Higher (5% of all entries analysed).

Heatmaps use percentages rounded to the nearest whole number. The percentages may not always sum to 100% due to rounding.

The correlation between estimates and results was computed by subject and level (using Pearson's method). Correlation is a statistical measure of the relationship between two variables. Correlation values range from -1 to 1, with a score of 0 indicating no relationship and 1 meaning an extremely strong and positive relationship (ie when one variable increases, the other variable also increases).

7   References

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