



Analysis of Progress & Attainment 8

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Overview

In the 2015 version of Achievement Analysis first published in August 2015 there are four tables given over to vulnerable group analysis of Progress and Attainment 8.

- Breakdown of Progress 8 by all vulnerable groups
- Breakdown of Attainment 8 by all vulnerable groups
- Breakdown of how Progress 8 might improve if all unfilled slots were filled
- Breakdown of how Progress 8 might improve if all under-performing grades rose to expected grade

There is a walkthrough on each of these tables in this document.

National Problems with Attainment & Progress 8

Progress and Attainment 8 will undergo many changes in the next few years, therefore predictions of its likely value are risky, however, as the key new accountability measure, school leaders have no choice but to attempt it.

Some of the future issues include:

- **Expected Attainment 8 won't be known until after results:** Progress 8 is based on national average Attainment 8 which will not be known until after results are published for each cohort in 2015, 2016 2017,2018 and possibly beyond.
- **Expected Attainment 8 will nevertheless rise because of curriculum change:** schools will rapidly adjust their curriculum by increasing the number of Ebacc subjects as an easy way to improve Attainment 8, so the national averages will rise (as they have been doing)
- **New spec point scores are higher than legacy point scores:** new English & Maths GCSEs introduced for 2017 exams have different points scores than legacy GCSEs which will affect the national average Attainment 8 scores in 4 of the 10 subject slots.
- **Legacy point scores change as well from the 2017 tables:** from 2017, a different scale of points will be used for legacy GCSEs as well, affecting the national average Attainment 8 scores for each KS2 fine level, and the relative significance of moving from G to F as opposed to B to A.
- **The baseline of fine KS2 levels will disappear:** from 2022, there will no longer be fine KS2 levels as KS2 tests will take a different format. From this year on, all the baselines will shift to the new scores (whatever they may be).

For now, JTB Education will use the 2014 Attainment 8 national averages for each fine KS2 level published at <https://www.gov.uk/government/publications/progress-8-school-performance-measure>

We will also use the 2014-2016 GCSE points scores, even for the 2017 & 2018 cohorts until a new Attainment 8 national guidance document shows how each fine KS2 level performs on the new points system.

For a cohort like the 2017 one, when there is no definitive national lookup from fine KS2 to Attainment 8 but it does have new 2017 style GCSEs, we will use the new points with the old lookups. It is hard to predict the actual effect this will have as it may raise or lower both Attainment 8 and expected Attainment 8. We can see no better solution.

Table of Progress 8 scores

This shows you how your Progress 8 has worked across vulnerable groups.

In this example, the overall Progress 8 score is estimated at 0.32 with a 95% confidence interval of 0.16 to 0.48. Because this does not include zero, this is “statistically significant” and is marked up in yellow. Statistically significant just means this is unlikely to have happened by chance if your actual performance was in line with national expectations. It isn't the same as educationally important.

Then, the Progress 8 score for each vulnerable group is calculated. For example, the score for the two students with an Education Health Care plan is -1.01. This is coloured red to indicate it is below the government's floor standard of -0.5 (although strictly speaking, the floor standard applies to the school as a whole). Any groups with a progress 8 or +0.5 or higher would be shaded green to represent a strong performance. The government's Ofsted exemption level of +1.0 or higher is so rare for schools overall as to be not worth indicating.

For each group, the total number of students is shown first in the “Students” column. Then, the students with a matched KS2 fine level is shown. For example there were 179 students in total in the year group, and it is possible to calculate an Attainment 8 score for all of these. However, only 169 had a fine KS2 level available (from either test or TA), and these are the ones contributing to the Progress 8 calculation.

Progress 8 Group	Total cohort	With KS2 score		
	Students	Students	P8 score	95% Conf. Interval
All students	179	169	0.32	0.16 to 0.48
Boys	93	90	0.31	0.09 to 0.53
Girls	86	79	0.32	0.09 to 0.56
FSM	13	12	0.23	-0.44 to 0.90
Not FSM	166	157	0.32	0.16 to 0.49
Ethnicity WBRI	154	148	0.26	0.08 to 0.43
Not WBRI	25	21	0.74	0.26 to 1.22
No SEN	152	143	0.37	0.20 to 0.55
School Action	0	0	-	-
SA+ & Statement	0	0	-	-
Provision in Place	25	24	0.08	-0.36 to 0.53
EHC	2	2	-1.01	-4.24 to 2.21
English Add Lang	8	4	1.10	-0.37 to 2.58
Not EAL	171	165	0.30	0.13 to 0.46
Lower KS2 Score	50	50	0.38	0.08 to 0.68
Middle KS2 Score	61	61	0.39	0.12 to 0.66
Upper KS2 Score	58	58	0.19	-0.09 to 0.47
Looked after	3	2	0.52	-2.71 to 3.74
Not Looked After	176	167	0.31	0.15 to 0.48
Pupil Premium	33	30	0.16	-0.24 to 0.55
Not Pupil Premium	146	139	0.35	0.17 to 0.53

Legend

Below -0.5 (floor standard)	Between -0.5 and +0.5	Above +0.5	Statistically significant
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Table of Attainment 8 scores

This shows you how your Attainment 8 has worked across vulnerable groups.

In this example, the overall Attainment 8 score is estimated at 53.1 for the 179 students in the year group. The corresponding GCSE grade for this score is a “C+”

Of the 179, 169 have a matching fine KS2 level available and so may have an expected Attainment 8 score calculated. Of these 169, their actual Attainment 8 was 53.2 (slightly higher than the full 179 students), again a “C+” grade and their expected Attainment 8 was 50.0 (a “C” GCSE grade). For details of how fine KS2 levels lead to expected Attainment 8, see the Annex of “[Progress 8 school performance measure in 2016 and 2017](#)” from the DfE’s website.

As for Progress 8, it is possible to calculate a 95% confidence interval for the actual Attainment 8 which in this case is 51.6 to 54.8. Because it does not contain the expected Attainment 8 (50.0), the actual result is statistically significant and the confidence interval is shaded yellow. Statistically significant just means this is unlikely to have happened by chance if your actual performance was in line with national expectations. It isn't the same as educationally important.

Then, the Attainment 8 score for each vulnerable group is calculated. For example, the score for the 25 students who were not ethnically “WBRI / White British” was 56.6. Twenty-one of them had a fine KS2 level and they were expected to score 51.1 against the 58.5 they did score working typically at a GCSE grade “B” against an expected grade “C”.

Any group with a score shaded red scored 5 or more Attainment points below expected which is similar to the government's -0.5 floor standard for Progress 8. Any group with a score shaded green scored 5 or more Attainment points above expected – not a rr which is similar to the government's -0.5 floor standard for Progress 8

For each group, the total number of students is shown first in the second column labelled “Students”. Then, comes the Attainment 8 score and equivalent GCSE grade. After that the columns refer to the students with a matched KS2 fine level is shown. For example there were 179 students in total in the year group, and it is possible to calculate an Attainment 8 score for all of these. However, only 169 had a fine KS2 level available (from either test or TA), and these are the ones whose Attainment 8 scores we can compare to an expected Attainment 8 score.

Attainment 8	Total cohort			With KS2 score					95% CI
	Students	A8 score	A8 grade	Students	A8 score	A8 grade	Expected	Exp. grade	
All students	179	53.1	C+	169	53.2	C+	50.0	C	51.6 to 54.8
Boys	93	50.9	C	90	50.9	C	47.8	C-	48.7 to 53.2
Girls	86	55.3	B-	79	55.8	B-	52.5	C+	53.4 to 58.1
FSM	13	46.8	C-	12	46.5	C-	44.2	D+	39.8 to 53.2
Not FSM	166	53.6	C+	157	53.7	C+	50.5	C	52.0 to 55.4
Ethnicity WBRI	154	52.5	C+	148	52.4	C+	49.9	C	50.7 to 54.2
Not WBRI	25	56.6	B-	21	58.5	B	51.1	C	53.7 to 63.3
No SEN	152	55.5	B-	143	55.8	B-	52.0	C+	54.0 to 57.5
School Action	0	-	-	0	-	-	-	-	-
SA+ & Statement	0	-	-	0	-	-	-	-	-
Provision in Place	25	41.3	D	24	41.0	D	40.2	D	36.6 to 45.5
EHC	2	13.0	G+	2	13.0	G+	23.1	F+	-19.2 to 45.2
English Add Lang	8	48.8	C	4	54.0	C+	43.0	D+	39.3 to 68.7
Not EAL	171	53.3	C+	165	53.2	C+	50.2	C	51.5 to 54.8
Lower KS2 Score	50	38.8	D	50	38.8	D	35.0	E+	35.8 to 41.8
Middle KS2 Score	61	53.4	C+	61	53.4	C+	49.6	C	50.7 to 56.1
Upper KS2 Score	58	65.4	A-	58	65.4	A-	63.5	B+	62.6 to 68.1
Looked after	3	38.0	D-	2	37.5	D-	32.3	E+	5.3 to 69.7
Not Looked After	176	53.3	C+	167	53.4	C+	50.2	C	51.8 to 55.0
Pupil Premium	33	46.7	C-	30	46.7	C-	45.1	C-	42.7 to 50.7
Not Pupil Premium	146	54.5	C+	139	54.6	C+	51.1	C	52.8 to 56.4

Legend			
5 or more below expected Attainment 8	Within 5 of expected Attainment 8	5 or more above expected Attainment 8	Statistically significant

Progress 8 Analysis – unfilled slots

This analysis seeks to answer the question “What if my students had filled all their Progress 8 slots?”.

In the first four columns, total cohort, those with matched KS2 scores and the Progress 8 score is shown. Then the next five show how many subject slots of the ten in Progress 8 are filled. For the whole cohort, the average number of slots filled was 1.99 for English, 2.00 for Maths, 2.66 for the EBacc bucket, 2.92 for the Other bucket making a total of 9.57 filled slots.

Now, assuming each student with a missing subject in a bucket managed to fill it, and on average, gained the same grade as in the rest of that bucket, they would improve their overall Attainment 8 score and hence their Progress 8 score. The effect on Progress 8 is shown in the final five columns.

For the whole cohort, the English and Maths slots are full, or virtually full, so there is nothing to be gained by filling the last one or two slots overall. But for the EBacc bucket with only 2.66 of its 3 slots filled on average, filling the last 0.34 raises the Progress 8 by 0.12. Similarly, filling the 0.08 unfilled slots in the Other bucket would raise the Progress 8 by 0.04.

The total uplift to Progress 8 of filling all buckets at the same average grade is 0.15.

If Progress 8 would rise by .2 or more by filling a bucket or filling all buckets, that value is shaded green. Should filling a bucket or all buckets raise Progress 8 by more than 0.1 but less than 0.2 it is shaded yellow. Look for the green items to see where unfilled slots have had most impact on your Progress 8.

Each line repeats the same procedure for each vulnerable groups.

Note: if a student has no slots filled in a particular bucket, their performance across all their Attainment 8 subjects is used to estimate their score should they fill that bucket.

Progress 8 Group	Cohort			Slots filled					Possible P8 gains				
	Cohort	KS2 match	P8 score	English (2)	Maths (2)	EBacc (3)	Other (3)	All (10)	English (2)	Maths (2)	EBacc (3)	Other (3)	All (10)
All students	179	169	0.32	1.99	2.00	2.66	2.92	9.57	-	-	0.12	0.04	0.15
Boys	93	90	0.31	2.00	2.00	2.54	2.86	9.40	-	-	0.17	0.07	0.24
Girls	86	79	0.32	1.97	2.00	2.80	2.99	9.76	-	-	0.06	-	0.06
FSM	13	12	0.23	2.00	2.00	2.50	2.92	9.42	-	-	0.17	0.04	0.21
Not FSM	166	157	0.32	1.99	2.00	2.68	2.92	9.58	-	-	0.12	0.04	0.15
Ethnicity WBRI	154	148	0.26	1.99	2.00	2.61	2.91	9.51	-	-	0.14	0.04	0.18
Not WBRI	25	21	0.74	2.00	2.00	3.00	3.00	10.00	-	-	-	-	-
No SEN	152	143	0.37	2.00	2.00	2.83	2.94	9.77	-	-	0.06	0.03	0.10
School Action	0	0	-	-	-	-	-	-	-	-	-	-	-
SA+ & Statement	0	0	-	-	-	-	-	-	-	-	-	-	-
Provision in Place	25	24	0.08	2.00	2.00	1.88	2.83	8.71	-	-	0.41	0.07	0.48
EHC	2	2	-1.01	1.00	2.00	0.00	2.50	5.50	-	-	0.56	-	0.56
English Add Lang	8	4	1.10	2.00	2.00	3.00	3.00	10.00	-	-	-	-	-
Not EAL	171	165	0.30	1.99	2.00	2.65	2.92	9.56	-	-	0.12	0.04	0.16
Lower KS2 Score	50	50	0.38	1.96	2.00	1.98	2.76	8.70	-	-	0.35	0.10	0.45
Middle KS2 Score	61	61	0.39	2.00	2.00	2.90	2.97	9.87	-	-	0.04	0.02	0.06
Upper KS2 Score	58	58	0.19	2.00	2.00	3.00	3.00	10.00	-	-	-	-	-
Looked After	3	2	0.52	2.00	2.00	2.50	3.00	9.50	-	-	-	-	-
Not Looked After	176	167	0.31	1.99	2.00	2.66	2.92	9.57	-	-	0.12	0.04	0.16
Pupil Premium	33	30	0.16	2.00	2.00	2.47	2.97	9.43	-	-	0.19	0.02	0.20
Not PP	146	139	0.35	1.99	2.00	2.71	2.91	9.60	-	-	0.10	0.04	0.14

Legend

Progress 8 improvement
of less than 0.1

Progress 8 improvement
between 0.1 and 0.2

Progress 8 improvement
of more than 0.2

Progress 8 Analysis – low grades

This analysis seeks to answer the question “What if the lower performing students with grades lower than expected could raise their grade scores without filling any more slots? How much would that improve Progress 8 slots?”.

This is more susceptible to change midway through Key Stage 4 than unfilled slots.

In the first five columns, total cohort, those with matched KS2 scores, the Progress 8 score and the expected subject grade (on the Attainment 8 scale) is shown. The expected subject grade is just the expected Attainment 8 score divided by ten (for the ten subjects).

Then the next five show how the average subject grade in each of the four buckets and overall. For the whole cohort, the average grade was 5.52 for English, 5.41 for Maths, 5.56 for the EBacc bucket, 5.69 for the Other bucket and 5.56 overall.

For each student, we looked in each bucket to see if the average bucket grade was lower than the expected Attainment 8. If it was, we calculated how much raising the grade to the closest GCSE grade would increase the Progress 8 score. This effect on Progress 8 is shown in the final five columns.

For the whole cohort, improving the grades of under-performing students in English would boost Progress 8 by 0.03, in Maths by 0.04, in Ebacc bucket by 0.06 and in the Other bucket by 0.04 for an overall boost of 0.17. This assumes no extra subject slots are filled.

If Progress 8 would rise by .2 or more by improving underperforming grades in a bucket or in all buckets, that value is shaded green. Should Progress 8 improve by more than 0.1 but less than 0.2 it is shaded yellow. Look for the green items to see where low grades have had most impact on your Progress 8.

Each line repeats the same procedure for each vulnerable groups.

Progress 8 Group	Cohort				Average grade per slot					Possible P8 gains				
	Cohort	KS2 match	P8 score	Exp A8 grade	English	Maths	EBacc	Other	All	English	Maths	EBacc	Other	All
All students	179	169	0.32	5.00	5.52	5.41	5.56	5.69	5.56	0.03	0.04	0.06	0.04	0.17
Boys	93	90	0.31	4.78	5.18	5.39	5.57	5.47	5.42	0.05	0.04	0.05	0.06	0.19
Girls	86	79	0.32	5.25	5.91	5.43	5.55	5.92	5.71	0.01	0.04	0.07	0.02	0.14
FSM	13	12	0.23	4.42	4.67	5.08	4.73	5.20	4.94	0.03	0.01	0.09	0.02	0.15
Not FSM	166	157	0.32	5.05	5.58	5.43	5.62	5.73	5.61	0.03	0.04	0.05	0.04	0.17
Ethnicity WBRI	154	148	0.26	4.99	5.46	5.39	5.52	5.64	5.52	0.03	0.04	0.06	0.05	0.18
Not WBRI	25	21	0.74	5.11	5.90	5.57	5.83	6.03	5.85	0.01	0.02	0.01	-	0.06
No SEN	152	143	0.37	5.20	5.69	5.59	5.64	5.88	5.71	0.03	0.03	0.06	0.02	0.15
School Action	0	0	-	-	-	-	-	-	-	-	-	-	-	-
SA+ & Statement	0	0	-	-	-	-	-	-	-	-	-	-	-	-
Provision in Place	25	24	0.08	4.02	4.62	4.58	4.87	4.76	4.71	0.05	0.06	0.03	0.12	0.27
EHC	2	2	-1.01	2.31	3.00	2.00	0.00	2.40	2.36	-	0.25	-	0.25	0.50
English Add Lang	8	4	1.10	4.30	5.75	4.50	5.42	5.75	5.40	-	0.05	-	-	0.05
Not EAL	171	165	0.30	5.02	5.51	5.43	5.57	5.69	5.56	0.03	0.04	0.06	0.04	0.17
Lower KS2 Score	50	50	0.38	3.50	4.53	4.16	4.15	4.85	4.46	0.03	0.05	0.05	0.07	0.20
Middle KS2 Score	61	61	0.39	4.96	5.39	5.26	5.32	5.62	5.41	0.02	0.03	0.06	0.01	0.13
Upper KS2 Score	58	58	0.19	6.35	6.48	6.64	6.61	6.43	6.54	0.04	0.04	0.05	0.05	0.18
Looked After	3	2	0.52	3.23	4.50	4.50	2.40	4.50	3.95	-	-	0.35	-	0.35
Not Looked After	176	167	0.31	5.02	5.53	5.42	5.60	5.70	5.58	0.03	0.04	0.05	0.04	0.17
Pupil Premium	33	30	0.16	4.51	4.90	4.93	4.68	5.22	4.95	0.03	0.02	0.11	0.02	0.18
Not PP	146	139	0.35	5.11	5.65	5.51	5.74	5.79	5.69	0.03	0.05	0.04	0.04	0.17

Legend		
Progress 8 improvement of less than 0.1	Progress 8 improvement between 0.1 and 0.2	Progress 8 improvement of more than 0.2