

# School Performance Measures from 2016

## **The objective of this section is to show:**

- The Ebacc and the new Progress 8 floor standard makes subjects like Art even more vital than ever before because Arts subjects provide significant value added to the headline indicators when compared to all subjects.
- It's in the school's and the pupil's best interests to enable them to study for 3 subjects in Block 3 that they will score highly in and are motivated to pass, in order to maximise attainment to the new floor standard.
- Making large positive value added Progress 8 scores could be harder for high attaining students and it will be very easy for them to fail to show attainment 8.
- Large value added Progress 8 gains can be made by lower attaining students and they can now add significant VA to the floor standard when their attainment counted for little under the previous indicators.

## **The new school measures**

There are several factors UK schools will have to consider when planning for the changes to performance measures from 2015/16. The new headline measures for schools will be:

- The school's Progress 8 score, which is the average of the pupil's individual progress 8 scores. Progress 8 is the difference between the KS2 estimate attainment and the KS4 Attainment score divided by ten. Confidence indicators around this score make it statistically sound.
- The Attainment 8 scores, which is the total of the points scored by each pupil at GCSE.

- Number of pupils attaining successful threshold grades in English and Maths.
- Number of students attaining the threshold Ebacc level. The Ebacc will of course be made more difficult, if as expected, it becomes compulsory to include Humanities and Languages.

## **Floor Standard**

The new floor standard for schools will be the Progress 8 measure. Where the figure is below -0.5 or the upper confidence interval below zero, then an inspection can be triggered. This makes the school's Progress 8 score vital. The difficulty for schools is that the new progress 8 and attainment 8 targets mean that schools must show progress on personalised targets for each student. No longer can schools with academically bright pupils relax in the knowledge that they will achieve a high percentage of pupils with 5 A\*-C's because the new measure means they will have to show progress on high targets set from SAT scores. This is a significant shift means that schools who don't enjoy the benefit of high numbers of academic students can still be seen to be providing successful progress for their students and attain a good floor standard. However, the new GCSE grades include an additional grade of 9, which I assume is a means for High Ability students to show progress. By 2019 the government will provide the KS4 attainment 8 target for each pupil directly. There isn't any KS2 estimated data for the first year in 2016 but schools can go to RAISE online for supporting matrices.

## **Coasting Schools**

The added difficulty for schools in meeting these performance measures is the coasting schools criteria. With regard to the Coasting Schools criteria; schools will be deemed coasting if they fall behind the new coasting level

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for three years in a row. From 2016 the Progress 8 measure will be used and up until then it's where students get less than 60% good A\*-C AND where a below average number pupils make expected progress. So schools who have above 60% good A\*-C's don't need to worry (yet) and those that have had two consecutive years under 60% need to make sure they get the Progress 8 right in its first year.

## **Block 2 Ebacc subjects**

At present, it is not the case that all students must take Humanities and Languages for GCSE because humanities and languages are still not compulsory subjects in KS4. This situation will probably change in the Autumn of 2015 when the Conservative Government are expected to release details of a compulsory Ebacc including these subjects. At present however the requirement is for the results of ANY three Ebacc subjects to reach the pass threshold. As the DfE guidelines state:

**'The (Ebacc) qualifications can count in any combination and there is no requirement to take qualifications in each of the 'pillars' of the Ebacc.'**

Source; *DfE Progress 8 Measure in 2016 and 2017, Guide for maintained and secondary schools, academies and free schools, March 2015*

What this allows you to do is to tailor the subjects taken for Ebacc around the ability of the student. For example, high academic students might do well to take up two single science options in their Ebacc block because these score highly at GCSE. The DfE examples clearly state that students might study any combination of Ebacc subjects;

- ¥ Biology, Chemistry, French; or
- ¥ Spanish, French, German; or
- ¥ History, Geography, Spanish.

This current flexibility means your students can pass the Ebacc by adapting it to suit their ability, performance and motivation. Low attaining students might take science, computer science and geography for example. They are still statistically unlikely to attain the Ebacc performance success threshold, but they are more likely to attain positive value added Attainment 8 scores if they are free to study subject they like and do better in.

## **Compulsory Ebacc?**

But what will happen to performance indicators when or if the Ebacc requirements change to become compulsory? Well the curriculum models I propose below both contain full Ebacc models to provide an idea of how this might work. The government plans to raise the GCSE pass threshold means that GCSE's are going to get tougher at a time when progress and attainment measures will too. This implies that meeting individual attainment targets for pupils will be incredibly tough, especially when students must meet those targets in academic subjects. Of course these targets will be personalised to individual ability and KS2 SAT tests are getting tougher too, but the fact remains that surpassing these targets in blocks 1 and 2 is going to be very difficult and that's where block 3 comes in.

## **Desperate times.....**

Making all students study the Ebacc options is going to be difficult, not least of all because it reduces the amount of time they have to study subjects they are motivated in. No one knows what the requirement will be at

this stage, but it's unlikely to specify a particular amount of study time. There may be scope therefore for lower attaining students (who you know aren't going to pass the Ebacc) to limit their Ebacc school study time and perhaps offer online support materials for home study. In this way you are honouring the compulsory Ebacc commitment and still giving the students every opportunity to gain the qualification. Whether they take this opportunity is not the point, you're prioritising and maximising their limited, specialist school study time.

### New GCSE target grades

The current GCSE grades match to the new numbered grades very easily. However, there will be an additional grade 9 added next year and the boundaries will change. The bottom of third a current grade B and the top third of a current grade C will score grade 5. The same proportion of students will achieve a grade 7 or above as achieve a grade A now and will be eligible for grade 9. A current G grade will become a 1 grade. It seems to me that whilst they have clearly raised the pass boundary, they've also added a higher threshold to enable high ability students to score value added for school performance. Using the current KS2 data fine score points, you can see that it is incredibly difficult for those at the high performance end to bring positive value added using a 1-8 system. It makes good sense therefore to introduce the 9 grade. The government state that the same proportions of students will get the higher grades as do now, even though the 5/C pass threshold has been raised.

### Block 3 options

In order to achieve good Progress 8 and Attainment 8 figures, you ideally want every pupil to study subjects in which they will perform better than

their KS2 estimated attainment average suggests. The positive and negative areas of the new attainment system will relate to their minimum attainment target. By dividing this target by the number of subjects they are studying, you can create a subject pass threshold table and more easily see which subjects are predicted to score positive or negative value added.

Middle Ability Student with 4.6 KS2 fine score = Estimated grade 49 points											
KS4 Attainment 8 target = 50 points											
											Total
top 20% of grade 7	<b>9 points</b> <b>A*-8 points</b> <b>A - 7 points</b> <b>B - 6 points</b>	Subjects with positive Value Added Progress									
New 5 Pass is B/C border	<b>C - 5 points</b> <b>D - 4 points</b> <b>E - 3 points</b> <b>F - 2 points</b> <b>G - 1 points</b>	5+5	5+5	n/a	5	5	5	5	5	5	<b>50</b>
		Subjects with negative Value Added Progress									
		Maths	E Lang	E Lit	Science	Hum	Lang	Opt 1	Opt 2	Opt 3	

The white line is the baseline for this student's minimal progress

So if you have a student who needs to score straight grade 7's/A's to meet their Attainment 8 target you can compare how each subject performs relative to their attainment target.

You would probably know what their attainment 8 targets were in year 7 if the DfE provide them. Accurate teacher assessment and RAISE/FFT data etc. would give you a good indication of how the pupil will perform in each subject, so you want to ensure that pupils will opt for as many subjects in which they outperform their target in as they can. If you know a pupil is unlikely to reach their target grade in a particular subject, you will need to look for subjects where they will make up that loss.

Arts subjects will be statistically favourable for enabling students to meet progress targets because Art and Design outperforms all other subjects (in the GCSE table below) at A\*-C passes except single sciences (for academic students). In fact, where students have an aptitude for Art, Music and/or Drama, it's safe to say that significant progress can be achieved by allowing these pupils to study them.

Taking account of the fact that vocational/Btec level 2 subjects score 5 points for a pass also means that these subjects could bring good VA for low ability students if successfully passed. Merits are 6 points, Distinctions are 7 so you can clearly assess the value of vocational courses for your VA measure. Lower ability students have the potential to add significant value to the school's floor standards.

## **KS2 Estimated Attainment**

At present the DfE use the KS2 SAT scores from Maths and English, average them to national data levels to create a fine level score for each subject, then create a single average attainment score for KS4. This will change in two years time to be a measure of Maths and Reading only. The Feb 2015 DfE Progress 8 document shows an example of KS2 fine levels from 2014. It shows how the Attainment targets might work for 2017 when the first KS2 data begins to come through. However, there will be more current performance matrices on RAISE online and schools will be sent updated data directly.

**Table B.1 2014 Attainment 8 estimates for each KS2 fine level**

KS2 average fine level (English & Maths)	2014 Attainment 8 estimate	KS2 average fine level (English & Maths)	2014 Attainment 8 estimate	KS2 average fine level (English & Maths)	2014 Attainment 8 estimate
1.5 <sup>a</sup>	14.94	3.7	31.75	4.9	55.11
2.0 <sup>b</sup>	18.06	3.8	33.02	5.0	57.33
2.5 <sup>c</sup>	19.13	3.9	34.71	5.1	59.72
2.8 <sup>d</sup>	20.88	4.0	36.55	5.2	62.02
2.9	21.78	4.1	38.48	5.3	64.46
3.0	23.12	4.2	40.42	5.4	66.97
3.1	23.38	4.3	42.26	5.5	69.72
3.2	24.98	4.4	44.41	5.6	72.49
3.3	26.04	4.5	46.37	5.7	74.71
3.4	26.98	4.6	48.52	5.8 <sup>e</sup>	76.32
3.5	28.39	4.7	50.67		
3.6	29.95	4.8	52.84		

Using this table, you can calculate the MINIMUM threshold for attainment at GCSE, and see where every grade above the Minimum Attainment 8 target counts towards positive value added attainment.

It might be a good idea to make threshold tables for all the fine point scores then all you would need to do it to add the pupils' names each year and hey presto you have individual progress targets.

The next table shows how KS2 core fine scores relate to Attainment 8 targets and the GCSE results needed:

<b>KS2 Attainment estimate points</b>	<b>Minimum Attainment 8 target</b>	<b>Example GCSE's needed</b>
<b>Level 5.8 or above 76</b>	<b>77</b>	5 GCSE at 8 grade inc. core plus 3 at 7
See how just one fine level point affects GCSE target grades <b>Level 5.5 = 70</b>	<b>71</b>	Eight at grade 7 = <b>70</b> and is still not enough! Now needs one 8
See how just one fine level point affects GCSE target grades <b>Level 5.4 = 67</b>	<b>68</b>	Six grade 7 inc. core + two grade 6 = <b>68</b> So one fine level point difference at KS2 means pupils might have to score 3 extra grade points at GCSE
<b>Level 5.1 = 60</b>	<b>61</b>	Seven at grade 6 inc. core + one grade 7
<b>Level 4.6 = 49</b>	<b>50</b>	Eight at Grade 5
<b>Level 4.2 = 40</b>	<b>41</b>	Seven at Grade 4 plus one at 5
<b>Level 3.6 = 30</b>	<b>31</b>	Seven at Grade 3 plus one at 4
<b>between 2.6 and 2.8 = 21</b>	<b>22</b>	Six at 2 inc. core plus two at 3
<b>between 2.1 and 2.5 = 19</b>	<b>20</b>	Eight at 2 inc. core
<b>between 1.6 and 2.0 = 18</b>	<b>19</b>	Seven at grade 2 inc. core one 1
<b>less than 1.5 = 15</b>	<b>16</b>	Four at grade 2 inc. core four 1

NOTE: This is the sample data provided by DfE, these values will change from year to year and the school will have more current data

What this data shows is that progress 8 positives could be more marginal and harder to attain for students whose attainment is high, but the Ebacc and Core threshold targets should be easier to attain. The new grade 9's should work in favour of these high achieving students. Conversely, progress 8 positives should be easier to attain in students with less academic ability, but the Ebacc and Core threshold targets will be harder. However, previously lower performing schools can now show they are making significant progress for their pupils.

Looking at some possible scenarios:

### High Ability Students

A bright student might easily have a KS4 target of 70 that is taken from a 5.5 KS2 fine score. They would therefore have a target to attain an equivalent eight subject grade 7's (with two subjects being doubled) =  $10 \times 7 = 70$ . This KS4 attainment actually gives a Progress measure of Zero! ( $70 - 70 = 0$ ) The student would need at least one A star to be deemed to be making successful progress. However, if the student had scored just one KS2 fine point less (5.4) then they would be +0.3!

High Ability Student with 5.5 KS2 fine score = 70 points										
KS4 Attainment 8 target = 71 points										
top 20% of grade 7										Total
	<b>9 points</b>									
	<b>A*-8 points</b>									
	<b>A - 7 points</b>	<b>7+7</b>	<b>7+7</b>	<b>7+7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>70</b>
	<b>B - 6 points</b>	not counted								
New 5 Pass is B/C border	<b>C - 5 points</b>									
	<b>D - 4 points</b>									
	<b>E - 3 points</b>									
	<b>F - 2 points</b>									
	<b>G - 1 points</b>									
		<b>Maths</b>	<b>E Lang</b>	<b>E Lit</b>	<b>Science</b>	<b>Hum</b>	<b>Lang</b>	<b>Sci2</b>	<b>Sci3/Lang</b>	<b>Art</b>

Here the pupil's excellent performance scores 0 attainment points  
They would need to score one grade 8 at least to make positive progress  
If they had got a 5.4 KS2 fine level (67 points) then this result would be +0.3

So this student achieves the English & Maths indicator and the Ebacc Indicator but not the Progress 8 floor indicator. Now you have to remember that the entire schools' progress scores are totalled and averaged, and a confidence indicator is also applied to create a top and bottom confidence range. So it might be that a single score such as this is insignificant. What

I'd need to establish for this student is where they are likely to get a grade 8 or 9 because they need at least one to show good progress. So even with high attaining students, the pressure is on.

### How would this look with an 8-subject model?

The table shows a nine-subject model, in an eight-subject model the English Language score would be moved to Option block 3 and the pupil would have to score 7's here also. However, using 2014 GCSE results data I can see that students at this grade are less likely to achieve English Language grade A. For every low 6 (grade B) they need to get an A star to compensate. So unless your own data tells you otherwise, national data indicates that the eight-subject model will underperform. Getting a grade 6 (B) in the core means they have to get TWO A stars elsewhere because core counts double and one score of 5 (C) is disastrous! So it makes statistical sense to provide block 3 subjects as a buffer against such slip-ups for high achievers.

### Middle Ability students

Let's look at how it might work for a Middle ability student who scored a KS2 fine average of 4.6, which gives an Attainment 8 target of 49 points. This means that the pupil in Key stage 4 needs to score the same or higher than 49 points averaged over their best 8 GCSE'S. Eight subjects X 5 points (where two are doubled) = 50 points. So getting eight straight 5's in this attainment model only gives you a Progress 8 score of 0.1 because  $50 - 49 = 1/10 = 0.1$

Middle Ability Student with 4.6 KS2 fine score = Estimated grade 49 points											
KS4 Attainment 8 target = 50 points											
Total											
top 20%	<b>9 points</b>										
of grade 7	<b>A*-8 points</b>										
	<b>A - 7 points</b>										
	<b>B - 6 points</b>										
New 5 Pass is	<b>C - 5 points</b>	5+5	5+5	5	5	5	5	5	5	5	<b>50</b>
B/C border	<b>D - 4 points</b>				not used						
	<b>E - 3 points</b>										
	<b>F - 2 points</b>										
	<b>G - 1 points</b>										
		<b>Maths</b>	<b>E Lang</b>	<b>E Lit</b>	<b>Science</b>	<b>Hum</b>	<b>Lang</b>	<b>Art</b>	<b>Drama</b>	<b>RE</b>	

This student passes the core, fails Ebacc and has made 0.1 positive progress

Interestingly there isn't a 50 point score at KS2 because the next fine score up is 4.7 that equates to 51 points. This means that if a student has an attainment target just one point above 4.6 the eight straight 7's/C's would result in negative attainment 8 score!

This strange anomaly means that even one KS2 fine level score difference can have a big impact on KS4 attainment 8 and therefore the school's value added.

Of course, if the student gets scores higher than average grade then the school can show excellent progress and this is again where the option block 3 subjects can add significant value, because they have a statistically higher chance of giving you that. Art outperforms all Ebacc subjects and most option subjects at GCSE and gives a higher chance of getting higher grades also. Effectively, it's as simple as making sure students have the ability to study for subjects they will do best in.

## Low Ability students

At the lower levels of attainment the need for option block 3 subjects is even more striking. A student who has a KS2 fine score of 3.5 converts to an attainment estimate of 28 points. Statistically, the student should have little problem scoring these points, but of course statistics often mask hidden difficulty factors of pupils in this ability range. It does however seem to make life a little easier for low ability students to show progress and achieve. Whilst they will almost certainly not add to the schools Core or Ebacc figures they can make significant gains in the Progress 8 score, compensating for tighter margins at the high end.

For example, add a couple of 5's into this data and you have a very healthy Attainment 8 score. A low attaining student at this level might easily score 5 in a chosen art subject or pass a vocational course that scores them 5 also. If they hit the 30 points shown in the table they would score  $30 - 28 = 2$ / $10 = 0.2$  for Progress 8. But add two 5's in Option subjects and they would score  $34 - 28 = 6/10 = 0.6$  for Progress 8. Now getting a 0.6 Progress 8 score from the high ability students could be very tough. Multiply this kind of attainment for low ability students across the school and suddenly these pupils are adding significant value added to your Attainment 8 scores. So low attaining students can really score you well in Progress 8 where high attaining students might not and arts subjects can give you those gains.

Remember Art has a 76.4% chance of getting a C for pupils of all ability ranges.

Low Ability Student with 3.5 KS2 fine score = Estimated grade 28 points

**KS4 Attainment 8 target = 29 points minimum**

top 20% of grade 7	<b>9 points</b>	Total															
		A*-8 points	A - 7 points	B - 6 points	C - 5 points	D - 4 points	E - 3 points	F - 2 points	G - 1 points	Maths	E Lang	E Lit	Science	Hum	Lang	Opt 1	Opt 2
New 5 Pass is B/C border		3+3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	30

- This pupil could afford to drop one grade to 2/F and still achieve Att 8 of 0.1
- 95.2% pupils got the 3 grade or higher in Art in 2014

## Playing the Attainment game

The Attainment 8 targets are very similar to Residuals, in that you are measuring the performance above or below a zero grade and the one thing I learned from working to residuals for many years was that it was always easier to get positive residuals in lower attainment bands than it was the higher ones. Even the DfE Progress 8 Measure guide Feb 2016 supports this; in fact it seems to suggest that NOT doing the Ebacc is better for general attainment at lower levels! It illustrates two students Gillian and Hardip. Gillian is a good attaining student who gets a value added score of +0.5 but Hardip (who didn't even sit several Ebacc subjects) is shown in the table as having a value added score of +1.1 grades!