



Department
for Education

Secondary accountability measures

**Guide for maintained secondary schools,
academies and free schools**

November 2017

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Summary

A new secondary school accountability system was introduced in 2016. This document explains how secondary accountability measures have been calculated in 2017. It also gives more information about recently announced reforms that will apply to accountability measures in 2018 and 2019.

Secondary accountability measures in 2017

The headline measures which appear in the 2017 performance tables are:

- progress across 8 qualifications (Progress 8)
- attainment across the same 8 qualifications (Attainment 8)
- percentage of pupils achieving a grade 5 or above in English and maths
- percentage of pupils entering the English Baccalaureate
- percentage of pupils at the school achieving the English Baccalaureate at a grade 5 or above in English and maths, and at a grade C or above in other subjects
- percentage of students staying in education or going into employment after key stage 4 (pupil destinations)

A range of additional performance measures and contextual information is published in performance tables. Further details about what will be published in the performance tables are set out in the Statement of Intent.

<https://www.gov.uk/government/publications/school-and-college-performance-tables-statements-of-intent>

The performance measures are designed to encourage schools to offer a broad and balanced curriculum with a focus on an academic core at key stage 4, and to reward schools for the teaching of all their pupils.

Secondary accountability measures are used to inform parents and students about school performance; to prompt and promote self-improvement, to inform the public and stakeholders; and to provide credible information to enable action in cases of underperformance. Performance data is used as the starting point for a conversation about school performance by Ofsted for the purposes of inspection, and by Regional Schools Commissioners (RSCs) and local authorities when discussing with school leaders what school improvement support they may need.

Expiry or review date

This guide will next be reviewed before the end of January 2018, to reflect revised results from the 2016 to 2017 academic year. It updates the previously published document:

- Progress 8 and Attainment 8: Guide for maintained secondary schools, academies and free schools.

Who is this guide for?

This guide is for:

- school leaders, school staff and governing bodies in all maintained schools, including special schools, academies and free schools
- independent schools seeking information on secondary accountability measures
- local authorities

Secondary school performance measures

Progress 8

Progress 8 was introduced in 2016 as the headline indicator of school performance determining the floor standard. It aims to capture the progress a pupil makes from the end of primary school to the end of key stage 4. It is a type of value added measure, which means that pupils' results are compared to the achievements of other pupils nationally with similar prior attainment. Every increase in every grade a pupil achieves will attract additional credit in the performance tables.

Progress 8 is calculated for individual pupils solely in order to calculate a school's Progress 8 score, and there is no need for schools to share individual Progress 8 scores with their pupils. Schools should continue to focus on which qualifications are most suitable for individual pupils, as the grades pupils achieve will help them reach their goals for the next stage of their education or training.

A Progress 8 score is calculated for each pupil by comparing their achievement – their Attainment 8 score (see below for detail) – with the average attainment of all pupils nationally who had a similar starting point, calculated using assessment results from the end of primary school.¹ The greater the Progress 8 score, the greater the progress made by the pupil compared to the average of pupils with similar prior attainment.

A school's Progress 8 score is calculated as the average of its pupils' Progress 8 scores. It gives an indication of whether, as a group, pupils in the school made above or below average progress compared to similar pupils in other schools.

- a score of zero means pupils in this school on average do about as well at key stage 4 as other pupils across England who got similar results at the end of key stage 2
- a score above zero means pupils made more progress, on average, than pupils across England who got similar results at the end of key stage 2
- a score below zero means pupils made less progress, on average, than pupils across England who got similar results at the end of key stage 2

A negative progress score does not mean pupils made no progress, or the school has failed, rather it means pupils in the school made less progress than other pupils across England with similar results at the end of key stage 2.

Attainment 8

Attainment 8 measures the achievement of a pupil across 8 qualifications including:

¹ More information about how we calculate prior attainment is included on pages 22-24.

- maths (double weighted) and English (double weighted, if both English language and English literature are entered);
- 3 qualifications that count in the English Baccalaureate (EBacc) measure – see below; and
- 3 further qualifications that can be GCSE qualifications (including EBacc subjects) or technical awards from the DfE approved list:
<http://www.gov.uk/government/collections/performance-tables-technical-and-vocational-qualifications>

The details of how qualifications are included in the measure are set out on pages 14-18 of this document.

Attainment 8 and Progress 8 calculations are described in more detail on pages 14-30.

Percentage of pupils achieving a grade 5 or above in English and maths

In 2017, pupils sat reformed GCSEs in English language, English literature and maths for the first time, graded on a 9-1 scale.

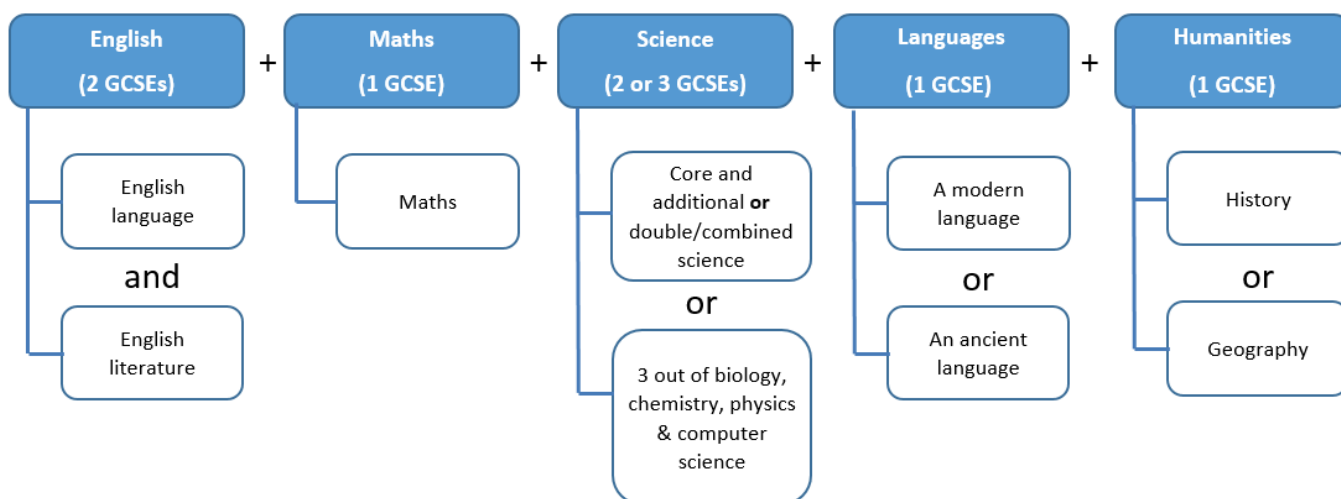
In March 2017, the department announced that the ‘strong’ pass would be used in headline attainment accountability measures. The headline English and maths measure is now the percentage of pupils achieving a grade 5 or above in English and maths. There is also an additional measure showing the percentage of pupils achieving a grade 4 or above in English and maths in performance tables.

Percentage of pupils entering the English Baccalaureate

The English Baccalaureate (EBacc) entry measure reports the percentage of pupils entered for the EBacc. To enter the EBacc, pupils must take up to eight GCSEs or equivalents, across five subject ‘pillars’.²

The structure of the EBacc is as follows:

²The full list of qualifications which count towards the EBacc is available on gov.uk:
<https://www.gov.uk/government/publications/english-baccalaureate-eligible-qualifications>



Percentage of pupils in a school achieving the English Baccalaureate

The headline EBacc attainment measure in 2017 is the percentage of pupils in a school gaining a grade 5 or above in English and maths, and a grade C or above in other subjects.

There is also an additional measure in the performance tables of the percentage of pupils gaining a grade 4 or above in English and maths, and a grade C or above in other subjects.

In the Government response to the EBacc consultation published in July 2017, we stated that we intend to change the headline EBacc attainment measure from the proportion of pupils achieving a grade 5 and above in the EBacc subjects to an EBacc average point score from 2018. This will measure pupils' point scores across the five pillars of the EBacc. This will ensure the achievements of all pupils are recognised, not just those at particular grade boundaries, encouraging schools to enter pupils of all abilities, and support them to achieve their full potential. To help schools prepare for this new headline measure, we plan to share 2017 EBacc average point score shadow data with schools in early 2018. This 2017 shadow data will not be published and schools will not be held accountable. The EBacc average point score will not appear in performance tables until October 2018.

Further information on how the EBacc average point score measure will be calculated is on pages 31-34.

Percentage of pupils staying in education or going into employment after key stage 4 (pupil destinations)

The headline pupil destination measure shows the percentage of pupils continuing to a sustained education, employment or training destination in the year after completing key stage 4 study (after year 11). The data published in October 2017 is for pupils who finished year 11 in 2015, which is the most recent data available. To be counted in a

sustained destination, pupils had to have a recorded activity throughout the first two terms of the 2015/16 academic year.

Additional breakdowns show whether pupils were in education or employment, did not stay in education or employment for at least two terms, or whether activity was not captured in the data. Education destinations including further education (FE) colleges and other providers, sixth-form colleges, school sixth forms or other education destinations are also shown.

We use a range of administrative data to determine pupils' destinations. The data sources include the national pupil database (NPD) and employment and benefits information from Her Majesty's Revenue and Customs (HMRC), Department of Work and Pensions (DWP) and local authorities.

Further information on the KS4 destination measures can be found in the DfE publication: Key stage 4 destination measures: guidance and technical note for 2017 performance tables.

Publication of KS4 secondary accountability measures

Headline secondary accountability measures are published as a statistical first release and at school level on the school and college performance tables website. This includes data on pupil characteristics (gender, free school meals, disadvantage, special education needs and ethnicity). The provisional publication in October will include gender characteristic breakdowns. All other characteristics breakdowns will be included in the January 2018 revised publication.

Attainment 8 scores, including element breakdowns, are published for all secondary schools for which data are published in the performance tables. Progress 8 and the element breakdowns are published for all secondary schools for which data are published in the performance tables, apart from independent schools and independent special schools.³

As usual, suppression is applied so we do not disclose the results of small numbers of pupils. The Attainment 8 and Progress 8 scores are suppressed if the school has five or fewer pupils included in the measure, and the Progress 8 score is suppressed if less than 50% of pupils at the end of key stage 4 are included in the measure.

Schools, colleges and local authorities also have access to performance data via Analyse School Performance (ASP) and Key to Success (KTS).

³ We do not publish key stage 2 data for independent schools because they don't have to follow the national curriculum or enter pupils for key stage 2 tests. This means they are not included in the calculation of Progress 8. They are still included for attainment at key stage 4.

Floor standard

The floor standard for a school is the minimum threshold for school level progress scores. It is important to note that the Government is clear that data is a starting point for a conversation with school leaders about school improvement. No school is judged on the basis solely on the basis of one year's set of performance data.

Floor standards do not apply to special schools, independent schools, pupil referral units, alternative provision or hospital schools. Schools are excluded from a Progress 8 floor standard in a particular year where they have fewer than 6 pupils at the end of key stage 4, or where less than 50% of pupils have key stage 2 assessments that can be used as prior attainment in the calculations of Progress 8.

From 2016, a school is below the floor standard if its Progress 8 score is below -0.5, and the upper band of the 95% confidence interval is below zero.⁴ Confidence intervals are explained in more detail on page 27 and in **Annex D**.

The coasting definition in 2017

In January 2017, the Department published regulations setting out a three year definition of coasting⁵ based on the same performance measures that underpin the floor standards. In 2017, a secondary school will fall within the coasting definition if based on revised data:

- in 2015, fewer than 60% of pupils achieved 5 A*-C at GCSE (including English and maths) and less than the national median achieved expected progress in English **and** in maths; **and**
- in 2016, the school's Progress 8 score was below -0.25⁶; **and**
- in 2017, the school's Progress 8 score was below -0.25⁷

A school will have to be below the relevant coasting threshold in all three years to fall within the overall coasting definition.

Schools are excluded from the coasting measure from 2016 onwards if:

- they have fewer than 6 pupils at the end of key stage 4; or
- less than 50% of pupils have key stage 2 assessments that can be used as prior attainment in the calculations of Progress 8; or
- the school closes within the academic year (except if it reopened as a converter academy⁸).

Schools were excluded from the coasting measure in 2015 if:

⁴ Some schools chose to opt into Progress 8 in 2015. This was the floor standard in 2015 for those schools that chose to opt in.

⁵ www.legislation.gov.uk/ukxi/2017/9/contents/made

⁶ In addition, the upper band of the confidence interval is below zero.

⁷ In addition, the upper band of the confidence interval is below zero

⁸ Schools that have become a sponsored academy during any point within the three year coasting period will not be subject to the coasting standard until the school has of three years of consecutive data as a sponsored academy.

- they had fewer than 11 pupils at the end of key stage 4; or
- less than 50% of pupils had key stage 2 assessments that can be used as prior attainment in the calculations of expected progress; or
- the school closed within the academic year (except if it reopened as a converter academy).

Any school that is excluded from the coasting measure in a particular year cannot be defined as coasting until it has three consecutive years of data that meets the coasting definition. No school will be identified as coasting until after the revised secondary performance tables are published in January.

The coasting definition applies to all mainstream maintained schools and academies with the relevant key stage 4 data. It will not apply to PRUs, special schools or alternative provision academies.

Once a school has fallen within the coasting definition, Regional Schools Commissioners (RSCs) will engage the school to consider its wider context, and decide whether additional support is needed. Action will not be automatic and the focus will be on helping schools to improve in order to drive up standards.

More detail about the processes that RSCs will follow and the factors they may consider in determining the appropriate support for schools identified as coasting is set out in the Schools Causing Concern guidance⁹.

⁹ www.gov.uk/government/publications/schools-causing-concern--2

Calculating Attainment 8 and Progress 8

Qualifications included in the measures

Progress 8 is based on a calculation of pupils' performance across 8 qualifications, called Attainment 8. These qualifications are:

1. A double weighted **maths** element that will contain the point score of the pupil's English Baccalaureate (EBacc) maths qualification.
2. An English element based on the highest point score in a pupil's EBacc **English language** or **English literature** qualification. This will be double weighted provided a pupil has taken both qualifications.
3. An element which can include the three highest point scores from any of the **EBacc** qualifications in science subjects, computer science, history, geography, and languages. For more information see the [list of qualifications that count in the EBacc](#). The qualifications can count in any combination and there is no requirement to take qualifications in each of the 'pillars' of the EBacc.
4. The open element contains the three highest point scores in any three **other** subjects, including English language or literature (if not counted in the English slot), further GCSE qualifications (including EBacc subjects) or any other technical awards from the DfE approved list: <http://www.gov.uk/government/collections/performance-tables-technical-and-vocational-qualifications>). For more information, see the list of qualifications included in the key stage 4 performance tables: <http://www.gov.uk/government/publications/2018-performance-tables-discount-codes>.

If a pupil has not taken the maximum number of qualifications that count in each group then they will receive a point score of zero where a slot is empty.

No legacy GCSEs (A*-G), International GCSEs or level 1/level 2 certificates in these subjects will count in performance tables once new GCSEs (9-1) in that subject are introduced. In 2017, following the introduction new reformed GCSEs (9-1) in English and maths, entries into legacy qualifications within these subject areas do not count in 2017 performance tables. This includes early entries prior to 2017 in legacy qualifications. For qualifications other than English and maths, legacy qualifications will continue to count until reformed GCSEs (9-1) in these subject areas are introduced from 2018 onwards. For further details, see Annex F.

Maths qualifications

This element of Progress 8 is double weighted. Only maths qualifications which also count towards the EBacc can count in the maths element of Progress 8. From 2017 only the new GCSEs (9-1) in maths or AS levels in maths or further maths will count towards the EBacc and in the maths element of Progress 8.

Where a pupil has taken more than one EBacc maths qualification, qualifications which are not used in the maths element will not count elsewhere in Progress 8.¹⁰

Approved mathematical type qualifications that do not count towards the EBacc, e.g. GCSE statistics, will be counted in a slot in the 'open' element of Progress 8 regardless of whether or not a pupil has also taken an EBacc maths qualification.

Level 3 Free Standing Maths Qualifications will only count in the 'open' element, and will only count if a pupil has not taken an EBacc maths qualification.

English qualifications

If a student sits both English language and English literature, the higher grade is double-weighted in the English element. The lower grade can count in the 'open' element of subjects (not in the EBacc element).

If only GCSE English literature or English language is taken then this qualification will count in the English element, but will not be double-weighted.

From 2017 only the new GCSEs (9-1) in English language and English literature, AS English language, AS English literature and AS English language and literature count towards the EBacc and in the English slot of Progress 8.

An explanation of how English counts towards other headline performance table measures is provided at **Annex E**.

Qualifications in the English Baccalaureate (EBacc) subjects

Only qualifications that count towards the EBacc measure can be included in the Progress 8 element reserved for EBacc qualifications.

Maths cannot be included in the EBacc element. English literature and English language cannot be included in the EBacc element. The best of these qualifications will count in the 'English' element, and the other can count in the 'open' element.

¹⁰ First entry and discounting rules as set out on page 18 still apply

There are no other stipulations about the types of EBacc subjects which can count in the three slots of the EBacc element. Any combination of EBacc subjects can be used to fill these slots, including for example:

- biology, chemistry, French; or
- Spanish, French, German; or
- history, geography, Spanish.

Science and computer science qualifications

All students have to study some science up to the age of 16. The key stage 4 science and computing curricula are compulsory in maintained schools, and academies are required to provide a broad and balanced curriculum, including English, maths and science, up to the age of 16.

In 2017, core and additional science GCSE will take up one slot each in the Progress 8 measure. Core science GCSE alone will take up one slot – a pupil does not have to take additional science for core science to count in Progress 8 (and vice versa, a pupil does not have to take core science for additional science to count in Progress 8). Early entries for GCSE core science in 2017 will not count in performance tables once reformed science GCSEs are examined in 2018.

Separate GCSEs in biology, chemistry, physics and computer science each take up one slot, and can count in Progress 8 in any combination. The ‘double science’ level 1/level 2 certificates that are offered by some awarding organisations can take up two slots in either the EBacc or open elements of Progress 8 where this represents the highest relevant grades achieved (provided they are recognised for inclusion in performance tables). One grade from this qualification can fill one slot if higher grades are achieved in other qualifications.

The points awarded to double science are averaged, which means for example, that a double science grade of a grade C and a grade D would be averaged to two 3.5 points in 2017 to fill either one or two slots as appropriate (a maximum of 7 points across two slots).

Changes to science GCSEs

New science and computer science GCSEs (9-1) are available for teaching from September 2016, with the first examinations in summer 2018. There are single science GCSEs (biology, chemistry and physics) and computer science) and a combined science (double award). GCSEs in biology, chemistry, physics and computer science will each take up one slot, and can count in Progress 8 in any combination. The combined science (double award) can take up two slots in either the EBacc or open elements of Progress 8 where this represents the highest relevant grades achieved. One grade from this qualification can fill one slot if higher grades are achieved in other qualifications.

The points awarded to combined science (double award) are averaged, which means for example, that a double science grade of grade 6 and a grade 5 would be averaged to two 5.5 points to fill either one or two slots as appropriate (a maximum of 11 points across two slots).

Qualifications in the ‘open’ element

Up to three GCSE qualifications (including EBacc subjects not used to fill the slots in the EBacc element) and/or technical awards from the approved list for the year in question can count towards the three slots in the ‘open’ element in the Progress 8 measure.

Technical awards are approved qualifications that develop technical and practical skills not usually acquired through general education.

Level 3 qualifications

AS levels count in the appropriate element of the Progress 8 measure for their subject (for example, maths AS-levels count in the maths slot, a French AS-level in the ‘EBacc group’, and an Art AS-level in the ‘open’ element). If a GCSE in the same subject has been taken the AS-level will always count in Progress 8 and the GCSE will not count, even if the AS has a lower point score than the GCSE. AS-levels at grades A and B score higher points in Progress 8 than an A* in unreformed GCSEs, and AS levels at grade A score higher points in Progress 8 than a grade 9 in reformed GCSEs.

Level 3 qualifications not included in the EBacc list can only count in an ‘open’ slot. This includes Free Standing Maths qualifications and Asset Languages Ladder qualifications.

Free Standing Maths Qualifications will only count in an ‘open’ slot if a pupil has not taken an EBacc maths qualification.¹¹

Asset Language Ladder qualifications will only count in an ‘open’ slot if the pupil has not taken a GCSE in the same language.

One graded music qualification can count in the ‘open’ element of Progress 8, and can count alongside GCSE music.

Point scores

In 2017, new GCSE (9-1) qualifications in English and maths were included for the first time in the Progress 8 measure. Further new GCSEs will be introduced in 2018, 2019

¹¹Free Standing Maths Qualifications (FMSQ) do not discount EBacc maths qualifications therefore early entry rules are not applicable across these qualifications. For example, even if a pupil sat an FSMQ in year 10 and an EBacc Maths qualification in year 11, the ‘open’ slot would not be filled by the FSMQ as the pupil would have an EBacc maths qualification which counts.

and a very small number of less-taught languages GCSEs in 2020. A full list can be found in Annex F.

These qualifications have a new grading scale that uses the numbers 9 to 1 to identify levels of performance (as will other new GCSEs once they are introduced over the following three years). Points will be allocated to the new GCSEs on a 9-1 score scale corresponding to the new 9 to 1 grades, e.g. a grade 9 will get 9 points in the performance measures.

During this transition period where a combination of reformed and legacy GCSEs can count towards performance measures, point scores from legacy GCSEs are mapped onto the 9-1 scale (with 8.5 being the maximum points available for legacy GCSEs) (see **Annex A**) and used to calculate Attainment 8, Progress 8 and, from 2018, the EBacc average point score.

The point scores for different types of qualifications in 2016, 2017, 2018 and 2019 can be found in **Annex A**. A list of all KS4 qualifications and the points allocated to them in performance tables can be found here:

<https://www.gov.uk/government/publications/school-performance-2017-point-scores-for-ks4-qualifications>.

Discounting, pathway and first entry rules

Discounting ensures that, where a pupil has taken two or more qualifications with a significant overlap in content, the performance tables only give credit once for teaching a single course of study.

[Rules for first entry in a particular subject](#) still apply under Progress 8 and Attainment 8, as do rules for pathways in English, maths and science qualifications. The discounting and early entry guidance is published on gov.uk here:

<https://www.gov.uk/government/publications/2018-performance-tables-discount-codes>

When a new GCSE (9-1) is introduced in the performance tables, an early entry to the legacy GCSE (A*-G) in the same subject will not count in the performance tables. For example, when new science GCSEs are introduced in performance tables in 2018, early entry to legacy science GCSEs in 2017 will not count in performance tables.

Calculating Attainment 8

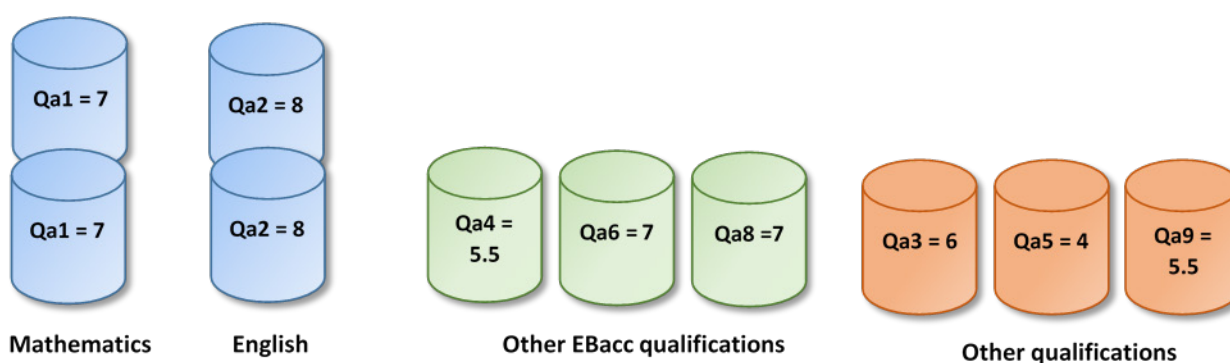
Worked Example A

Table 1 sets out how the Attainment 8 score would be calculated for a particular pupil, Gillian, based on 2017 point scores.

Table 1: Key stage 4 results for Gillian

ID	Qualification	Grade	Points	Included in the measure	Element	Doubled?	Total points
Qa1	GCSE maths	7	7	✓	Maths	✓	14
Qa2	GCSE English language	8	8	✓	English	✓	16
Qa3	GCSE English literature	6	6	✓	Other	✗	6
Qa4	GCSE additional science	B	5.5	✓	EBacc	✗	5.5
Qa5	GCSE art	C	4	✓	Other	✗	4
Qa6	GCSE core science	A	7	✓	EBacc	✗	7
Qa7	GCSE French	A*	8.5	✗			
Qa8	AS Level French	C	7	✓	EBacc	✗	7
Qa9	GCSE Spanish	B	5.5	✓	Other	✗	5.5
Qa10	GCSE religious studies	D	3	✗			

Referring to the IDs of qualifications above, the following illustrates the calculation of the Attainment 8 score for Gillian:



$$\begin{aligned}
 \text{Attainment 8 score} &= (\text{Qa1} + \text{Qa1}) + (\text{Qa2} + \text{Qa2 as taken English literature}) \\
 &\quad + \text{Qa4} + \text{Qa6} + \text{Qa8} + \text{Qa3} + \text{Qa5} + \text{Qa9} \\
 &= (7 + 7) + (8 + 8) + 5.5 + 7 + 7 + 6 + 4 + 5.5 \\
 &= \mathbf{65}
 \end{aligned}$$

Dividing the Attainment 8 score by 10 gives a pupil's average grade. In this case it is 6.5.

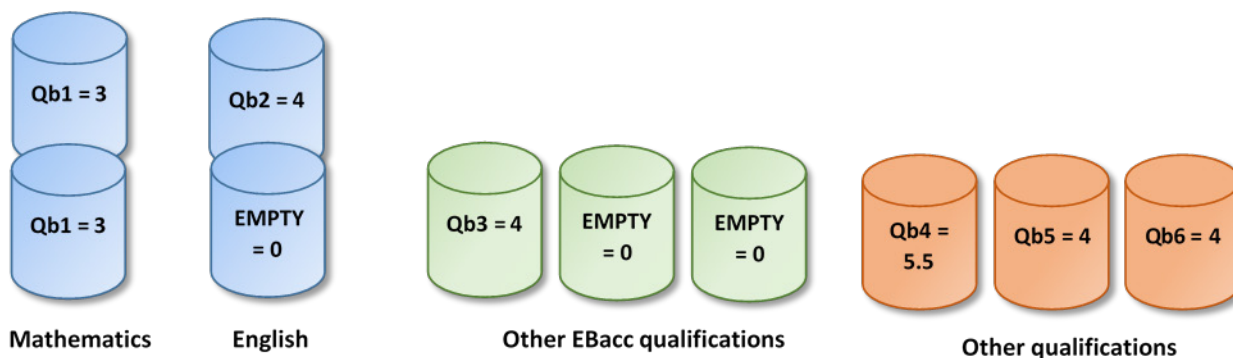
Worked Example B

Table 2 sets out how the Attainment score would be calculated for another pupil, Hardip, in 2017.

Table 2: Key stage 4 results for Hardip

ID	Qualification	Grade	Points	Included in the measure	Element	Doubled?	Total points
Qb1	GCSE Maths	3	3	✓	Maths	✓	6
Qb2	GCSE English Language	4	4	✓	English	✗	4
Qb3	GCSE core science	C	4	✓	EBacc	✗	4
Qb4	BTEC First Award in Hospitality	Merit	5.5	✓	Other	✗	5.5
Qb5	BTEC First Award in Sport	Pass	4	✓	Other	✗	4
Qb6	Cambridge National Certificate in Business and Enterprise	Pass	4	✓	Other	✗	4
Qb7	NCFE Certificate in Engineering Studies	Pass	4	✗			

Referring to the IDs of qualifications above, the following illustrates the calculation of the Attainment 8 score for Hardip:



$$\begin{aligned}
 \text{Attainment 8 score} &= (Qb1 + Qb1) + (Qb2 + 0) \\
 &\quad + Qb3 + 0 + 0 + Qb4 + Qb5 + Qb6 \\
 &= (3 + 3) + (4 + 0) + 4 + 0 + 0 + 5.5 + 4 + 4 \\
 &= \mathbf{27.5}
 \end{aligned}$$

Dividing the Attainment 8 score by 10 gives a pupil's average grade. In this case it is 2.75.

Hardip has not taken English literature, so his score for English language is not doubled. Furthermore, he has taken only one EBacc subject, so he scores zero for two of the three EBacc slots. Only three of his four technical awards are counted.

Calculating Progress 8

Calculating a pupil's Progress 8 score

Progress 8 scores are calculated for pupils for the sole purpose of calculating the school's Progress 8 score.

Pupils are included in Progress 8 if:

- their key stage 4 attainment can be matched to their attainment at key stage 2;
- they have a key stage 2 average point score that is greater than zero;
- they do not have a missing or disregarded outcome in both reading and maths key stage 2 tests / teacher assessments;
- they attend a maintained mainstream school

A pupil's Progress 8 score is defined as their Attainment 8 score, minus their estimated Attainment 8 score. The estimated Attainment 8 score is the average Attainment 8 score of all pupils nationally with the same prior attainment at key stage 2 within that cohort. Provisional 2017 attainment estimates are shown in **Annex B**.

From 2017, a pupil's prior attainment is defined as the average of their key stage 2 reading and maths results, in fine graded levels. Further details on the input for the prior attainment calculation for 2017 to 2019 is shown in **Annex C**.

Example of fine level calculation

Pupil results for key stage 2 tests are in the form of basic levels which are derived by applying level thresholds to raw test marks. These basic levels and test marks are used to calculate key stage 2 prior attainment fine levels for use in Progress 8. From 2017 onwards, only key stage 2 reading and maths test results will be used in the calculation of these fine levels. This is because since 2012 primary schools have used a form of teacher assessment in writing at key stage 2 that does not map easily to test scores.

The majority of pupils reaching the end of key stage 4 in 2017, reached the end of key stage 2 in 2012. The table below shows the level thresholds from the key stage 2 tests in 2012.

Reading		Maths	
Level	Mark range	Level	Mark range
N	0-10	N	0-14
-		2	15-17
3	11-17	3	18-45
4	18-32	4	46-78
5	33-50	5	79-100

For pupils with key stage 2 test level 3, 4 or 5, test marks are converted to fine grade by the following formula:

$$\left(\text{Basic level} + \frac{\text{actual test mark} - \text{bottom of level threshold}}{\text{top of level threshold} - \text{bottom of level threshold} + 1} \right)$$

where the level and level thresholds are determined by the mark.

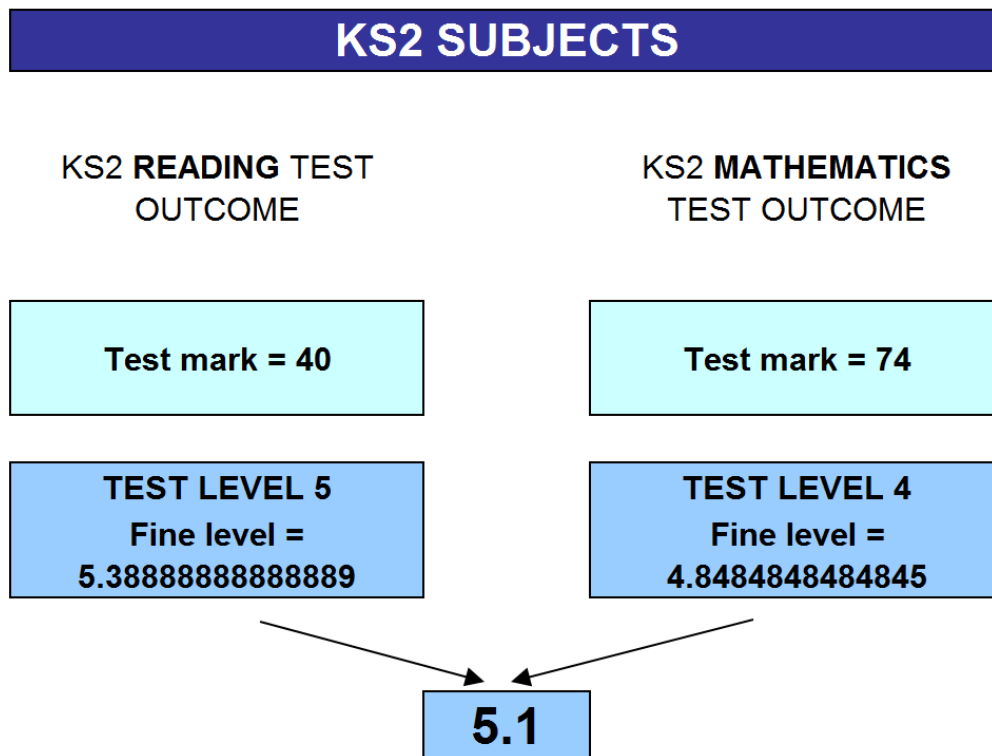
For pupils with key stage 2 test level 2, teacher assessment is also taken into account. If a pupil has a teacher assessment of W, 1 or 2, their fine grade is 0.5, 1.5 or 2.5 respectively. If their teacher assessment is higher than 2, test marks are converted to fine grade by the following formula:

$$\left(3 - \frac{\text{bottom of level 3 threshold} - \text{actual test mark}}{\text{top of level 3 threshold} - \text{bottom of level 3 threshold} + 1} \right)$$

Further detail is given in Annex C. Once the key stage 2 reading and maths marks have been converted to fine grade, an average of the two is taken to provide an overall fine

level. This is then rounded to 1 decimal place to obtain the fine level as used in Progress 8 calculations.¹²

If, for example, a pupil reaching the end of key stage 2 in 2012 achieved key stage 2 reading and maths test marks of 40 and 74 respectively, this would be converted to a key stage 2 fine level as depicted by the diagram below.



¹² Following feedback regarding the methodology used to calculate prior attainment scores, small changes have been made to improve the accuracy of the calculation for 2017 data. These are noted below:

- When fine grade is calculated, it is **no longer output to two decimal places or multiplied by 6 to form 'fine points.'**
- Once the key stage 2 English and maths marks have been converted to fine levels, an average of the two is taken to provide an overall point score. **The requirement to divide this number by 6 has been removed**, however it should still be rounded to 1 decimal place to obtain the fine level as used in Progress 8 calculations.

Measurement of the progress of pupils with no key stage 2 test results.

Pupils working below the level of the test

When calculating the baseline for each pupil's Progress 8 score, we will use key stage 2 teacher assessments in cases where pupils have been unable to access the end of key stage 2 tests. This includes taking account of teacher assessments at levels 1 and 2. Annex C shows how we will award points to different pupils in Progress 8 and other value added performance measures.

Pupils without a test score in reading, maths or both

Certain pupils without a test score in one or both of reading and maths, can have their teacher assessment used. If a pupil has assessment information for one subject only, this subject will be used as the baseline.

Pupils who have no key stage 2 assessment

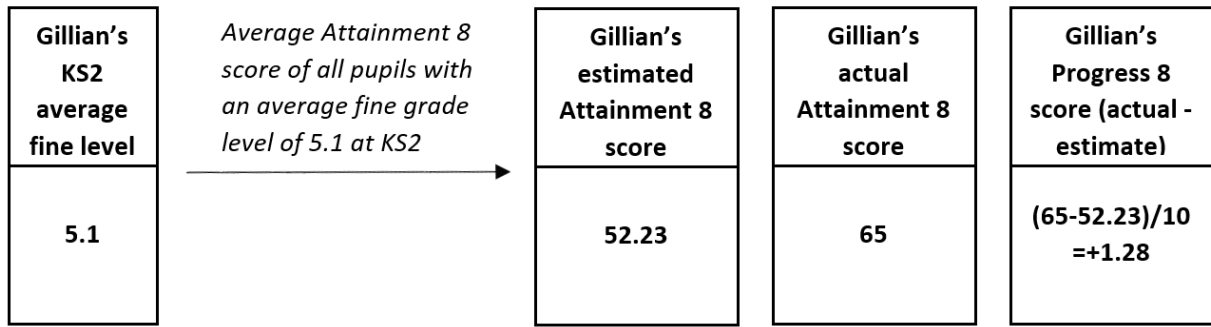
There will be some pupils (those arriving at secondary school from the independent sector or abroad) who have no key stage 2 results to use as the baseline for the Progress 8 measure. These pupils' scores will not be included in the Progress 8 measure (and the pupils will not be included in the denominator when calculating the average of the progress scores for the school).

However, these pupils will be included in the attainment measures for the school, unless they have arrived from a non-English speaking country in year 10 or year 11 and the school requests for their results to be removed. We also expect the school to be able to show to Ofsted, parents and others the progress these pupils have made through secondary school. The school can do this by providing information from robust assessments of their own when the pupil enters the school, and then looking at the pupil's progress to GCSEs.

Worked Example A - continued

As we saw, Gillian has an Attainment 8 score of 65. Her key stage 2 fine point scores were 5.38888888888889 and 4.84848484848485 in reading and maths, giving an average of 5.1 to 1 decimal place. The national average revised 2017 Attainment 8 score for pupils with Gillian's key stage 2 results is 52.23 in that year.

Gillian's Progress 8 score is the difference between her actual Attainment 8 score and the estimated Attainment 8 score, divided by 10 that is, $65 - 52.23 = +12.77 / 10 = 1.28$.



This means that Gillian has achieved an average of just over one and a quarter of a grade better per subject than other pupils with the same prior attainment.

Calculating a school Progress 8 score

The school's Progress 8 score is the mean average of its pupils' Progress 8 scores.

Worked Example A – continued

Let us then say that Gillian is one of 142 pupils in her school's key stage 4 cohort, who gain a range of Progress 8 scores:

Pupil #	Pupil name	P8 score
1	Gillian	+1.28
2	Lindsay	-0.20
...
142	Hardip	+1.10
Sum		+36.50

So the school's Progress 8 score is calculated as $36.50/142 = 0.26$

Interpreting Progress 8 scores

A school's Progress 8 score is calculated as the average of its pupils' Progress 8 scores. For all mainstream pupils nationally, the average Progress 8 score will be zero. When including pupils at special schools the national average will not be zero as Progress 8 scores for special schools are calculated using Attainment 8 estimates based upon mainstream pupils. School scores should be interpreted alongside their associated confidence intervals. If the lower bound of the school's confidence interval is greater than zero, it can be interpreted as meaning that the school has achieved greater than average progress compared to pupils nationally, and vice versa if the upper bound is negative.

See **Annex D** for further details on interpreting school scores and their associated confidence intervals.

Confidence intervals

Progress 8 results are calculated for a school based on a specific cohort of pupils. A school may have been just as effective but have performed differently with a different set of pupils. Similarly, some pupils may be more likely to achieve high or low grades independently of which school they attend. To account for this natural uncertainty 95% confidence intervals around Progress 8 scores are provided as a proxy for the range of scores within which each school's underlying performance measure can be confidently said to lie. The results of schools with a small cohort tend to have wider confidence intervals; this reflects the fact that the performance of a small number of pupils taking their key stage 4 exams can have a disproportionate effect on the school's overall results. Both the Progress 8 score and the confidence interval for a school should be taken into account when comparing with other schools, pupil groups or national averages.

Information about how confidence intervals will be calculated is described in **Annex D**.

Pupils with extremely negative scores

The Department is listening to feedback from schools about the impact that a small number of pupils with extremely negative progress scores can have on a school's overall Progress 8 score. We intend to make a change to the Progress 8 methodology from 2018, and will work with sector on the best approach in the autumn of 2017.

In 2017 we will ensure that those working with school data, including Ofsted, Regional Schools Commissioners and local authorities are aware of the potential impact on a school's Progress 8 score of pupils with extremely negative progress scores. We will also ensure that they are aware of the wider changes to GCSEs and Attainment 8 point scores. The impact of pupils with extremely negative scores on Progress 8 will also be taken into account where a school is below the floor standard or coasting in 2017.

Impact of the number of qualifications taken on a pupil's Progress 8 score

The number of qualifications each pupil should enter remains a professional judgement led by what best meets the needs of an individual.

The Progress 8 score for each pupil will always be determined by dividing the points total by 10 (the eight qualifications with English and maths both double-weighted), regardless of how many qualifications the pupil sits.

This approach supports the policy aim to encourage schools to offer a broad and balanced curriculum with an academic core.

It may benefit some less able pupils to work towards good grades (and hence score more points) in fewer subjects, with the emphasis on doing well in English and maths, rather than to take more subjects but achieve lower grades overall.

2017 key stage 2 tests

We use scaled scores to report the results of the national curriculum tests that pupils sit at the end of key stage 2. As in 2016, the range of scaled scores available for each KS2 test is the same as in 2016. 80 is the lowest scaled score that can be awarded and 120 is the highest scaled score. Pupils scoring at least a scaled score of 100 will have met the expected standard of the test. More information about scaled scores can be found [here](#).

If you would like to see how test scores compare with the 2017 national or local authority average for each subject, or the 2016 results, you can do this at <https://www.gov.uk/government/collections/statistics-key-stage-2>. Secondary schools should continue to view key stage 2 test results as just one piece of data available to them and continue to supplement this data with their own ongoing assessments of what pupils know and can do.

Information available to secondary schools about their year 7 pupils

Secondary schools received information via common transfer files on the teacher assessment and test score (the scaled score) awarded to each pupil.

Question Level Analysis is available for secondary schools to use in ASP. This will help secondary schools identify strengths and weaknesses of incoming year 7 pupils in each test subject.

How scaled scores will be used in Progress 8

The first GCSE results for pupils with key stage 2 scaled scores will not be available until 2021. We will provide information about how scaled scores will be used in Progress 8 in due course.

Estimated grades

The minimum grades each pupil requires to achieve a positive Progress 8 score (also known as their 'estimated grade') will not be known in advance. This is because each pupil's results are compared to other pupils with the same prior attainment *within the same cohort*.

Care should be taken when using a previous year's attainment estimates as a guide to potential future Progress 8 results. This is because changes to national subject entry patterns and performance will cause these estimates to change in future years. Many schools will change their curriculum offer in response to the Progress 8 measure, so any modelling based on current national results could be misleading.

Pupils reaching their estimated grades

A pupil's estimated grade is what they are anticipated to achieve based on the national average for their prior attainment group. Progress 8 does not give particular credit to a school for helping a pupil reach his or her estimated grade. Schools get credit for each increase in grade a pupil achieves, regardless of how this grade relates to their estimated grade. For example, the Progress 8 score can improve equally if a pupil working well below their estimated grade moves up one grade, or if another pupil moves up one grade to achieve their estimated grade.

Setting estimated grades in advance

We had proposed to move to a system in 2019 in which schools are informed three years in advance about the results each pupil will require to achieve a positive Progress 8 score.

Following further analysis of the impact of qualification, curriculum and accountability reform, we no longer plan to move to this system in 2019 as we cannot be certain that it will not introduce unfairness in how estimated grades are set for different prior attainment groups.

Calculating the EBacc average point score measure (2018)

In 2017, the EBacc attainment measure remains the threshold measure outlined on page 10 of this document.

As announced in July 2017, however, we plan to change the headline EBacc attainment measure to an EBacc average point score (APS) from 2018 (the data based on the 2018 exam season published in October 2018 and January 2019).

The new measure will show pupils' point scores across the five pillars of the EBacc. The EBacc APS will be calculated by allocating points to a pupil's best grades in EBacc subjects using the same rules as the current EBacc attainment threshold measure, as follows:

- The better grade of either English language or English literature. As in the current EBacc attainment threshold measure, both subjects must be taken.
- The grade for Maths.
- The best two grades from exams taken in science. Grades will be taken from the following:
 1. If the single sciences option is chosen, three out of four single sciences must be taken, in line with the current EBacc attainment threshold measure). The best two grades will be taken from these subjects.
 2. Grades for Core Science and Additional Science
 3. Grades for Double science¹³
- The better grade of either geography or history (Humanities)
- The best grade in language

These points will be totalled for each pupil, with a zero for any missing pillars, and then divided by 6 to create an average point score per pupil.¹⁴ These scores are added together for all pupils in a school's end of key stage 4 cohort¹⁵, and divided by the number in the cohort, to calculate the EBacc average point score per pupil for each school.

To help schools prepare for this new headline measure, we plan to share 2017 EBacc average point score shadow data with schools in early 2018. The following worked examples are designed to support schools using their 2017 shadow EBacc APS data.

¹³ To meet the criteria for the science element of the 2017 EBacc attainment threshold, a pupil must either take:

- Core and additional Science, and achieve A*-C in both
- Three individual sciences, and achieve A*-C grades in two
- Double science and achieve A*A* to CC grades

To note, this will be reviewed upon introduction of reformed science GCSEs in 2018, graded on the 9-1 scale.

¹⁴ Science grades count in two pillars, meaning a total of six pillars for EBacc APS.

¹⁵ Pupils are identified as being at the end of key stage 4 if they were on roll at the school and in year 11 at the time of the January 2017 school census. Age is calculated as at 31 August 2016, and the majority of pupils at the end of key stage 4 were age 15 at the start of the academic year. Some pupils may complete this key stage in an earlier or later year group.

Worked example 1: EBacc APS for Sumita

Table 1 sets out how the EBacc APS would be calculated for a particular pupil, Sumita, based on her attainment in EBacc subjects.

Table 1: Key stage 4 results for Sumita

ID	Qualification	Grade	Points	Included in the measure	Element	Points used toward EBacc APS
Qc1	GCSE English language	8	8	✓	English	8
Qc2	GCSE English literature	7	7	×	English	×
Qc3	GCSE Maths	5	5	✓	Maths	5
Qc4	GCSE Biology	C	4	×	Science	×
Qc5	GCSE Physics	B	5.5	×	Science	×
Qc6	GCSE Chemistry	A	7	✓	Science	7
Qc7	GCSE Computer Science	A*	8.5	✓	Science	8.5
Qc8	GCSE History	B	5.5	✓	Humanities	5.5
Qc9	GCSE French	C	4	✓	Languages	4.0
Qc10	GCSE Religious studies	D	3	×	None	×

Sumita sat both English language and English literature, so her English score can be used toward her EBacc APS. Her score in the English element was taken from English language as this was her best result. Sumita took a maths GCSE that counts towards the EBacc maths element, so this score is used.

Sumita chose the single sciences option and sat four single sciences, so her science score can be used toward her EBacc APS. Her two highest scoring grades were in GCSE Chemistry and GCSE Computer Science.

Sumita's results for History and French are used toward the Humanities and Languages elements, respectively. Sumita did not enter for other qualifications in these areas so these points are used. GCSE Religious studies does not count toward the EBacc so is not used in the calculation of EBacc APS.

Total EBacc point score = Qc1 + Qc3 + + Qc6 + Qc7 + Qc8 + Qc9

$$= 8 + 5 + (7 + 8.5) + 5.5 + 4.0$$

$$= 38$$

Average EBacc point score =

$$38 \div 6 = \mathbf{6.33}$$

Worked example 2: EBacc APS for Steven

Table 2 sets out how the EBacc APS would be calculated for a particular pupil, Steven, based on their attainment in EBacc subjects.

Table 2: Key stage 4 results for Steven

ID	Qualification	Grade	Points	Included in the measure	Element	Points used toward EBacc APS
Qd1	GCSE English language	3	3	×	English	×
Qd2	GCSE Maths	5	5	✓	Maths	5
Qd3	GCSE Statistics	C	4	×	None – does not count towards EBacc	×
Qd4	GCSE Core Science	D	3	✓	Science	3
Qd5	GCSE Additional Science	E	2	✓	Science	2
Qd6	GCSE German	C	4	✓	Languages	4
Qd7	GCSE Music	C	4	×	None – does not count towards EBacc	×
Qd8	BTEC Travel and Tourism	D	3	×	None – does not count towards EBacc	×

Steven did not sit both English language and English literature, so his English score cannot be used toward his EBacc APS. Steven took GCSE Maths, which counts towards

the EBacc Maths element, so this score can be used. However, GCSE Statistics does not count towards EBacc Maths, so this score is not used.

Steven took Core and Additional Science, both grades are used towards EBacc APS. His GCSE German qualification counts towards the EBacc languages element. However, Steven did not take any humanities qualifications so scores a 0 for this element for EBacc APS. His remaining two qualifications do not count towards EBacc so cannot be included in the calculation.

Total EBacc point score = Qd2 + Qd4 + Qd5 + Qd6

= 0 (English) + 5 + (3 + 2) + 0 (Humanities)+ 4

= 14

Average EBacc point score =

$14 \div 6 = 2.33$

Calculating a school's EBacc APS score

Let us then say that Steven and Sumita are two of 200 pupils in their school's key stage 4 cohort, each assigned EBacc APS scores:

Pupil #	Pupil name	EBacc APS
1	Sumita	6.83
2	Sarah	5.42
...
200	Steven	2.33
Sum:		912.43

So the school's EBacc APS is calculated as $912.43/200 = 4.56$

Annex A – Point score scales for 2017, 2018 and 2019

This annex explains the point score scale that will be used in 2017, 2018 and 2019 performance tables.

In 2017, new GCSE qualifications in English and maths, graded 9-1, will be included in performance tables, with others to follow in 2018 and 2019. Points will be allocated to the new GCSEs on a 9-1 scale corresponding to the new grades, e.g. a grade 9 will get 9 points in the performance measures, and so on with a grade 1 getting 1 point.

We allocated performance table points to new GCSEs (9-1) in 2017 and 2018 in line with Ofqual decisions on setting standards for new GCSEs. In September 2014, Ofqual confirmed that:

- the bottom of grade 1 will be aligned with the bottom of grade G;
- broadly the same proportion of students will achieve a grade 4 and above as currently achieve a grade C and above; and
- broadly the same proportion of students will achieve a grade 7 and above as achieve an A and above.

We have reflected this in performance table points so that the same points are awarded to a grade G and a grade 1; a grade C and a grade 4; and a grade A and a grade 7. Points for other grades have been allocated between these anchor points.

This is the fairest way of reflecting achievements of pupils working at broadly the same level during this transitional period. From 2019, almost all new GCSEs (9-1) will be in place with points awarded on a linear 9-1 scale except for a very small number of less-taught languages¹⁶ which will be available in 2020.

The outcomes of Ofqual's consultation on setting grade standards for 2017 GCSE qualifications can be found here:

www.gov.uk/government/news/setting-standards-for-new-gcses-in-2017

The tables on the following pages contain the 2017, 2018 and 2019 performance tables points for a level and grade structure combination. A list of all qualifications which count at key stage 4, and their corresponding performance points is available on Gov.uk here: www.gov.uk/government/collections/school-performance-tables-about-the-data titled "**School performance: 201X point scores for KS4 qualifications**" and is updated annually to include the current year.

It is important to note that the key factor in the grade structure is the number of grades – not the names of grades. For example, a pass/merit/distinction/distinction* and a grade C/ grade B/ grade A/ grade A* structure both have four grades.

¹⁶ Gujarati, Persian, Portuguese, Turkish and Biblical Hebrew

Table A.1 New point score scales for legacy GCSEs (A*-G)¹⁷

GCSE grade	2016 Points	2017, 2018 and 2019 Points
A*	8.00	8.50
A	7.00	7.00
B	6.00	5.50
C	5.00	4.00
D	4.00	3.00
E	3.00	2.00
F	2.00	1.50
G	1.00	1.00

¹⁷ The point score scales for legacy GCSEs also apply to academic certificates/international GCSE-style qualifications (AQA, Cambridge International and Pearson Edexcel Level 1/2 certificates)

Table A.2 New point score scales for legacy double award GCSEs (A*A*-GG)

GCSE (double award) grade	2016 Points	2017 and 2018 Points
A*A*	8.00	8.50
A*A	7.50	7.75
AA	7.00	7.00
AB	6.50	6.25
BB	6.00	5.50
BC	5.50	4.75
CC	5.00	4.00
CD	4.50	3.50
DD	4.00	3.00
DE	3.50	2.50
EE	3.00	2.00
EF	2.50	1.75
FF	2.00	1.50
FG	1.50	1.25
GG	1.00	1.00

Table A.3 New point score scales for level 1 qualifications

Level 1 grade structure	Example grade	2016 Points	2017, 2018 and 2019 Points
7 grade scheme	DD	4.00	3.00
	DE	3.50	2.50
	EE	3.00	2.00
	EF	2.50	1.75
	FF	2.00	1.50
	FG	1.50	1.25
	GG	1.00	1.00
5 grade scheme	A	4.00	3.00
	B	3.25	2.25
	C	2.50	1.75
	D	1.75	1.38
	E	1.00	1.00
4 grade scheme	D	4.00	3.00
	E	3.00	2.00
	F	2.00	1.50
	G	1.00	1.00
3 grade scheme	Distinction	4.00	3.00
	Merit	3.00	2.00
	Pass	1.50	1.25
Pass only	Pass	2.50	1.75

Table A.4 New point score scales for level 2 qualifications

Level 2 grade structure	Example grade	2016 Points	2017, 2018 and 2019 Points
8 grade scheme	A*A*	8.00	8.50
	A*A	7.50	7.75
	AA	7.00	7.00
	AB	6.50	6.25
	BB	6.00	5.50
	BC	5.50	4.75
	CC	5.00	4.00
	CD	4.50	3.50
7 grade scheme	Distinction* Distinction*	8.00	8.50
	Distinction* Distinction	7.50	7.75
	Distinction Distinction	7.00	7.00
	Distinction Merit	6.50	6.25
	Merit Merit	6.00	5.50
	Merit Pass	5.50	4.75
	Pass Pass	5.00	4.00
5 grade scheme ¹⁸	A	7.00	7.00
	B	6.50	6.25
	C	6.00	5.50
	D	5.50	4.75
	E	5.00	4.00
4 grade scheme ¹⁹	A*	8.00	8.50
	A	7.00	7.00
	B	6.00	5.50
	C	5.00	4.00
3 grade scheme	Distinction	7.50	7.75
	Merit	6.50	6.25
	Pass	5.00	4.00
Pass only	Pass	6.00	5.50

¹⁸ As above.

¹⁹ AQA Level 2 Certificate in Further Maths (600/2123/8) has a five grade structure (Dist/A*/A/B/C) but the top two grades have the same mark. The marks allocated in 2016 are 8/8/7/6/5. This qualification counts for the last time in 2016.

Table A.5 New point score scales for AS levels and double AS levels

AS level grade	2016 Points	2017, 2018 and 2019 Points
A	9.50	10.75
B	8.25	8.88
C	7.00	7.00
D	5.75	5.13
E	4.50	3.50

Double AS levels grade	2016 Points	2017, 2018 and 2019 Points
AA	9.50	10.75
BA	8.88	9.82
BB	8.25	8.88
CB	7.63	7.95
CC	7.00	7.00
DC	6.38	6.07
DD	5.75	5.13
ED	5.13	4.20
EE	4.50	3.50

Table A.6 New point score scales for graded music examinations

Graded music level	Grade	2016 Points	2017, 2018 and 2019 Points
Grade 8	Distinction	8.00	8.50
	Merit	8.00	8.50
	Pass	8.00	8.50
Grade 7	Distinction	8.00	8.50
	Merit	8.00	8.50
	Pass	7.00	7.00
Grade 6	Distinction	8.00	8.50
	Merit	8.00	8.50
	Pass	7.00	7.00

Table A.7 New point score scales for free standing maths qualifications

Free standing maths qualification grade	2016 Points	2017 and 2018 Points
A	5.75	5.13
B	5.00	4.00
C	4.25	3.25
D	3.50	2.50
E	2.75	1.88

Illustrative examples of how to use these tables – points for all qualifications can be calculated following this method

Example A - Calculating the 2017 points for a Principal Learning (Level 2) qualification

These qualifications are at level 2, so table A.4 should be used.

There are 4 possible passing grades (C/B/A/A*), so the 4 grade scheme should be used. The 2017 column of Table A.4 gives points of 4, 5.5, 7 and 8.5.

The table below shows the 2017 points for a Principal Learning (Level 2) qualification.

Table A.8 New 2017 point score scales for Principal Learning (Level 2) qualifications

Principal Learning (Level 2) grade	2017 Points
A*	8.50
A	7.00
B	5.50
C	4.00

Example B - Calculating the 2017 points for a BTEC First Award

BTEC First Awards can be both level 1 and level 2 qualifications.

At level 1, there is a pass only grade structure, and the 2017 column of Table A.3 gives the points of 1.75.

At level 2 in a BTEC First Award there are 4 possible outcomes Distinction*/Distinction/Merit/Pass which makes for a 4 grade structure, and the 2017 column of Table A.4 gives the points of between 4.00 and 8.50.

The table below shows the 2017 point score scales for the BTEC First Award

Table A.9 2017 point score scales for BTEC First Award

BTEC First Award grade	2017 Points
Level 2 Distinction*	8.50
Level 2 Distinction	7.00
Level 2 Merit	5.50
Level 2 Pass	4.00
Level 1 Pass	1.75

Example C - Calculating the 2017 points for an OCR Cambridge National Certificate

OCR Cambridge National Certificates can be both level 1 and level 2 qualifications.

Grades level 1 distinction/ level 1 merit/ level 1 pass are at level 1, which makes for a 3 grade structure, and the 2017 column of Table A.3 gives the points of between 1.25 and 3.

Grades level 2 distinction*/ level 2 distinction/ level 2 merit/ level 2 pass are at level 2, which makes for a 4 grade structure, and the 2017 column of Table A.4 gives the points of between 4 and 8.5.

The table below shows the new 2017 point scores for the OCR Cambridge National Certificate

Table A.10 New 2017 point score scales for OCR Cambridge National Certificate

OCR Cambridge National Certificate grade	2017 Points
Level 2 Distinction*	8.50
Level 2 Distinction	7.00
Level 2 Merit	5.50
Level 2 Pass	4.00
Level 1 Distinction	3.00
Level 1 Merit	2.00
Level 1 Pass	1.25

Point scores for other qualifications can be calculated using a similar method as in examples A, B and C above.

Annex B – Provisional 2017 Attainment 8 averages

Each Attainment 8 average is the average Attainment 8 score of all pupils nationally with the same prior attainment at key stage 2. The following table shows the provisional Attainment 8 averages (sometimes also called provisional Attainment 8 estimates) for each key stage 2 average fine level, based on the provisional 2017 cohort averages.

Changes to national subject entry patterns, point values for GCSE and other qualifications, changes to key stage 2 assessments and performance will cause these estimates to change in future years, as they will be derived from averages from later cohorts. As such they should be treated with caution if extrapolating to cohorts beyond 2017.

Table B.1 Provisional 2017 Attainment 8 average for each KS2 fine level

Key stage 2 fine level	Attainment 8 average	English average	Maths average	EBacc average	Open average
1.5	12.89	2.75	1.75	3.05	5.34
2	16.81	3.66	2.37	3.87	6.91
2.5	17.91	4.24	2.37	3.92	7.38
2.8	19.39	4.62	2.70	4.09	7.98
2.9	20.63	4.78	3.12	4.45	8.28
3	21.13	4.95	3.16	4.58	8.44
3.1	22.21	5.16	3.54	4.89	8.61
3.2	23.45	5.41	3.82	5.21	9.02
3.3	23.63	5.48	3.76	5.28	9.12
3.4	25.06	5.78	4.13	5.68	9.48
3.5	25.47	5.90	4.19	5.78	9.59
3.6	26.74	6.18	4.46	6.14	9.96
3.7	27.58	6.33	4.61	6.39	10.24
3.8	28.34	6.55	4.76	6.60	10.43
3.9	29.68	6.83	5.06	7.02	10.77
4	31.03	7.11	5.39	7.40	11.13
4.1	32.21	7.34	5.68	7.76	11.42
4.2	33.85	7.66	6.06	8.23	11.90
4.3	35.27	7.90	6.43	8.73	12.21
4.4	37.02	8.24	6.85	9.27	12.66
4.5	38.70	8.56	7.24	9.80	13.10
4.6	40.64	8.99	7.63	10.43	13.59
4.7	42.61	9.35	8.08	11.11	14.07
4.8	44.82	9.82	8.53	11.84	14.63
4.9	46.95	10.20	9.03	12.56	15.16
5	49.48	10.66	9.59	13.46	15.77
5.1	52.23	11.18	10.19	14.40	16.46
5.2	54.96	11.66	10.85	15.36	17.09
5.3	57.67	12.09	11.56	16.32	17.70
5.4	60.84	12.61	12.34	17.41	18.47

Key stage 2 fine level	Attainment 8 average	English average	Maths average	EBacc average	Open average
5.5	64.05	13.14	13.14	18.57	19.20
5.6	67.88	13.82	14.00	19.90	20.16
5.7	71.94	14.52	14.90	21.32	21.20
5.8	76.94	15.46	15.92	22.92	22.64

Source: 2016/17 key stage 4 attainment data

- pupils with mean key stage 2 fine grade score of ≤ 1.5 are assigned a key stage 2 score of 1.5
- pupils with mean key stage 2 fine grade score between 1.6 and 2.0 are assigned a key stage 2 score of 2.0
- pupils with mean key stage 2 fine grade score between 2.1 and 2.5 are assigned a key stage 2 score of 2.5
- pupils with mean key stage 2 fine grade score between 2.6 and 2.8 are assigned a key stage 2 score of 2.8
- pupils with mean key stage 2 fine grade score of ≥ 5.8 are assigned a key stage 2 score of 5.8

Annex C – Key stage 2 results used to calculate prior attainment

From 2017 onwards, reading and maths test results only will be used in calculating key stage 2 prior attainment fine levels for use in progress 8. This is because since 2012 primary schools have used a form of teacher assessment in writing at key stage 2 that does not map easily to test scores.

NB: Level 6 tests taken by pupils completing key stage 2 from 2012 onwards (who will reach the end of key stage 4 in 2017 and beyond) will not be used in the calculation of the fine level used as prior attainment in Progress 8, as the use of these tests varies between schools.

Adjustments are made for pupils with incomplete test results:

- if a pupil does not have a test result in a subject then their teacher assessment level is used (see table below)
- if a pupil has a result missing in one subject, then prior attainment is calculated from the remaining subject
- if a pupil does not have a test score or teacher assessment result in any subject then they are excluded from the measure

Key stage 2 fine grades will be the prior attainment result that will be used to estimate a pupil's Attainment 8 score. They are based on the marks that pupils achieved in their end of key stage 2 assessment. Fine grades use the underlying marks data to create a finer measure.

The following set of rules is used to convert test marks to fine grades for reading and maths. These rules also take into account situations where a pupil's assigned level for their reading or maths test is not consistent with the mark they receive for example where a pupil was ill during the test.

- If test level = 3, 4 or 5 then:
 - If main test mark exists and is consistent with level, then:

$$\text{Fine Grade} = \left(\text{Basic level} + \frac{\text{actual test mark} - \text{bottom of level threshold}}{\text{top of level threshold} - \text{bottom of level threshold} + 1} \right)$$

- If main test mark exists and is **not** consistent with level:
 - If the level is higher than the mark then:
Fine Grade = Test level (3.0, 4.0 or 5.0).
 - If the level is lower than the mark then the fine grade is obtained from the maximum mark in that level, using:

$$\text{Fine Grade} = \frac{\text{top of level threshold} - \text{bottom of level threshold}}{\text{top of level threshold} - \text{bottom of level threshold} + 1} + \text{basic level}$$

- If test level = 2 and TA is 3+ then:
- If main test mark exists and is consistent with level, then the difference in fine grade of one mark is extended from level 3 range.

$$\text{Fine Grade} = 3.0 - \left\{ \frac{\text{min lev 3 mark} - \text{mark}}{\text{max lev 3 mark} - \text{min lev 3 mark} + 1} \right\}$$

- If main test mark does not exist, then we assign the pupil the middle mark of the compensatory level 2 range. If the main test mark is lower than the minimum mark for the compensatory level 2 range then we assign the minimum mark of the compensatory level 2 range and if the main test mark is higher than the minimum mark for the compensatory level 2 range then we assign the maximum of the compensatory level 2 range. Then we apply the above algorithm.

If test level =		
3-5	Use pupil's fine points score	
2	If teacher assessment available, use;	Award: W = 0.5 Level 1 = 1.5 Level 2 = 2.5 Any higher = use formula as given on page 22 A,D,F,L,P,W,Z = Exclude pupil
	If no teacher assessment available	Exclude Pupil
B, N	If teacher assessment available, use;	Award: W = 0.5 Level 1 = 1.5 Level 2 = 2.5 Any higher = 2.5 (capped) A,D,F,L,P,Z = Exclude pupil
	If no teacher assessment available	Exclude Pupil
A, F, L, M, P, Q, S, T, W, X	If teacher assessment available, use;	Award: W = 0.5 Level 1 = 1.5 Level 2 = 2.5 Level 3 = 3.5 Level 4 = 4.5 Level 5 = 5.5 Any higher = 5.5 (capped) A,D,F,L,P,Z = Exclude pupil
	If no teacher assessment available	Exclude Pupil

Annex D – Confidence Intervals

A 95% confidence interval will be calculated around each school Progress 8 score, providing a proxy for the range of values within which we are statistically confident that the true value of the Progress 8 score for the school lies.

The confidence interval, denoted $[LowCI_s, UppCI_s]$, is given by the formula:

$$[LowCI_s, UppCI_s] = [P8_s - CI_s, P8_s + CI_s],$$

where:

$LowCI_s$	is the lower confidence limit for the school's Progress 8 score
$UppCI_s$	is the upper confidence limit for the school's Progress 8 score
$P8_s$	is the school's Progress 8 score
CI_s	is the size of the confidence interval for the school's Progress 8 score

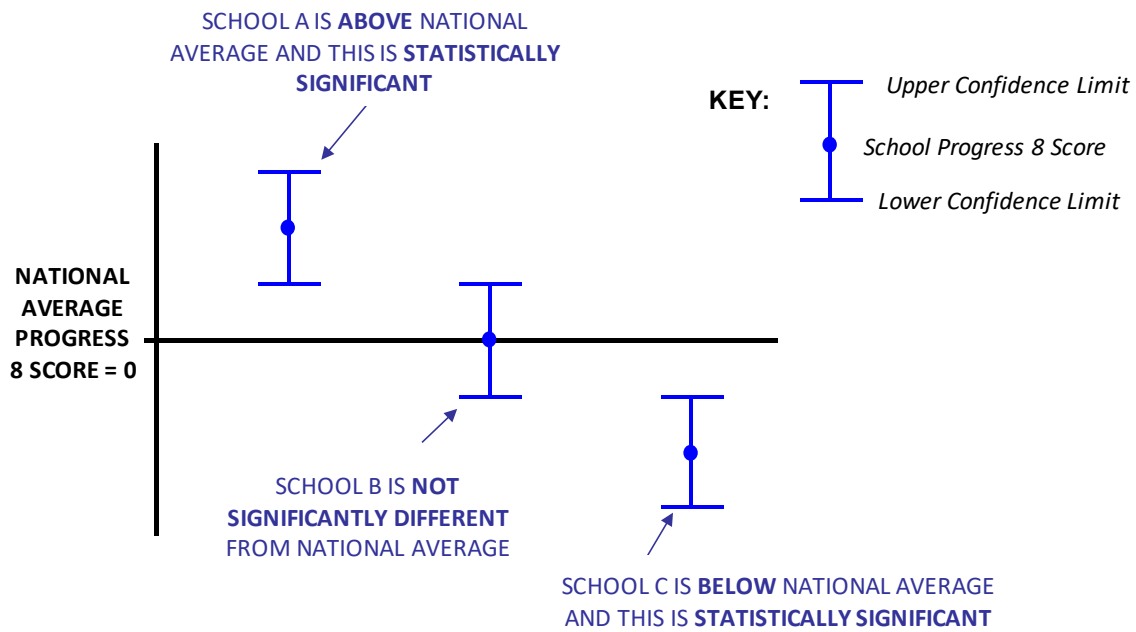
$$CI_s = 1.96 \times \frac{\sigma_N}{\sqrt{n_s}}$$

where:

1.96	is the critical value for a 95% confidence interval;
σ_N	is the standard deviation of the Progress 8 scores for all eligible pupils <u>nationally</u> ;
n_s	is the number of eligible pupils that belong to the school

The national average Progress 8 score of all pupils at maintained mainstream school scores will be 0.

- when a school has their lower confidence interval limit higher than zero ($LowCI_s > 0$), the school's Progress 8 score is above average and the result is statistically significant
- when a school has their upper confidence interval limit lower than zero ($UppCI_s < 0$), the school's Progress 8 score is below average and the result is statistically significant
- in the other case when the confidence interval straddles zero ($LowCI_s < 0 < UppCI_s$), the school's Progress 8 score is likely to be above or below average, and the result is not statistically significant



Worked example A – continued

We can calculate the size of the confidence interval for the school's Progress 8 score using CI_s :

$$CI_s = 1.96 \times \frac{\sigma_N}{\sqrt{n_s}} = 1.96 \times \frac{1.2394}{\sqrt{142}} = 1.96 \times 0.104 = 0.20$$

We derive the confidence interval for the school's Progress 8 score:

$$= [+0.26 - 0.20, +0.26 + 0.20] = [+0.06, +0.46]$$

As $LowCI_s > 0$, we can say that the school's Progress 8 score is above the national average Progress 8 score, and say this result is statistically significant.

Standard deviation of all Progress 8 scores and Progress 8 element scores nationally

The below standard deviations are based on the Progress 8 scores of all eligible pupils at mainstream schools and are the national figures used in confidence interval calculations.

Table B 2: 2015, 2016 and 2017 standard deviations of Progress 8 and Progress 8 element scores nationally

Measure	Revised 2015	Revised 2016	Provisional 2017
Progress 8	1.0896	1.0605	1.239408
Progress 8 English element	1.1309	1.1248	1.553384
Progress 8 maths element	1.2501	1.2348	1.40513
Progress 8 EBacc element	1.5819	1.3841	1.454285
Progress 8 Open element	1.2502	1.2300	1.442336

Source: 2014/15, 2015/16 & 2016/17 key stage 4 attainment data

Annex E – English in the headline performance measures

Headline Performance Measure	English Requirement
Progress 8 and Attainment 8	If a student sits both English language and English literature, the higher grade is double-weighted. The lower grade can count in the 'open' element of these measures. If only GCSE English literature or English language is taken then this qualification will count, but will not be double-weighted.
English Baccalaureate (% of pupils in a school achieving the EBacc at a grade 5 or above in English and maths, and a grade C or above in other subjects)	A pupil must take exams in both English language and English literature, and achieve a grade 5 or above.
English and maths at a grade 5 or above	A pupil would have to achieve a grade 5 or above in either English literature or English language. There is no requirement to sit both.

In 2017 the only qualifications which will count as English in the performance tables are the new GCSEs (9-1) and AS levels.

For the measures of the percentage of pupils achieving the EBacc and the English and maths measure, the Department is also publishing as additional measures the percentage of pupils achieving a grade 4 or above in English and maths, and the percentage of pupils achieving the English Baccalaureate at a grade 4 or above in English and maths, and at a grade C or above in other subjects.

Annex F – Timeline for new GCSEs

In 2017 the only GCSEs which will count in these subjects will be the new GCSEs graded 9-1:

New GCSEs
English literature
English language
Maths

In 2018 the only GCSEs which will count in these subjects will be the new GCSEs, graded 9-1:

EBacc Subjects	Other subjects
Biology	Art and design
Chemistry	Citizenship studies
Classical Greek	Dance
Combined science (Double award)	Drama
Computer Science	Food preparation and nutrition
French	Music
Geography	Physical education
German	Religious studies
History	
Latin	
Physics	
Spanish	

In 2019 the only GCSEs which will count in these subjects will be the new GCSEs graded 9-1:

EBacc Subjects	Other subjects
Ancient History	Astronomy
Arabic	Business

EBacc Subjects	Other subjects
Bengali	Classical civilisation
Chinese	Design and technology
Italian	Economics
Japanese	Electronics
Modern Greek	Engineering
Modern Hebrew	Film studies
Panjabi	Geology
Polish	Media studies
Russian	Psychology
Urdu	Sociology
	Statistics

Please note that no legacy GCSEs (A*-G), International GCSEs or level 1/level 2 certificates in these subjects will count in performance tables as new GCSEs are introduced.

Annex G – Other additional measures for 2017

As outlined in the 2017 performance tables statement of intent, some additional measures will also be published for the first time from 2017. These are outlined in the box below.

Additional measures for 2017	Methodology
<p>The proportion of pupils achieving a grade 4 or above in English and maths</p>	<p>For transparency and to help schools show progress, the headline threshold attainment measures will also be published at grade 4. These measures will have the same methodology as their headline counterparts regarding qualification inclusion and requirements; however the additional measures will show where pupils achieved a grade 4 or above in reformed 9-1 GCSEs in English language, English literature and maths.</p>
<p>The proportion of pupils at a school achieving the EBacc at a grade 4 or above in English and maths, and at a grade C or above in other subjects</p>	
<p>Average number of EBacc slots filled in Attainment 8 at school level</p>	<p>To help schools understand their EBacc entry rates in more detail, the number of EBacc slots filled per pupil within a school divided by the total number of pupils at the end of key stage 4 within the school. The number of EBacc slots filled per pupil is calculated according to Attainment 8 methodology outlined earlier in the guidance.</p>
<p>Average number of open slots filled in Attainment 8 at school level</p>	<p>The number of Open slots filled per pupil within a school divided by the total number of pupils at the end of key stage 4 within the school. The number of Open slots filled per pupil is calculated according to Attainment 8 methodology outlined earlier in the guidance.</p>
<p>Pupils achieving 5 or more GCSEs at grade 4/C or above including English and maths</p>	<p>The grade changes in 2017 mean it is no longer possible to calculate the previous headline measure, 5 A*-C including English and maths, and this measure will therefore not appear in the performance tables. Data for this new measure will be made available in the download data file on the school performance tables website.</p> <p>This measure will be calculated as per 5 A*-C including English and maths in 2016 with the below differences:</p>

Additional measures for 2017	Methodology
	<ul style="list-style-type: none"> • The attainment threshold will be set to include those who achieve a grade 4 or above in reformed GCSEs in English language, English literature and Maths and a C in legacy GCSEs. • The English requirement will now mirror the standard pass in English and maths measure – a pupil would have to achieve a grade 4 or above in English literature or English language. There is no requirement to sit both. <p>To note, this additional measure is published for transparency and is no longer a headline measure or used for school accountability purposes. When considering attainment at KS4, the 2017 headline measures should be used.</p>



Department
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