



Department
for Education

Primary school accountability in 2016

**A technical guide for primary maintained
schools, academies and free schools**

January 2017

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Summary

About this guidance

In March 2014, we announced that a new primary school accountability system would be implemented from 2016¹.

We have reformed primary accountability to allow better recognition of schools doing well with a challenging intake, and to challenge those that are not doing enough with a high-attaining intake. We want to be able to recognise better the progress that schools make with their pupils, including low, middle and high attainers.

Reforms to primary accountability from 2016 include:

- new headline attainment and progress performance measures; and
- a new floor standard.

We have also reformed [primary assessment](#). This includes a new 'expected standard' (a higher standard than in 2015), along with new national curriculum tests in English reading and mathematics, with outcomes reported as scaled scores ranging from 80 to 120, rather than levels. There are also new interim frameworks for teacher assessment, including pre-key stage standards for pupils who have not completed the relevant programme of study.

This guide explains more about the primary accountability measures for 2016 including how a school's progress scores are calculated.

Schools receive their own provisional progress scores from 1 September. Annex B of this guidance provides the provisional national distribution of schools' progress scores to help schools interpret and contextualise their own provisional scores.

No school will be confirmed as being below the floor until December 2016 when schools' performance tables are published. Further statistical information on primary progress scores, including the number and percentage of schools below the floor in 2016, will be available on GOV.UK when revised data is published from December 2016.

¹ This means the measures will first be applied to the 2016 performance tables, which are based on results from academic year 2015/16, and will be published in December 2016.

In 2016, the assessments used to measure the progress that schools help their pupils between key stage 1 and key stage 2 are:

- key stage 1 results in English reading, English writing and mathematics teacher assessments, that took place in summer 2012 when the 2016 Year 6 cohort were aged 7; and
- key stage 2 results in English reading and mathematics tests, reported as scaled scores, and the English writing teacher assessments that took place in summer 2016.

Expiry or review date

This guide will next be reviewed before April 2017, in relation to primary accountability for 2017.

Who is this guidance for?

This guide is for:

- school leaders, school staff and governing bodies in all primary schools, including maintained schools, academies, free schools and special schools;
- local authorities; and
- multi-academy trusts (MATs).

Primary school accountability measures

There will continue to be a range of forms of accountability in place for primary schools; including published data, floor standards and school inspection.

2016 performance tables

The headline measures, which will appear in the performance tables in December 2016, will include attainment and progress measures. These will be:

- the percentage of pupils achieving the 'expected standard' in English reading, English writing and mathematics at the end of key stage 2
- the pupils' average scaled score:
 - in English reading at the end of key stage 2
 - in mathematics at the end of key stage 2
- the percentage of pupils who achieve at a higher standard in English reading, English writing and mathematics
- the pupils' average progress:
 - in English reading
 - in English writing
 - in mathematics

The percentage of pupils achieving the expected standard is a combined measure across the three subjects. To be counted towards the measure, a pupil must have a scaled score of **100 or more** in reading **and** a scaled score of 100 or more in mathematics; **and** have been teacher assessed in writing as 'working at the expected standard' or 'working at a greater depth in the expected standard'.

The percentage of pupils achieving at a higher standard is also a combined measure across the three subjects. To be counted towards the measure, a pupil must have a 'high scaled score' of **110 or more** in reading **and** mathematics; **and** have been teacher assessed in writing as 'working at a greater depth within the expected standard'.

Unlike the expected standard, which was determined by the Standard and Testing Agency's standard setting teacher panel, the high score was determined solely with reference to the distribution of pupils' test results to identify the pupils who achieved a high mark on the 2016 tests.

In addition to the headline measures described above, the performance tables include a range of additional measures, which cover attainment and progress in individual subjects

and for various pupil groups. We will, for example, show the percentage of pupils gaining the expected standard in English grammar, punctuation and spelling. Further details about what will be included in the performance tables are in the Statement of Intent, which is available on the [DfE schools performance tables website](#).

The ‘expected progress’ measure

The system of national curriculum levels is no longer used by the government to report end of key stage assessment. The previous ‘expected progress’ measure, based on pupils making at least two levels of progress between key stage 1 and key stage 2, is no longer produced and will not appear in the performance tables or RAISEonline in 2016.

This measure has been replaced by a value-added measure. There is no ‘target’ for the amount of progress an individual pupil is expected to make. Any amount of progress a pupil makes contributes towards the school’s progress score.

Floor standard

The floor standard is the minimum standard for pupil attainment and / or progress that the government expects schools to meet.

No school will be confirmed as being below the floor until December 2016 when schools’ performance tables are published.

In 2016, a school will be above the floor if:

- at least 65% of pupils meet the expected standard in English reading, English writing and mathematics; **or**
- the school achieves sufficient progress scores² in **all three** subjects. At least -5 in English reading, -5 in mathematics and -7 in English writing³.

To be above the floor, the school needs to meet either the attainment **or** all of the progress element.

The attainment element is a combined measure. This means an individual pupil needs to meet the ‘expected standard’ in English reading, English writing and mathematics, in order to be counted towards the attainment element.

² The performance tables publish progress data to 1 decimal place and the definition of floor standards and coasting schools are defined to this level of accuracy

³ If the school has one progress score that is less than sufficient in one subject, the school will only be below the floor if the progress score for that subject is significantly below average - the upper band of its confidence interval is below zero

To meet the progress element a school needs to have sufficient progress scores in English reading, and English writing, and mathematics. There is no measure of 'sufficient progress' for individual pupils.

Examples of schools above and below the floor are detailed below.

- School A - 70% of pupils meet the 'expected standard'. School A is above the floor.
- School B - 61% of pupils meet the 'expected standard', but the school has a progress score of -4.2 in English reading and -4.5 in English writing and -3.1 mathematics. School B is above the floor.
- School C - 61% of pupils meet the 'expected standard' and the school has a progress score of -4.2 in English reading and -4.5 in English writing, but has a progress score of -6.0 mathematics. School C is below the floor.

As 2016 was the first year of new accountability measures and new tests, we needed to wait until tests had been taken so we knew how pupils had done and we could consequently set minimum expectations for a school's progress scores.

School types and particular circumstances

As in previous years, there are some types of schools and particular circumstances in which floor standards do not apply.

Floor standards do **not** apply to infant schools, special schools, independent schools, pupil referral units, alternative provision or hospital schools.

Schools are also to be excluded from the floor standards where:

- there are fewer than 11 eligible pupils in their Year 6 cohort; or
- fewer than 50% of pupils have key stage 1 assessments that can be used to establish which prior attainment grouping the pupil should be allocated to.
- there is not sufficient key stage 2 attainment information to produce progress scores because there are fewer than 6 pupils with key stage 2 results for a particular subject.

Closed schools, including those which close during the 2015 to 2016 academic year and reopen as a sponsored academy⁴, are also excluded from the 2016 floor standards. This means that a school that becomes a sponsored academy during this period is not subject to the floor standard, until it has been open as the new school for at least one full academic year.

Coasting schools definition

The Education and Adoption Act 2016 allows the Department to identify, support and take action in coasting schools for the first time. These are schools where, over time, pupils do not fulfil their potential.

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. This year a primary school will fall within the coasting definition if:

- In 2014 fewer than 85% of pupils achieved level 4 in English reading, English Writing and mathematics and below the national median percentage of pupils achieved expected progress in all of English reading, English writing and mathematics;
- In 2015 fewer than 85% of pupils achieved level 4 in English reading, English Writing and mathematics and below the national median percentage of pupils achieved expected progress in all of English reading, English writing and mathematics,
- In 2016 fewer than 85% of pupils achieve the expected standard at the end of primary schools and average progress made by pupils is less than -2.5 in English reading, -2.5 in mathematics or -3.5 in English writing

A school will have to be below the relevant coasting threshold in all three years to fall within the overall coasting definition. Schools will be excluded from the coasting measure in 2016 if:

- they have fewer than 11 pupils at the end of key stage 2; or
- fewer than 50% of pupils have key stage 1 assessments that can be used to establish which prior attainment grouping the pupil should be allocated to; or

⁴ Schools which have become converter academies during the 2015 to 2016 academic year are treated as continuing schools and are included in the floor standard calculations.

⁵ <http://www.legislation.gov.uk/id/ukSI/2017/9>

- there is not sufficient key stage 2 attainment information to produce progress scores because there are fewer than 6 pupils with key stage 2 results for a particular subject; or
- the school closes within the academic year⁶.

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.

The coasting definition will apply to all mainstream maintained schools and academies with the relevant key stage 2 data. It will not apply to PRUs, special schools, alternative provision academies or maintained nursery schools.

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 guidance⁷.

⁶ Except if it reopens as a converter academy. 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.

⁷ <https://www.gov.uk/government/publications/schools-causing-concern>

Calculating a school's progress scores

Overview of the progress measures

The new progress measures aim to capture the progress that pupils make from the end of key stage 1 to the end of primary school. They are a type of value added measure, which means that pupils' results are compared to the actual achievements of other pupils nationally with similar prior attainment.

This type of progress measure rewards schools for making progress with all of their pupils, whether they are low, middle or high attainers. Any increase in attainment achieved by each pupil will be reflected in the school's progress scores.

This new measure is a school-level accountability measure. **Progress is calculated for individual pupils solely in order to calculate the school's overall progress scores.** There is no need for schools to share individual pupil progress scores with their pupils or parents.

Schools should continue to focus on improving the attainment of all their pupils and report on their attainment and progress to parents, as specified in the Assessment and Reporting Arrangements for [key stage 1](#) and [key stage 2](#). For more information, including on assessment without levels, see the [Standard and Testing Agency's](#) pages on GOV.UK.

A school's progress scores in English reading, English writing and mathematics are calculated as the average of its pupils' subject progress scores. These scores give an indication of whether, as a group, pupils in the school made above or below average progress in a subject compared with pupils with similar starting points in other schools.

The school level scores are used to judge whether a school has met the progress element of the floor standard. Further detail is on page 6.

Calculating an individual pupil's progress scores

Progress scores are calculated for individual pupils for the sole purpose of constructing a school progress score. Pupil scores are calculated separately for English reading, English writing and mathematics.

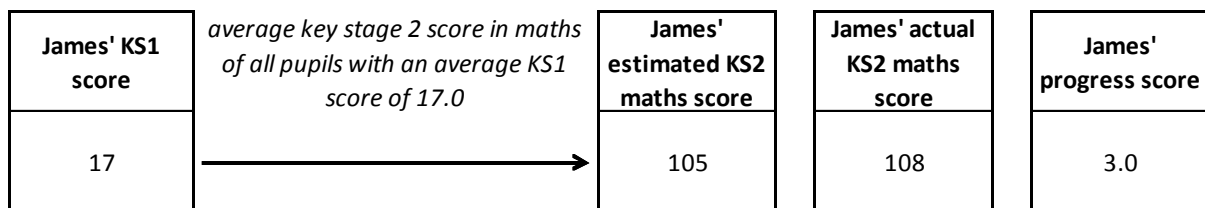
The first step is to assign pupils into groups with other pupils nationally, who had similar starting points (key stage 1 achievement, see page 15).

The second step is to work out the average key stage 2 score for each prior attainment group. This is worked out as the mean average of the actual key stage 2 scores of all the pupils in the prior attainment group.

Finally, a pupil's progress score is calculated. This is by working out the difference between their actual key stage 2 outcome and the average key stage 2 outcome for the other pupils nationally, who are in the same prior attainment group.

Below is an example using data from this years progress calculations:

- James has an average key stage 1 score of 17.0, which means he is in prior attainment group 16 (for further explanation of prior attainment groups please see page 23)
- his result in the key stage 2 mathematics test is a scaled score of 108
- the national average scaled score in mathematics for pupils with an average key stage 1 score of 17 is 105
- James, therefore, has a mathematics progress score of +3.0



In this example, James has met the 'expected standard' (a scaled score of 100 or more). He has done better than other pupils with the same key stage 1 attainment and, therefore, has a positive progress score. This will not necessarily be the case for all pupils.

Some pupils will meet the 'expected standard', but will make less progress compared to other pupils in their prior attainment group.

Other pupils will fail to meet the 'expected standard', but will make more progress than the other pupils in their prior attainment group.

Calculating a school's progress scores

A school's progress score, for a subject, is the mean average of its pupils' progress scores in that subject.

For example,

James is one of 60 pupils in his school's key stage 2 cohort. These pupils have mathematics progress scores as follows:

| Pupil # | Pupil name | Mathematics Progress score |
|------------|------------|----------------------------|
| 1 | James | +3.0 |
| 2 | Chloe | +1.2 |
| ... | | |
| 59 | Ebony | -6.5 |
| 60 | Harry | -1.9 |
| Sum | | +132.4 |

The school's mathematics progress score will be $132.4 / 60 = +2.2$

This process is then repeated for each subject.

Schools are then allocated three progress scores:

- one for English reading
- one for English writing⁸
- one for mathematics

⁸ See page 19 for an explanation of how we calculate writing progress scores.

Allocating points scores

Key stage 1 prior attainment groupings

To calculate progress scores, pupils are allocated into prior attainment groupings with all other pupils nationally with similar key stage 1 attainment.

In 2016, pupils' prior attainment was based on their teacher assessments at the end of key stage 1. These assessments took place in 2012 and were reported in levels. Individual key stage 1 subject teacher assessments were converted into points as outlined in the table below.

| Key stage 1 point scores for all subjects | |
|---|-------------------------------|
| National curriculum teacher assessment level | Point score equivalent |
| Level 4 | 27 |
| Level 3 | 21 |
| Level 2A | 17 |
| Level 2B or undifferentiated Level 2 | 15 |
| Level 2C | 13 |
| Level 1 | 9 |
| W – Working towards Level 1 | See the next section |
| M – Missing | Disregard |
| D – Disapplied | Disregard |
| A – Absent | Disregard |

A pupil's key stage 1 point scores for English reading, English writing and mathematics is then combined to give them a key stage 1 average point score (APS).

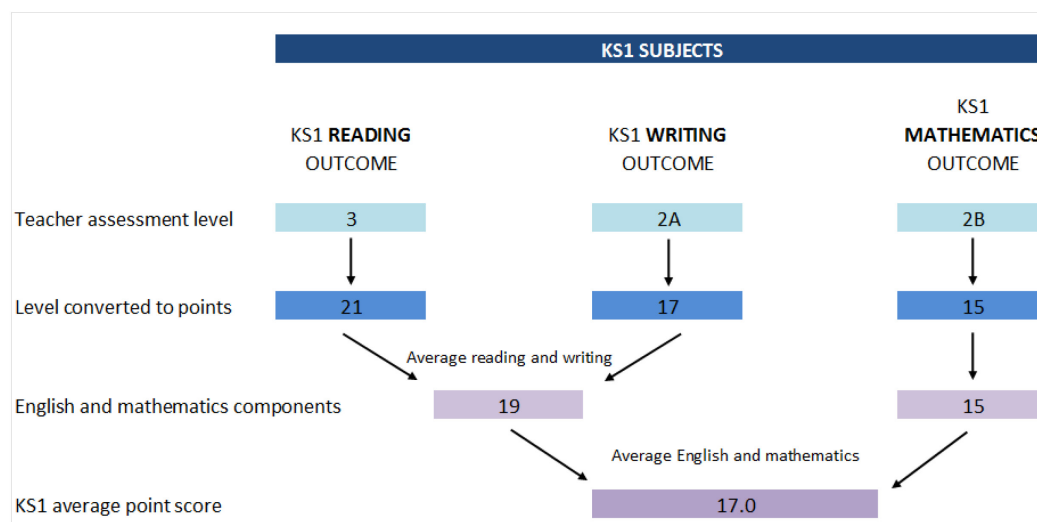
The average point score is weighted 50:50 for English and mathematics, as this provides a strong correlation to key stage 2 results in all three subjects – English reading, English writing and mathematics.

This is done by working out an average score for English (reading and writing) and giving this equal weight alongside mathematics.

Worked example

James' key stage 1 assessment results were Level 3, Level 2A and Level 2B in English reading, English writing and mathematics respectively.

The diagram below sets out how these are converted into an average point score for James.



Pupils stay in the same prior attainment group, which is based on their average point score at key stage 1, when we calculate their separate progress scores in English reading, English writing and mathematics.

Pupils working below level 1 at KS1

Like we do with all other pupils, we allocate points to pupils working below level 1 at KS1. To recognise differences in the abilities of these pupils, we determine different points for those pupils working below level 1 at KS1 as below:

| Key stage 1 point scores for pupils below level 1 for all subjects | |
|--|------------------------|
| Teacher assessment | Point score equivalent |
| W – Working towards L1, but not on P scales | 3 |
| P8 | 2.75 |
| P7 | 2.5 |
| P6 | 2.25 |
| P5 | 2.0 |
| P4 | 1.75 |
| P3ii | 1.5 |
| P3i | 1.25 |
| P2ii | 1.0 |

| | |
|------|------|
| P2i | 0.75 |
| P1ii | 0.50 |
| P1i | 0.25 |

The following will apply to the way we allocate these points to each subject.

English reading and writing

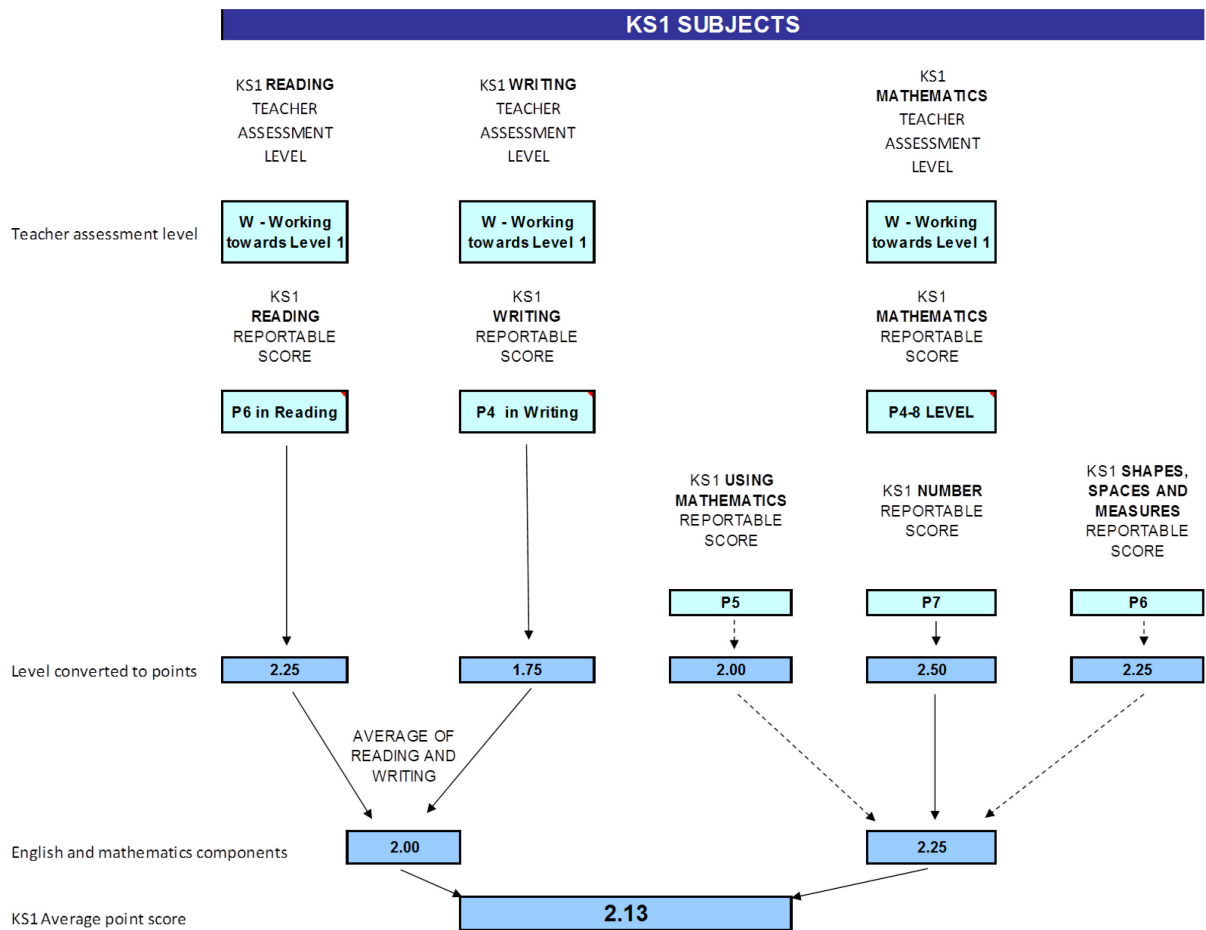
- If a pupil is teacher assessed as working towards level 1 (W), but has P4-P8 in reading the P scaled score is used as the points score.
- If a pupil does not have P4-P8 in reading, but has P1-3 in English this is used as the points score.
- If a pupil is teacher assessed as working towards level 1, but does not have P4-8 in reading or P1-3 in English, then they are given three points.
- As above for writing

Mathematics

- If a pupil is teacher assessed as working towards level 1 (W), but has P4-8 in use of mathematics, numbers and shapes, an average is taken.
- If a pupil does not have P4-8 in mathematics, numbers and shapes, but does have P1-3 in mathematics then the P scaled score is used as the points score.
- If a pupil is teacher assessed as working towards level 1, but does not have P4-8 in use of mathematics, numbers and shapes or P1-3 in mathematics, then they are given three points.

Allocating points to pupils below the level of the test in this way means that when we calculate prior attainment groups, there are broadly three P scale assessment groups that cover those who average broadly at the equivalent of P1-6, P7 and P8. This has been done to keep pupils with similar prior attainment together, allowing like-for-like comparisons to be made of their progress whilst keeping group sizes large enough to ensure national averages are robust.

Worked example



Prior attainment groups

This process described above created 21 prior attainment groups that pupils have been allocated to depending on their key stage 1 results.

Schools can use the table below to see which prior attainment group a pupil will have been allocated to depending on their key stage 1 average point score and what the national KS2 averages for each of these groups was in 2016 by subject. As described earlier in this guide, a pupil's progress score is the difference between their own key stage 2 result and the national average KS2 result for their prior attainment group.

| Prior Attainment Group (PAG) | KS1 average points score | Average KS2 Reading Score for PAG | Average KS2 Writing Score for PAG | Average KS2 Maths Score for PAG |
|------------------------------|--------------------------|-----------------------------------|-----------------------------------|---------------------------------|
| 1 | >0 to <2.5 | 77.44 | 77.37 | 78.18 |
| 2 | >=2.5 to <2.75 | 80.66 | 80.17 | 81.47 |
| 3 | >=2.75 to <3 | 82.79 | 82.25 | 84.14 |
| 4 | >=3 to <6 | 85.29 | 84.04 | 87.44 |
| 5 | >=6 to <9 | 87.54 | 86.01 | 90.00 |
| 6 | >=9 to <10 | 90.57 | 89.16 | 92.07 |
| 7 | >=10 to <12 | 93.89 | 92.62 | 95.54 |
| 8 | >=12 to <13 | 95.73 | 94.24 | 97.69 |
| 9 | >=13 to <14 | 97.25 | 96.71 | 98.34 |
| 10 | >=14 to <14.5 | 98.38 | 98.23 | 99.77 |
| 11 | >=14.5 to <15 | 99.77 | 99.25 | 100.67 |
| 12 | >=15 to <15.5 | 100.63 | 100.76 | 101.51 |
| 13 | >=15.5 to <16 | 102.46 | 101.68 | 102.14 |
| 14 | >=16 to <16.5 | 102.61 | 102.08 | 103.58 |
| 15 | >=16.5 to <17 | 104.14 | 102.80 | 104.50 |
| 16 | >=17 to <18 | 105.56 | 104.11 | 104.97 |

| Prior Attainment Group (PAG) | KS1 average points score | Average KS2 Reading Score for PAG | Average KS2 Writing Score for PAG | Average KS2 Maths Score for PAG |
|-------------------------------------|---------------------------------|--|--|--|
| 17 | >=18 to <19 | 106.82 | 104.77 | 106.33 |
| 18 | >=19 to <20 | 107.97 | 105.79 | 107.54 |
| 19 | >=20 to <21 | 109.05 | 106.14 | 109.41 |
| 20 | >=21 to <21.5 | 111.58 | 108.71 | 110.57 |
| 21 | >= 21.5 | 115.70 | 110.46 | 114.51 |

Key stage 2 points scores

English reading and mathematics tests

For English reading and mathematics, key stage 2 test results have been reported as scaled scores, with 100 as the 'expected standard'. The scaled scores for each subject is used as the pupil's key stage 2 outcome in the progress score calculation.

English writing teacher assessment

In 2016, as in previous years, key stage 2 English writing results were reported as teacher assessments. Most pupils were assessed against the interim framework for teacher assessment, which puts pupils into one of three categories: working towards the expected standard, working at the expected standard and working at a greater depth within the expected standard.

For the purpose of calculating writing progress scores **only** pupils were allocated points for each of the teacher assessment outcomes. Pupils still receive their teacher assessment as their key stage 2 outcome and no pupil will receive our point score as their key stage 2 outcome. The points that were allocated to each teacher assessment category are detailed below:

| Teacher assessed writing categories | Points (within the scaled score range) |
|---|--|
| Working towards the standard | 91 |
| Working at the expected standard | 103 |
| Working at a greater depth within the expected standard | 113 |

The same point score is attached to all pupils in the same category. This is because there are only three categories of teacher assessment for those at the standard of the key stage 2 interim framework and it was therefore not possible to differentiate between pupils within each category. This means, for example, that all pupils working at the expected standard were given 103 points.

The points for English writing have been guided by outcomes on the key stage 2 English reading and mathematics tests, and performance in English writing. The points were determined by considering the percentage of pupils achieving each category of English

writing teacher assessment, identifying the corresponding percentages of pupils on the English reading and mathematics tests and finding the mean scaled score for each group, in order to determine the number most likely to be the best reflection of a typical pupil's performance in English writing.

This method means that the writing points are based on available information which aligns with pupil's performance in 2016 (performance in English reading and mathematics).

Pupils below the standard of the test or assessment

As in previous years, a small percentage of the key stage 2 pupil population did not complete the relevant key stage 2 programme of study. These pupils were categorised as working below the standard of both the national curriculum tests and the interim teacher assessment framework for the particular subject. The majority of these pupils were assessed against the interim pre-key stage standards in English reading, English writing and mathematics at key stage 2 as recommended by the [Rochford Review](#).

It is important that schools are held to account and given recognition for the progress made by all of their pupils. Therefore, in order to include pupils working below the standard of the test in the progress measures points were assigned to each of the four teacher assessment categories that are applicable to pupils below the standard of the tests. The points allocated to each teacher assessment category are detailed below:

| Teacher assessment for pupils below the level of the test - <u>at key stage 2</u> | Points (below the scaled score range) |
|--|--|
| Below the standard of the interim pre-key stage standards (for example assessment based on p scales) | 70 |
| Foundations for the expected standard | 73 |
| Early development of the expected standard | 76 |
| Growing development of the expected standard | 79 |

Interpreting a school's progress scores

Individual pupil level progress scores are calculated in comparison to other pupils nationally. For all mainstream pupils nationally, the average progress score will be zero.

A school's progress scores for English reading, English writing and mathematics are calculated as its pupils' average progress scores. This means that school level progress scores will be presented as positive and negative numbers either side of zero.

- A score of 0 means pupils in this school, on average, do about as well at key stage 2 as those with similar prior attainment nationally.
- A positive score means pupils in this school on average do better at key stage 2 than those with similar prior attainment nationally.
- A negative score means pupils in this school on average do worse at key stage 2 than those with similar prior attainment nationally. A negative score does not necessarily mean a school is below the floor.

For example, a school with a mathematics progress score of -4 would mean that, on average, pupils in this school achieved 4 scaled score points lower in the key stage 2 mathematics test than other pupils with similar prior attainment nationally.

English writing progress scores differ from English reading and mathematics progress scores and do not directly relate to scaled scores. As there is no test in writing, key stage 2 teacher assessments are used to create the progress scores. To do this we assign points to teacher assessment before creating the progress scores in our model (see page 20). A progress score of -5 in English writing, therefore, could be seen as meaning pupils in this school on average achieve 5 points lower in our progress model than other pupils with similar prior attainment nationally.

A negative English reading score does **not** mean that pupils did not make any progress between key stages 1 and 2. A negative score means that they made less progress than other pupils nationally with similar prior attainment.

What we publish for progress

Each school will have three published progress scores:

- average progress in English reading
- average progress in English writing
- average progress in mathematics

Schools can see their own provisional progress scores on the performance tables data checking website from 1 September 2016. If headteachers do not have log in details for the website please contact: examshelp@rm.com. Provisional school level progress scores will also be available to schools through RAISEonline later in the autumn term.

Confidence intervals

Progress 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 results independently of which school they attend. To account for this natural uncertainty 95% confidence intervals around progress scores are provided as a proxy for the range of scores within which each school's underlying performance can be confidently said to lie.

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 with similar starting points nationally. Similarly, if the upper bound is below zero, then the school has made less than average progress. Where a confidence interval overlaps zero, this means that the school's progress score is not significantly different from the national average.

The results of schools with small cohorts tend to have wider confidence intervals. This reflects the fact that performance of a small number of pupils taking key stage 2 tests can have a disproportionate effect on the school's overall results. Both the progress score and the confidence interval for a school should be taken into account when comparing with other schools or pupil groups.

Further information on confidence intervals is available in annex A.

Pupils in particular circumstances

In limited circumstances, schools may request that a pupil be omitted from performance measures, for example, if pupils have recently arrived from overseas.

There are also a number of circumstances where a pupil's results are not included in the progress measures, but are included in the attainment measure as 'not meeting' the expected standard.

These include:

- pupils who are working at the standard of the tests, but who have no test data in English reading or mathematics, for example, due to absences
- pupils who are working at the standard of the test and are entered into the test, but gain too few marks to be allocated a scaled score and do not have a pre-key stage teacher assessment

Where pupils have moved schools between key stage 1 and key stage 2, we will retrieve their key stage 1 data and include them in the progress calculation for their current school.

Where pupils have no key stage 1 data, their results will not be included in the school's progress measures, but will be included in the attainment measures.

Annex A: Confidence intervals

Progress 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 results independently of which school they attend. To account for this natural uncertainty 95% confidence intervals around progress scores are provided as a proxy for the range of scores within which each school’s underlying performance can be confidently said to lie.

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

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

where:

| | |
|-----------|--|
| $LowCI_s$ | is the lower confidence limit for the school’s progress score |
| $UppCI_s$ | is the upper confidence limit for the school’s progress score |
| P_s | is the school’s progress score |
| CI_s | is the size of the confidence interval for the school’s progress score |

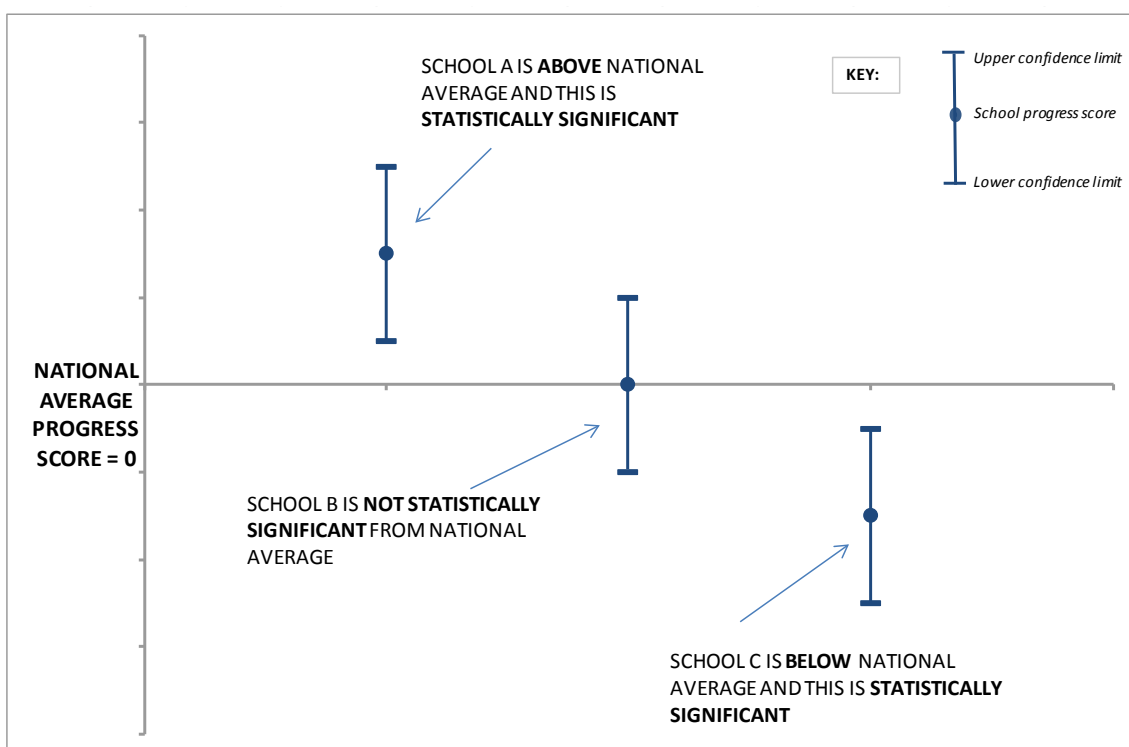
$$CI_s = 1.96 \times \frac{\sigma_N}{\sqrt{n_s}}$$

where:

| | |
|------------|--|
| 1.96 | is the critical value for a 95% confidence interval |
| σ_N | is the standard deviation of the progress 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 score of all state-funded 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 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 score is below average and the result is statistically significant.
- In the other cases when the confidence interval straddles zero ($LowCI_s < 0 < UppCI_s$), we cannot say with confidence whether the school's progress score is above or below average, and say the result is not statistically significantly different from average.



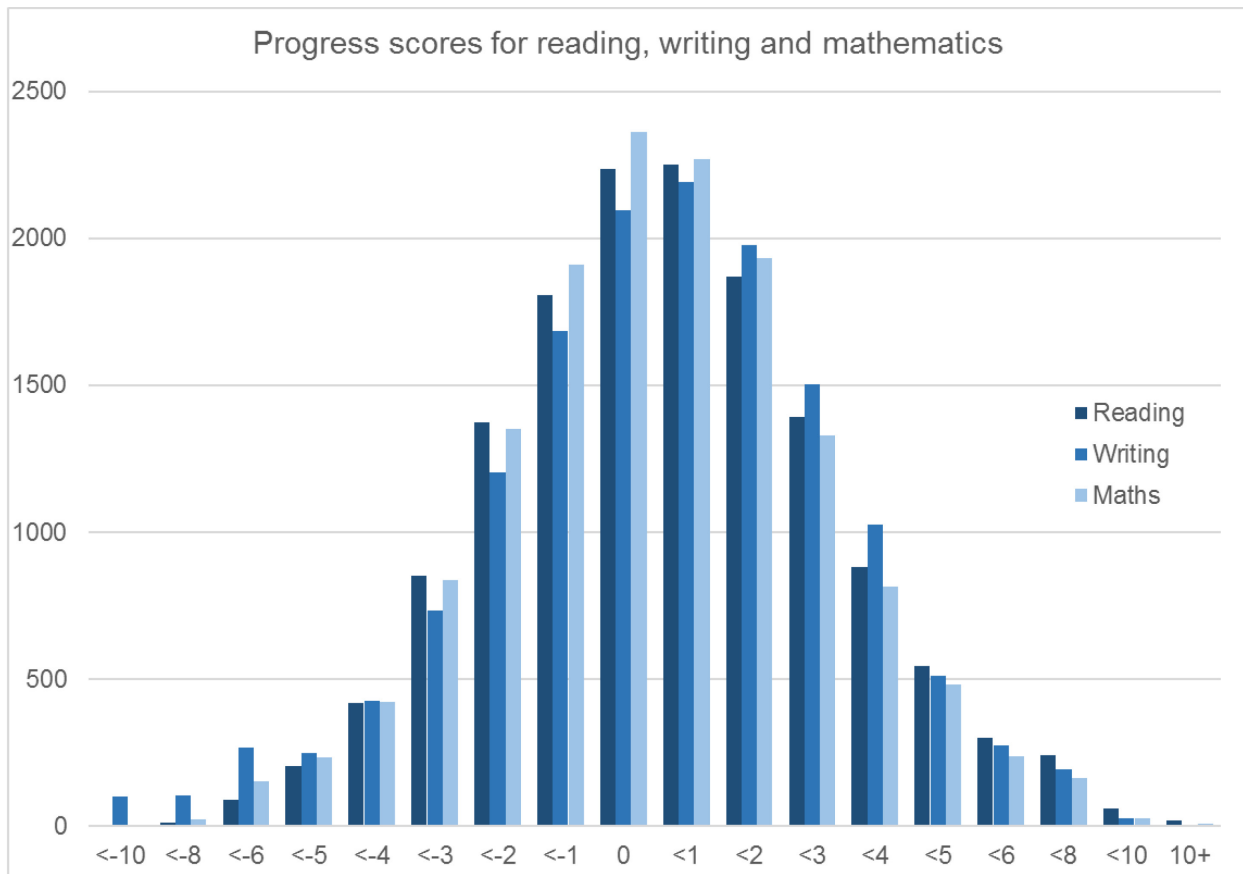
The table below provides the standard deviation of pupil progress scores in each of the three subjects. The standard deviation is a measure to quantify the amount of variation in a set of values. A low standard deviation indicates that the data points tend to be close to the mean, while a high standard deviation indicates the data are spread out over a wider range of values.

The values in the table have been used in the calculation of confidence intervals as outlined in this section.

| Subject | Reading | Writing | Mathematics |
|--------------------|----------------|----------------|--------------------|
| Standard deviation | 6.2756 | 6.2913 | 5.3356 |

Annex B: Distribution of progress scores

The chart below and table shows the distribution of schools' progress scores by subject. They show that we have set sufficient progress (-5 in test subjects and -7 in writing) in a place that identifies the schools making the lowest amount of progress compared to schools with similar intakes.



The table below provides the percentile distribution across the three subjects. All of the schools below the progress element of the floor standard in an individual subject will be in the bottom 5% in that subject.

| Percentiles | Reading | Writing | Mathematics |
|-------------------|----------------|----------------|----------------|
| Top 5% | 4.7 and above | 4.4 and above | 4.3 and above |
| Next 20% | 1.8 to 4.6 | 1.9 to 4.3 | 1.6 to 4.2 |
| Next 15% | 0.7 to 1.7 | 0.8 to 1.8 | 0.6 to 1.5 |
| Middle 20% | -0.6 to 0.6 | -0.6 to 0.7 | -0.6 to 0.5 |
| Next 15% | -1.6 to -0.7 | -1.7 to -0.7 | -1.7 to -0.7 |
| Next 20% | -4 to -1.7 | -5 to -1.8 | -4.3 to -1.8 |
| Bottom 5% | -4.1 and below | -5.1 and below | -4.4 and below |



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