Key stage 2 similar schools guidance

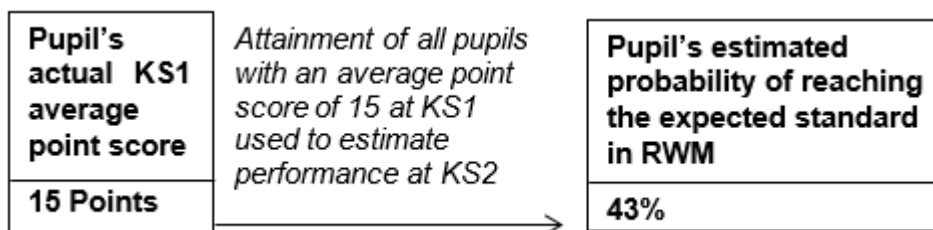## A guide for primary performance tables

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Contents

What are similar schools?

The purpose of similar schools grouping is to provide further context around key stage 2 performance and an insight into how schools are performing compared to those with similar intakes. A similar schools group is made up of a focus school grouped with 124 other schools with similar intakes based on key stage 1 prior attainment.

To define schools with similar intakes, an estimated key stage 2 attainment is calculated for each school based on the prior attainment of their intake.

Each pupil's key stage 2 estimate is calculated based on the <u>actual</u> reading, writing and mathematics attainment (RWM) of all pupils nationally with similar prior attainment at key stage 1.

For example, calculation of an estimated outcome for a pupil who scored an average of 15 points at key stage 1 will be based on the actual key stage 2 outcome of all pupils nationally that also scored an average of 15 points at key stage 1. Each school's estimate is the average of the estimates of its pupils.

Pupil's actual KS1 average point score	Attainment of all pupils with an average point score of 15 at KS1 used to estimate performance at KS2	Pupil's estimated probability of reaching the expected standard in RWM
15 Points	→	43%

The technical annex provides a more detailed description of how pupils' estimated key stage 2 attainment is calculated and the calculation of school estimates.

Once the similar school estimates have been calculated, a similar schools group is selected for each school by taking the 124 schools with the most similar estimates, in most cases, 62 above and 62 below. This means that each school has a unique group.

The diagram below demonstrates how a school's similar schools group is selected.

Rank of school Estimate	School	School estimate
1	School 1	67.72
2	School 2	68.72
...	...	...
4468	School 251	61.05
4469	School 4469	61.05
4470	School 4470	61.05
4471	School 4471	61.04
4472	School 4472	61.04
4473	School 4473	61.04
...	...	...
4526	School 4526	60.4
4527	School 4527	60.4
4528	School 4528	60.4
4529	School 4529	60.3
4530	School 4530	60.2
4531	School 4531	60.1
4532	School 4532	60.1
4533	School 4533	60.1
4534	School 4534	60.1
4535	School 4535	60.1
...	...	...
4589	School 4589	59.7
4590	School 4590	59.6
4591	School 4591	59.5
4592	School 4592	59.4
4593	School 4593	59.3
...	...	...
14342	School 14342	16.2
14343	School 14343	8.1

School 4530's similar Schools group consisting of 125 schools

62 most similar schools with a higher estimate

62 most similar schools with a lower estimate

Better performing similar schools

Where possible we have highlighted schools within each similar schools group that are both better performing than the focus school *and* within travelling distance should schools wish to collaborate. To be highlighted as such a school needs to:

- have at least 65% of their pupils reaching the expected standard in reading, writing and mathematics
- have attainment that is at least 16 percentage points higher than the focus school
- be located within 75 miles of the focus school

If there are no schools within a group that meet the above criteria, we have found an additional better performing school outside of the group where possible. The information for this school is displayed at the bottom of the group page.

If a school has attainment that is 85% or higher it is not possible for there to be a better performing school based on the criteria set out above. In these instances, any additional, better performing school has to meet the following criteria:

- 100% attainment
- located within 75 miles of the focus school
- the school's similar school estimate must be within 10 percentage points of the focus school (to ensure that the school has a similar intake)

Below is an example of a similar schools comparison page showing how the percentage of pupils reaching the expected standard in the focus school compares with others in the similar schools group.

To offer further context, the similar schools page also shows other headline measures including:

- average progress for each of reading writing and mathematics
- average scaled scores for each of reading and mathematics
- the percentage of pupils achieving the higher standard in reading writing and mathematics.

Better performing schools and schools in each group with a similar percentage of disadvantaged pupils to the focus school are highlighted. Users can also select specific schools for wider comparison on the website by clicking the 'Add to comparison list' next to the school name.

School name and type	Local authority	% of pupils meeting the expected standard	School position within group	Progress score, description and confidence interval			% of pupils achieving at a higher standard	Average score in reading	Average score in maths
				Reading	Writing	Maths			
School A (Maintained School) ❓ Add to comparison list	Kent	100%	1	Well above average 6.3 ❓	Average 2.5 ❓	Well above average 4.2 ❓	8%	110	108
School B (Maintained School) Add to comparison list	Norfolk	100%	1	Well above average 5.3 ❓	Average 2.9 ❓	Average 0.9 ❓	0%	109	105
School C ❓ Add to comparison list	Buckinghamshire	100%	1	Well above average 6.3 ❓	Well above average 4.4 ❓	Well above average 3.8 ❓	7%	110	108
School D (Maintained School) ❓ Add to comparison list	Derbyshire	93%	4	Well above average 3.8 ❓	Average 2.6 ❓	Average 1.7 ❓	7%	108	106
School E Add to comparison list	Cumbria	89%	5	Well above average 6.5 ❓	Above average 3 ❓	Well above average 3.2 ❓	5%	109	107
School F Add to comparison list	Gloucestershire	87%	6	Well above average 5 ❓	Average 0 ❓	Well above average 4.8 ❓	10%	109	109
Focus School (Maintained School) Add to comparison list	East Sussex	18%	125	Average -1.9 ❓	Well below average -11 ❓	Well below average -3.4 ❓	0%	102	101

Click for information on school context in relation to focus school

Technical Annex

Calculating pupil and school estimates

Behind the key stage 2 similar schools measure sits a statistical model used to identify schools with the most similar intakes. The model:

- generates **pupil estimates** (EP_p) that are the probability of each pupil achieving the expected standard or higher in reading, writing and mathematics at the end of key stage 2. They are based on the national performance of all pupils in the same prior attainment group;
- calculates **school estimates** (EP_s) that are the average of all pupil estimates in a specific school.

Pupil eligibility for inclusion in the similar schools model

Pupils are included in the key stage 2 similar schools model if:

- they are eligible for inclusion in the school-level headline attainment indicator 'Percentage of pupils achieving the expected standard in reading, writing and mathematics at the end of key stage 2';
- their key stage 2 attainment can be matched to their key stage 1 attainment in at least one subject (reading, writing or mathematics);
- they attend a state-funded maintained mainstream school (including academies).

Methodology for pupil estimates

First, the proportion of pupils achieving at least the expected standard in each prior attainment group is calculated. This proportion is taken as the estimated probability of a pupil achieving the expected standard or higher given their prior attainment.

All students in the same prior attainment group are assumed to have the same chance of achieving the expected standard. The 2017 pupil estimates are shown in the chart below where each 'step' corresponds to different prior attainment bandings.

A pupil's key stage 1 average point score represents their prior attainment and the chart bandings conform to the prior attainment groups adopted in primary progress measures. Pupils in prior attainment groups 1-4 have been merged into a single banding due to the very small numbers in mainstream schools assessed on the lowest P scales at key stage 1. All other bandings and groups remain equivalent.

Estimated probability of achieving the expected standard vs Key stage 1 average point score
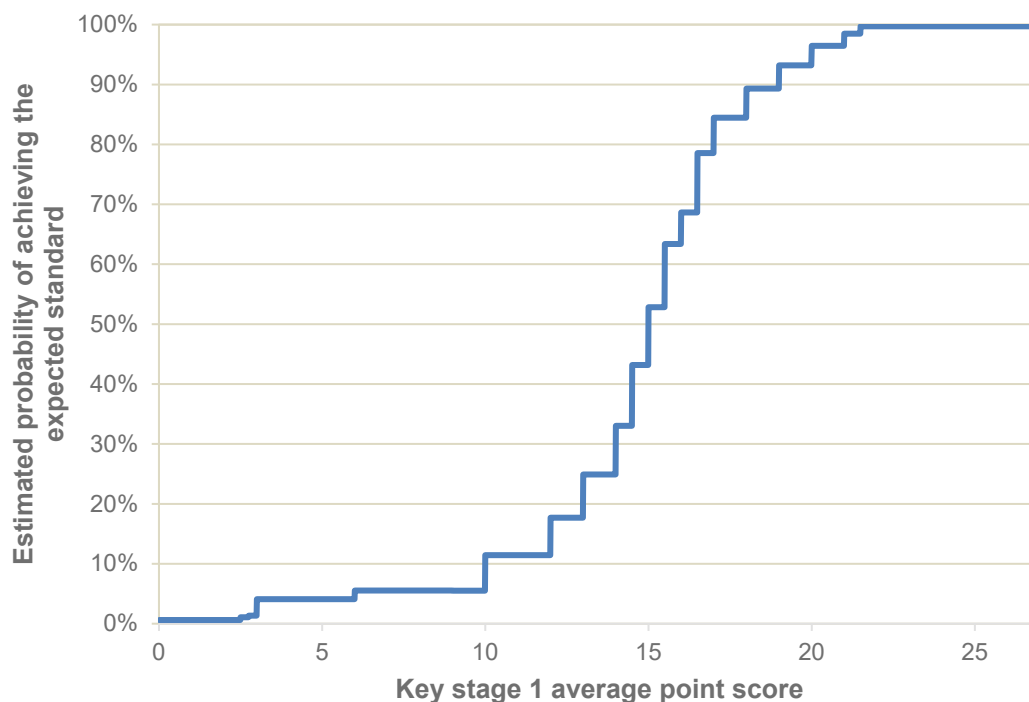
Worked example

Pupil Bob Drake has the following prior attainment at the end of key stage 2:

Surname	Drake
Forename	Bob
Key stage 1 average point score	16.33

The first step in calculating Bob's pupil estimate is to assign him to his prior attainment group.

A key stage 1 average point score of 16.33 is >=16 and <16.5, putting Bob in prior attainment group 17 (for more information on convertibility see the primary accountability guidance).

The proportion of pupils achieving the expected standard in this prior attainment group is 0.686480 (to 6 d.p.). This is Bob's pupil estimate (EP_p).

Bob's likelihood of achieving at least the expected standard in reading, writing and mathematics is therefore 68.6480% (to 4 d.p.). He is more likely than not to achieve the expected standard.

School eligibility for inclusion in the similar schools model

Schools are included in key stage 2 similar school groupings if:

- they are classed as a state-funded maintained mainstream school;
- their results are not suppressed in performance tables under the small numbers/suppression rules.

Methodology for school estimates

School estimates (EP_s) are calculated as the average estimate of all pupils in that specific school:

$$EP_s = \frac{\sum_{p=1}^{n_s} EP_p}{n_s} \ ,$$

where:

n_s	is the number of eligible pupils in the school
$\sum_{p=1}^{n_s} EP_p$	is the sum of the eligible pupil estimates within the school

The school's group will then be made up of 124 schools with the closest estimates to EP_s. In most school groups there will be 62 schools above and below the focus school. In a small number schools with the highest or lowest estimates it may not be possible to achieve an equal number of schools above or below the focus school. In these cases the group of 124 may be made up of more schools above or below the focus school.

Continuation of worked example 1

Bob is one of 100 pupils in his school's key stage 2 cohort. They have a range of pupil estimates:

Pupil #	Pupil name	Pupil estimates	
1	Bob	68.6480%	
2	Carl	84.4470%	
⋮	⋮	⋮	
100	Karolina	78.5513%	
	Average	**85.9545%**	

The average estimate for all eligible pupils within the cohort is calculated using the formula below:

$$EP_s = \frac{\sum_{p=1}^{n_s} EP_p}{n_s} = \frac{(68.6480\% + 84.4470\% + \cdots + 78.5513\%)}{100} = 85.9545\% \ (to \ 4 \ d.p.)$$

The final key stage 2 school estimate (EP_s) in this example is 85.95% when rounding to 2 d.p.

The school's group will then be made up of 124 schools with the closest estimates to 85.95%; 62 schools above and 62 below.

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