



Department
for Education

Key Stage 4 Similar Schools

**Guide and technical note for local
authorities, maintained schools,
academies and free schools**

January 2017

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Introduction to the similar schools measure

The purpose of similar schools is to provide further context around key stage 4 examination performance and an insight into how schools are performing compared to those with similar intakes (based on the level at which they were assessed at the end of key stage 2).

This information is provided to help schools identify others with similar ability pupils, with whom they might want to collaborate and share good practice. From a parent or governor's perspective, it gives an indication of what schools with children of similar levels of ability have been able to achieve.

To identify schools with similar intakes, we estimated the Attainment 8 score for each pupil at the end of key stage 4. This estimate is based upon the attainment of pupils in key stage 2 tests and teacher assessment. The pupil estimates can then be averaged for all key stage 4 pupils in a school to calculate the school estimate

Once the similar school estimates have been calculated, a similar schools group is selected for each school by taking the 54 schools with the most similar estimates, in the majority of cases this is the 27 above and 27 below. This means that each school will have a unique group of 55 schools (including the focus school).

Schools' average Attainment 8 score per pupil for 2016 is then compared across the similar schools group. The summary diagrams on pages 4 and 5 shows how to interpret the similar schools comparisons.

The schools included in the measure are state-funded mainstream schools only.

Further information on Attainment 8 and other key stage 4 headline measure can be found in the [Progress 8 and Attainment 8 measure in 2016, 2017 and 2018 guidance](#).

Expiry or review date

This technical guide will next be reviewed before January 2018.

Who is this advice for?

This guidance is for:

- local authorities
- school leaders, school staff and governing bodies in all maintained schools, academies and free schools

Interpreting Similar Schools Comparisons

Example of a similar schools' comparison, showing how the focus school's Attainment 8 score compares to their similar schools group:

School name and type	Local authority	Attainment 8 score	School position within group	Progress 8 score, description & confidence interval	Average points score at key stage 2
School 279	Local authority 1	51.9	21	-0.04 Average (-0.19 to 0.16)	27.4

School 279 is the focus school

The average Attainment 8 score per pupil for this school for 2016 is 51.9

The school has the 21st highest Attainment 8 score per pupil in their similar schools group of 55 schools

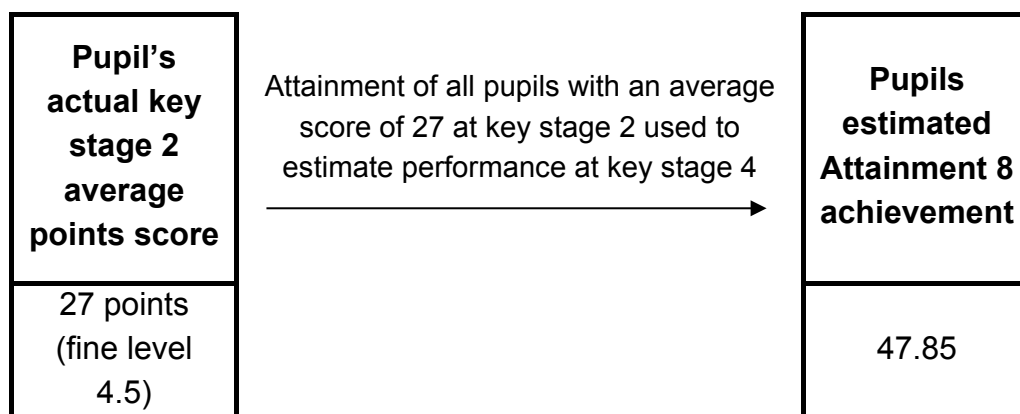
Progress 8 and prior attainment provided for further comparison

Example of a similar schools group table, showing how the focus school's Attainment 8 score compares to their similar schools:

School name and type	Local authority	Attainment 8 score	School position within group	Progress 8 score, description & confidence interval	Average points score at key stage 2
School 280	Local authority 1	61.8	1	1.15 Well above national average (0.90 to 1.39)	27.4
School 281	Local authority 2	56	2	0.59 Well above national average (0.45 to 0.72)	27.4
School 282	Local authority 3	54.8		0.43 Above national average (0.27 to 0.58)	27.4
School 283	Local authority 4	54.6		Average (0.19 to 0.58)	27.4
School 284	Local authority 5	54.3		Average (0.15 to 0.65)	27.4
School 285	Local authority 6	53.4		Average (0.15 to 0.65)	27.4
School 286	Local authority 7	53.3		Average (0.15 to 0.48)	27.5
School 274				Average (0.08 to 0.35)	27.4
School 27				Average (0.02 to 0.30)	27.4
School 28				Average (0.33)	27.4
School 26				Average (0.03 to 0.41)	27.5
School 27				Average (-0.02 to 0.30)	27.4
School 27			12	0.19 Above national average (0.03 to 0.34)	27.4
School 27			13	0.10 Average (-0.10 to 0.30)	27.4
School 27			14	0.11 Average (-0.16 to 0.38)	27.4
School 28			15	0.05 Average (-0.06 to 0.16)	27.4
School 28			16	0.11 Average (-0.16 to 0.38)	27.4
School 28			17	0.05 Average (-0.06 to 0.16)	27.4
School 276			18	0.03 Average (-0.15 to 0.21)	27.4
School 277	Local authority 19	52.1	19	0.02 Average (-0.15 to 0.21)	27.4
School 278	Local authority 20	52	20	0.08 Average (-0.07 to 0.25)	27.4
School 279	Local authority 21	51.9	21	0.04 Average (-0.10 to 0.17)	27.5
School 259	Local authority 22	51.8	22	Average (0.13 to 0.16)	27.4
School 260	Local authority 23	51.7	23		27.4
School 261	Local authority 24	51.6			27.4
School 262	Local authority 25	51.5			27.4
School 263	Local authority 26	51.4			27.4
School 264	Local authority 27	51.3			27.4
School 265	Local authority 28	51.2			27.4
School 266	Local authority 29	51.1			27.4
School 267	Local authority 30	51			27.5
School 268	Local authority 31	50.9			27.4
School 290	Local authority 32	50.8			27.4
School 291	Local authority 33	50.7			27.4
School 292	Local authority 34		34	-0.06 Average (-0.24 to 0.13)	27.4
School 293	Local authority 35		35	-0.05 Average (-0.19 to 0.09)	27.4
School 294	Local authority 36		36	-0.05 Average (-0.20 to 0.09)	27.4
School 295	Local authority 37		37	-0.07 Average (-0.25 to 0.11)	27.4
School 296	Local authority 38		38	-0.10 Average (-0.25 to 0.05)	27.4
School 297	Local authority 39		39	-0.13 Average (-0.30 to 0.05)	27.4
School 302	Local authority 40		40	-0.14 Average (-0.28 to 0.00)	27.4
School 303	Local authority 41		41	-0.15 Average (-0.36 to 0.07)	27.4
School 300	Local authority 42	49.8	42	-0.28 Below national average (-0.49 to -0.08)	27.4
School 309	Local authority 43	49.7	43	-0.17 Below national average (-0.32 to -0.02)	27.4
School 310	Local authority 44	49.6	44	-0.21 Below national average (-0.37 to -0.06)	27.5
School 311	Local authority 45	49.5	45	-0.23 Below national average (-0.42 to -0.03)	27.4
School 312	Local authority 46	49.4	46	-0.23 Below national average (-0.37 to -0.08)	27.4
School 313	Local authority 47	49.3	47	-0.24 Below national average (-0.40 to -0.09)	27.4
School 306	Local authority 48	49.2	48	-0.24 Below national average (-0.40 to -0.09)	27.4
School 307	Local authority 49	49.1	49	-0.24 Below national average (-0.40 to -0.09)	27.4
School 308	Local authority 50	49	50	-0.26 Below national average (-0.40 to -0.09)	27.4
School 301	Local authority 51	48.9	51	-0.47 Below national average (-0.67 to -0.26)	27.4
School 398	Local authority 52	48.8	52	-0.57 Well below national average (-0.72 to -0.42)	27.4
School 399	Local authority 53	48.7	53	-0.65 Well below national average (-0.82 to -0.49)	27.4
School 304	Local authority 54	48.6	54	-0.65 Well below national average (-0.82 to -0.49)	27.4
School 305	Local authority 55	48.5	55	-0.75 Well below national average (-0.82 to -0.49)	27.4

Selecting Similar School Groups

A statistical model is used to estimate the Attainment 8 achievement for pupils at the end of key stage 4 in 2016. Each pupil's key stage 4 estimate is calculated based on the actual average Attainment 8 score of all pupils nationally with the same level of achievement at key stage 2. For example, calculation of an estimated outcome for a pupil who scored an average of 27 points at key stage 2 will be based on the actual key stage 4 outcome of all pupils nationally that also scored an average of 27 points at key stage 2.



Section A of the technical annex provides a more detailed description of how pupils' estimated Attainment 8 score is calculated.

The individual pupil Attainment 8 score estimate is then averaged to calculate a school level estimate.

For more information on calculating school estimates, please see section B of the technical annex.

Once the school estimates have been calculated, a similar schools group is selected for each school by taking the 54 schools with the most similar estimates, 27 above and 27 below. This means that each school has a unique group.

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

	Rank of school estimate	School	School estimate	
	1	School 1	72.92	
	2	School 2	71.50	
	↕	↕	↕	
	246	School 246	52.13	
The focus schools' (school 279) similar schools group consisting of 55 schools	247	School 247	52.12	27 most similar schools with a higher estimate
	248	School 248	52.11	
	249	School 249	52.10	
	250	School 250	52.10	
	↕	↕	↕	
	271	School 271	52.04	
	272	School 272	52.03	
	273	School 273	52.03	
	274	School 274	52.03	
	275	School 275	52.02	
	276	School 276	52.02	
	277	School 277	52.01	
	278	School 278	52.00	
	279	School 279	51.99	
	280	School 280	51.98	
	281	School 281	51.98	
	282	School 282	51.98	
	283	School 283	51.98	
	284	School 284	51.97	
	285	School 285	51.97	
	286	School 286	51.97	
	287	School 287	51.96	
	↕	↕	↕	
	298	School 298	51.88	
	299	School 299	51.87	
	300	School 300	51.87	
	301	School 301	51.87	
	302	School 302	51.86	
	↕	↕	↕	
	3122	School 3122	21.25	27 most similar schools with a lower estimate
	3123	School 3123	20.04	

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 achieved both elements of the Progress 8 floor standard: their Progress 8 score is equal to or above -0.5 and the upper band of the 95% confidence interval is above zero
- have an average Attainment 8 score per pupil that is at least 8 points (one standard deviation) higher than the focus school
- be located within 75 miles of the focus school

School	Local Authority	Attainment 8 score	School position within group
School 249	Local Authority 1	60.0	1
School 261	Local Authority 3	54.8	2
School 262	Local Authority 4	54.6	3
School 255	Local Authority 5	54.2	4
School 264	Local Authority 6	54.3	5
School 254	Local Authority 7	53.4	
School 265	Local Authority 8	53.4	
School 263	Local Authority 9	53.4	
School 253	Local Authority 10	53.4	
School 267	Local Authority 11	53.4	
School 259	Local Authority 12	52.9	
School 252	Local Authority 13	52.8	
School 268	Local Authority 14	52.1	
School 269	Local Authority 15	52.1	
School 270	Local Authority 16	51.7	10
School 257	Local Authority 17	51.5	11
School 271	Local Authority 18	51.4	12
School 272	Local Authority 19	51.3	13
School 273	Local Authority 20	51.2	14
School 274	Local Authority 21	51	15
School 291	Local Authority 22	51.9	16
School 256	Local Authority 23	51.8	17
School 290	Local Authority 24	51.7	18
School 301	Local Authority 26	51.6	19
School 278	Local Authority 27	51.5	20
School 277	Local Authority 28	50	21
School 276	Local Authority 29	50.9	22
School 275	Local Authority 30	50.8	23
School 250	Local Authority 31	50.6	24
School 279	Local Authority 32	51.9	25

School 249 is a better performing school because it has an Attainment 8 score that is at least 8 points higher than the focus school and is located within 75 miles

The focus school

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

This better performing school will meet the criteria set out above and to ensure that the school has a similar intake, the school's similar school estimate must be within 5 points (one standard deviation of the estimates) of the focus school. This better performing school will also have:

- an average Attainment 8 score per pupil that is higher than their estimate
- a higher difference between their average Attainment 8 score per pupil and their estimated score than the school of interest.

Where a school does not have a better performing school, this does not necessarily mean that this school is the highest attaining school in the country, but that it has one of the highest average Attainment 8 scores per pupil in state-funded mainstream schools, therefore allocating a better performing school based on the above criteria is not possible.

Within each similar schools group, to provide an additional point for comparison, we have also highlighted any school that has a similar proportion of disadvantaged pupils; that is those schools within 2 percentage points difference (plus or minus) of the focus school.

Technical Annex

Section A – Calculating pupil estimates

Behind the key stage 4 similar schools measure sits a statistical model used to identify schools with the most similar intakes. The model generates an estimated Attainment 8 score for each pupil.

The estimated key stage 4 attainment outcome is expressed as a number to 2 decimal places and is the same estimate as used in Progress 8 calculations. It is based on the performance of all pupils (nationally) in the same key stage 2 prior attainment group.

Pupil eligibility for inclusion in the similar school model

Pupils are included in the key stage 4 similar schools model 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 attend a state-funded maintained mainstream school (including academies and city technology colleges)

Methodology for pupil similar schools calculation

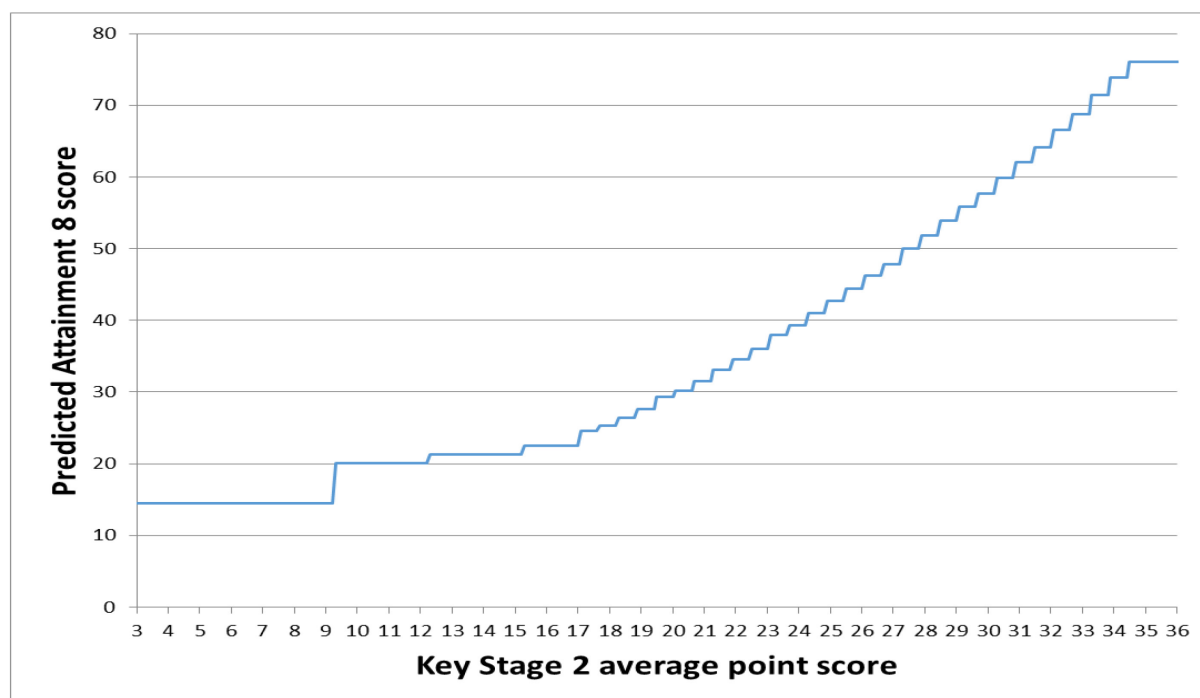
The first step is to work out the average Attainment 8 score for each key stage 2 fine level. The levels are calculated by applying bandings to the key stage 2 fine grade scores, as below:

- pupils with mean key stage 2 fine grade score of ≤ 1.5 are assigned a key stage 2 fine level of 1.5
- pupils with mean key stage 2 fine grade score between 1.6 and 2.0 are assigned a key stage 2 fine level of 2.0
- pupils with mean key stage 2 fine grade score between 2.1 and 2.5 are assigned a key stage 2 fine level of 2.5
- pupils with mean key stage 2 fine grade score between 2.6 and 2.8 are assigned a key stage 2 fine level of 2.8
- pupils with mean key stage 2 fine grade score of ≥ 5.8 are assigned a key stage 2 fine level of 5.8
- for all other key stage 2 fine grade scores, the key stage 2 fine level is the same as the fine grade score rounded to 1 decimal place.

The average Attainment 8 score for each prior attainment group, is taken as the estimated Attainment 8 outcome of pupils with that prior attainment score. All students with the same key stage 2 fine level are assumed to have the same Attainment 8

estimated outcome. These estimates are the same as those used in the Progress 8 calculation.

The chart and table below show the estimated Attainment 8 score for different levels of prior attainment.



Key stage 2 fine level	Attainment 8 estimate	Key stage 2 fine level	Attainment 8 estimate
1.5	14.48	4.2	42.69
2.0	20.04	4.3	44.46
2.5	21.25	4.4	46.22
2.8	22.52	4.5	47.85
2.9	24.59	4.6	49.96
3.0	25.37	4.7	51.85
3.1	26.41	4.8	53.91
3.2	27.63	4.9	55.84
3.3	29.27	5.0	57.69
3.4	30.14	5.1	59.92
3.5	31.47	5.2	62.03
3.6	33.13	5.3	64.14
3.7	34.56	5.4	66.53
3.8	36.06	5.5	68.81
3.9	37.98	5.6	71.48
4.0	39.35	5.7	73.85
4.1	40.95	5.8	76.06

Worked example 1

A pupil at the end of key stage 4 has the following prior attainment:

Surname	Jones
Forename	Gillian
Key stage 2 fine graded average point score	31.53

To calculate Gillian's estimated key stage 4 attainment, we must assign her to her fine level band, by dividing her key stage 2 fine graded average point score by 6 and rounding to 1 decimal place. This gives Gillian a key stage 2 fine level of 5.3.

Next, we find the average Attainment 8 score for pupils with a fine grade of 5.3. The average for this group is 64.14, therefore Gillian's estimated key stage 4 attainment, E_p , is 64.14 (to 2 decimal places or d.p.).

Section B – Calculating school estimates

The school estimate is calculated as the average estimate of all pupils in the school.

School eligibility for inclusion in similar school

All state-funded maintained mainstream schools will be included in similar schools, provided they have at least one eligible pupil in the measure.

Schools will be excluded from the measure if they have their Attainment 8 result suppressed in performance tables under the small numbers/suppression rules.

Methodology for schools estimates

The key stage 4 school estimate, E_s , is given by:

$$E_s = \frac{\sum_{p=1}^{n_s} E_p}{n_s},$$

where:

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

Continuation of worked example 1

Gillian is one of 100 pupils in her school's key stage 4 cohort, who have a range of key stage 4 similar schools estimates:

Pupil #	Pupil name	Similar School estimate
1	Gillian	64.14
2	Lindsay	46.22
⋮	⋮	⋮
100	David	39.35
Average		45.34

The average estimate for all eligible pupils within the school key stage 4 cohort, $\overline{E}_p$, is calculated using the formula below:

$$E_s = \frac{\sum_{p=1}^{n_s} E_p}{n_s} = \frac{(64.14 + 46.22 + \dots + 39.35)}{100} = 45.34 \text{ (to 2d.p.)}$$

Hence the final key stage 4 school estimate for this school, E_s , is 45.34. The school's group will then be made up of 54 schools with the closest estimates to 45.34, with 27 schools above and 27 below.



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