



Department
for Education

Multi-academy trust performance measures at key stage 4: England 2018 to 2019

Quality and methodology information

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1. About these statistics

These statistics show performance of multi-academy trusts (MAT) at key stage 4 (KS4). Academies are state schools directly funded by the government. Each one is part of an academy trust. Trusts can be single-academy trusts, responsible for one academy, or multi-academy trusts (MATs), responsible for a group of academies.

The MAT level data in performance tables and key stage 2 (KS2), KS4 and 16-18 statistical releases provides data and analysis on the performance of MATs in England. The MAT level performance measures are created using data from the school level accountability measures published for the academies within the MAT. Where an academy sponsor oversees a number of multi-academy trusts, results are presented under the sponsor rather than the individual constituent MATs.

Eligibility for inclusion in the measures

Academies, like maintained schools, have their performance data published at school level and have inspection reports at this level too. Where a MAT is sufficiently large and established, we also publish performance data at MAT level.

These statistics do not include all MATs. MATs included within these statistics have:

- at least three schools with results at KS4 as published in the 2019 school performance tables, and
- those schools have been with the MAT for at least three academic years (defined as having joined that MAT before 12 September 2016).

A school is not included if:

- they joined as an academy new to the MAT but had previously been with another MAT. They are included in the previous MAT if they meet the eligibility criteria.

These statistics cover state-funded mainstream schools only. Special schools, pupil referral units, alternative provision academies and alternative provision free schools are not included.

Who is this guide for?

This guide is for:

- **MATs:** MATs use this information to benchmark their performance against others and to support improvement activity
- **School leaders, school staff and governing bodies:** school leaders, staff and governing bodies will be interested in seeing how their MAT is performing, or may use this data to help them identify a prospective MAT to join
- **Regional Schools Commissioners (RSCs):** the data is used by Regional Schools Commissioners to support performance discussions with MATs and to celebrate the success of MATs
- **Local authorities:** the data is used by local authorities that are interested in performance of MATs within their area

Performance measures

The MAT level performance measures are aligned with the school level performance measures to ensure consistent incentives at MAT and school level. The MAT level measures are weighted averages of the data from their constituent academies.

As at school level, the KS4 MAT measures include the KS2 to KS4 progress measure (Progress 8) and EBacc measures. The measures are:

- Progress 8, adjusted¹
- EBacc entry (percentage of pupils entering the full range of EBacc subjects)
- EBacc attainment (EBacc average points score)

These three measures are also presented separately for disadvantaged and non-disadvantaged pupils. MATs measures are also published on the Compare School Performance website, including unadjusted Progress 8, EBacc attainment at grade 5 or above and grade 4 or above. These measures are also available in the download data section:

www.compare-school-performance.service.gov.uk

¹ In a small number of cases, progress scores calculated for individual pupils can be so largely negative that they can distort the overall picture of performance for a school. The progress methodology was refined by using adjusted scores from 2018 to reduce the impact of these large negative extreme progress scores. The secondary school accountability [guidance](#) provides further information.

All measures are calculated from published school level performance data for the 2018/19 academic year. Wider background information and a technical guide for the secondary school accountability framework can be found here:

www.gov.uk/government/publications/progress-8-school-performance-measure

Interpreting this data

The statistical release provides national aggregate figures for MATs, which only cover the subset of academies and MATs included in the MAT performance tables. These statistics therefore cannot be interpreted as how academies or MATs are performing as a whole. The schools and MATs included change each year meaning comparisons over time in attainment measures should be treated with caution. Progress measures are in-year relative measures which, in combination with the changing composition of MATs each year, means they should not be compared over time.

National figures for all state-funded mainstream schools are shown in the release for context. Both national aggregates for MATs and national averages for state-funded mainstream schools exclude special schools, pupil referral units and alternative provision facilities. However, state-funded mainstream schools also include voluntary, foundation and community schools. These are not academies and are therefore ineligible to be included in MATs measures. In addition, the proportion of sponsor led academies is higher in MATs measures than across all academies. This means comparisons between national MAT aggregates and national state-funded mainstream school averages are not like-for-like.

MAT performance measures are intended to give an indication of how well MATs are currently performing. The overall performance of MATs has many dimensions including:

- pupil outcomes;
- financial management;
- governance;
- value for money;
- workforce management; and
- capacity to expand.

MATs also vary from each other in terms of:

- size;
- geographic area;
- types of schools they are running;
- how they are set up and run.

No single measure is ever likely to capture every element of performance or impact of a MAT. This should be borne in mind when considering the outcomes reported in these

statistics. It is also for this reason that contextual data is provided alongside the results (including the percentage of disadvantaged pupils within the MAT, average prior attainment, percentage of pupils with special educational needs and percentage of pupils with English as an additional language). Underlying data at school level for the 2018-19 academic year is also published.

Data sources

The underlying data sources for MAT statistics is key stage 4 school performance data, which can be found here:

www.compare-school-performance.service.gov.uk

The department's database of school records can be found here:

get-information-schools.service.gov.uk

Methodology

Progress 8

This measure captures the progress that pupils make from the end of KS2 to the end of KS4. It is 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.

The Progress 8 score for each MAT is based on the weighted average of its individual schools' respective progress scores, as detailed below. Weighting is employed when calculating the average to ensure a school's contribution to the overall score is proportional to its size.

A school's progress score is weighted for:

- the number of pupils at the end of the key stage
- the length of time the school has been with that MAT (those that have been with the MAT for three years are given a weight of three, those with the MAT for four years are given a weight of four and those with the MAT for five or more years are given a weight of five; the usual combined duration of KS3 and KS4 is five years).

Table 1 illustrates the calculation of the Progress 8 measure at KS4 for a MAT.

Table 1: Example calculation of the Progress 8 measure at KS4

	(i) Progress 8 score, adjusted	(ii) Number of pupils at end of key stage	(iii) Number of years with MAT	(iv) Total weight (ii) * (iii)	(v) Weighted score (i) * (iv)
Academy 1	2.5	30	5	150	375.0
Academy 2	-2.5	59	3	177	-442.5
Academy 3	3.3	50	4	200	660.0
Academy 4	-1.5	22	3	66	-99.0
Academy 5	-1.5	90	3	270	-405.0
Total		251		863	+88.5
MAT score (sum of weighted scores/ sum of weights)					+0.1

English Baccalaureate (EBacc)

EBacc entry and EBacc attainment (average point score) measures are also published at MAT level. Like the Progress 8 MAT scores, the EBacc measures are calculated by weighting school figures by the length of time they have been in the MAT and the number of pupils at the end of the key stage. The calculation for the MAT level EBacc attainment average point score follows the same process as calculating the MAT level Progress 8 score, but with the EBacc average point score at school replacing column the progress score in the table above. More information on what counts in EBacc can be found in the [‘English Baccalaureate: eligible qualifications’](#) guidance.

The calculation is slightly different for EBacc entry, as it is a proportion measure rather than an average.

Table 2 illustrates the calculation of the EBacc entry measure for a MAT.

Table 2: Example calculation of the EBacc entry measure at KS4

	(i) Pupils at end KS4	(ii) Pupils entered for the EBacc	% of pupils entered for the EBacc	(iii) Number of years with MAT	(iv) Total weighted end of KS4 pupils (i) * (iii)	(v) Total weighted pupils entered for EBacc (ii) x (iii)
Academy 1	172	13	8%	5	860	65
Academy 2	264	121	46%	4	1,056	484
Academy 3	194	83	43%	5	970	415
Academy 4	102	25	25%	4	408	100
Academy 5	89	71	80%	3	267	213
Total	821	313			3,561	1,277
Unweighted MAT entry rate		38%	Weighted MAT EBacc entry rate			36%

In the example above, the unweighted EBacc entry rate in the MAT across the five listed schools is 38% (313 pupils entered out of 821). However, the weighted MAT entry rate is slightly lower at 36%.

Disadvantaged and non-disadvantaged measures

Evidence shows that overall performance of disadvantaged pupils is lower than that of other pupils. This data indicates how well a MAT does at tackling performance of disadvantaged pupils. Disadvantaged pupils are those who were eligible for free school meals at any time during the last six years and children looked after (in the care of the local authority for a day or more or who have been adopted from care).

The Progress 8, EBacc entry and EBacc attainment measures are also presented for disadvantaged pupils within each MAT. To do this, the same calculations as above are used, but the relevant data for all pupils are replaced with that for disadvantaged pupils, and the cohort is the number of disadvantaged pupils at the end of the key stage. The weights remain the same and are dependent on the number of years with the MAT to a maximum weight of five.

Table 3 illustrates the calculation of the disadvantaged Progress 8 measure at KS4 for a MAT.

Table 3: Example calculation of the disadvantaged pupil Progress 8 measure at KS2

	(i) Disadvantaged progress 8 score, adjusted	(ii) Number of pupils at end of key stage	(iii) Number of years with MAT	(iv) Total weight (ii) * (iii)	(v) Weighted score (i) * (iv)
Academy 1	1.2	25	2	50	60.0
Academy 2	-1.0	70	4	280	-280.0
Academy 3	3.3	30	1	30	99.0
Academy 4	2.1	19	5	95	199.5
Academy 5	-3.5	96	3	288	-1008.0
Total		240		743	-929.5
MAT score (sum of weighted scores/ sum of weights)					-1.3

An analogous process is followed to calculate weighted measures for non-disadvantaged pupils.

How to interpret the progress measures

For each of the above progress measures:

For all mainstream pupils nationally, the average progress score is zero. The MAT level progress scores will be presented as positive and negative numbers either side of zero:

- if a MAT has a score of zero this means that, on average, pupils within the MAT do about as well as those with similar prior attainment nationally
- a positive score means that, on average, pupils within the MAT do better than those with similar prior attainment nationally
- a negative score means that, on average, pupils within the MAT do worse than those with similar prior attainment nationally.

Confidence intervals

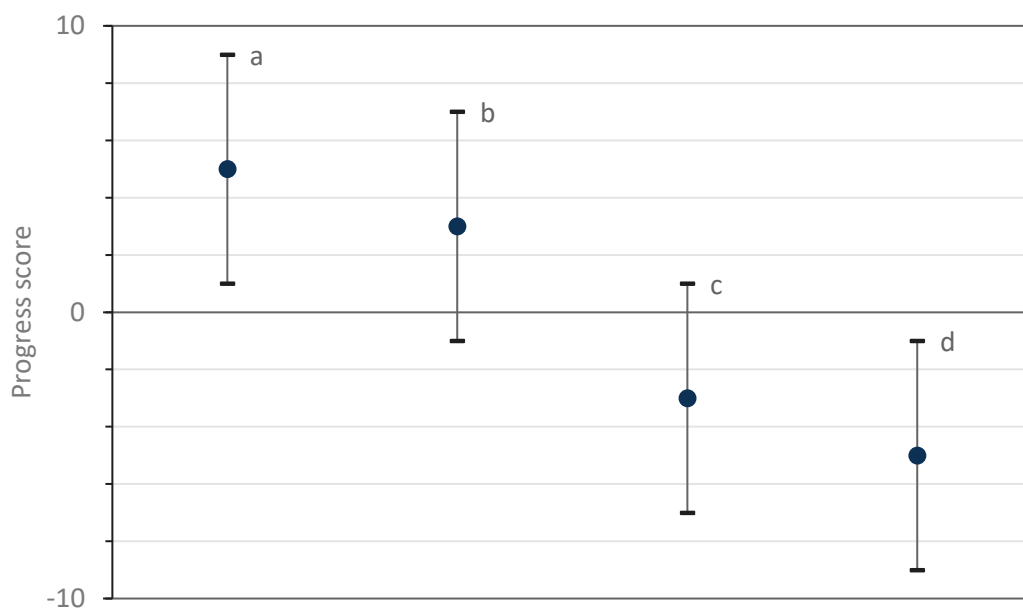
There is a level of uncertainty within the progress measures as they are based on a given set of pupils' results. MATs could have been equally effective and yet the same set of pupils might have achieved slightly different results and would almost certainly have shown different results with a different set of pupils. In recognition of this, the measures are presented with 95% confidence intervals. These provide a range in which users can be confident that the true progress score lies. Smaller groups have wider confidence intervals because their progress scores are based on smaller numbers of pupils. Confidence intervals can be used to identify MATs performing better or worse than average by a statistically significant amount, and close to average.

Many MATs will have scores that are not significantly different from the average:

- if the confidence intervals of one MAT do not overlap the confidence intervals of another, then they are significantly different from each other
- if the confidence intervals for one MAT overlap with the score of another MAT, then they are not significantly different from each other
- if the confidence intervals for one MAT do not overlap with the average (zero) then their progress is significantly different from the average

Figure 1 illustrates some example MAT progress scores and confidence intervals.

Figure 1: Example MAT Progress scores and confidence intervals



- (a) has a positive score and the confidence interval does not overlap the average. The MAT is significantly above average. The MAT is significantly different from (d) as the confidence intervals do not overlap.
- (b) has a positive score and the confidence interval overlaps the average. The MAT is not significantly different from the average.
- (c) has a negative score and the confidence interval overlaps the average. The MAT is not significantly different from the average.
- (d) has a negative score and where the confidence interval does not overlap the average. The MAT is significantly below average. The MAT is significantly different from (a) as the confidence intervals do not overlap.

It is possible to be statistically different from the average anywhere within the distribution – not just at the extreme ends. In addition, the confidence intervals (that result from uncertainty) mean it is inappropriate to specify a precise performance-based ordering of all MATs. Given a MAT progress measure, its confidence interval is given by:

$$\text{MAT progress score} \pm 1.96 \times \frac{\sigma^2}{\sqrt{n}}$$

Where σ^2 represents the variance of pupil progress scores across all eligible pupils nationally and n represents the number of pupils in the MAT that are included in the progress measure.

For a MAT disadvantaged pupil progress measure, σ^2 represents the variance of all eligible pupil progress scores nationally and n represents the number of pupils in the MAT that are included in the disadvantaged progress measure. This is the same as the

methodology used in the school performance tables, but different from the methodology used for MATs in 2016/17 where σ^2 represented the variance of pupil progress scores across all state-funded mainstream disadvantaged pupils nationally. This means the confidence intervals for 2017/18 and 2018/19 for disadvantaged pupils are narrower than in 2016/17. For non-disadvantaged pupil measures, σ^2 also represents the variance of all pupil progress scores nationally.

Improvement measure

Due to the lack of comparable data, resulting from both the recent changes to the school accountability framework at KS4 and new GCSEs phased in from 2017 to 2019, a new improvement measure is not calculated for MATs. This will be reviewed in future when there are multiple years of comparable data.

Timeliness and punctuality

Timeliness refers to the lapse of time between the period to which the data refer and the publication of our measures.

In 2018/19 KS4 MAT measures were published on 23 January 2020, at the same time as school performance tables. Schools are assigned to the MAT they were with before 12 September 2018 as listed on get-information-schools.service.gov.uk

Punctuality refers to the time lag between the actual and planned dates of publication.

The proposed month of publication is announced in advance on gov.uk and precise dates are announced in the same place at least four weeks prior to publication. In the event of a change to the pre-announced release schedule, the change and reasons for it would be announced.

2. Accuracy and reliability

Accuracy describes the closeness between an estimated result and the (unknown) true value.

Measurement error

Measurement error is the difference between the actual value of a quantity and the value obtained by a measurement. Repeating the measurement will reduce the random error caused by accuracy of the measuring instrument but not any systematic error caused by incorrect calibration of the measuring instrument.

For the steps taken to minimise measurement error in the school performance data please refer to the further information and guidance on the performance tables website:

www.compare-school-performance.service.gov.uk

Validation and quality assurance of the data

The production team minimise measurement error and perform validation and quality assurance by independently dual running each output. Any discrepancies in the data produced are discussed and more experienced staff involved as required. Additional checks are also carried out on the data produced. These include:

- Comparisons with previous figures
- Check totals are consistent across tables
- Check patterns in the data are as expected
- Check figures against those produced for the school performance tables

Disclosure control

The Code of Practice for Statistics requires reasonable steps to be taken to ensure that published or disseminated statistics protect confidentiality. The Department for Education's statistical policy statement on confidentiality can be found [here](#).

The data published in this release does not reveal the identity of individuals. School level results are suppressed in the underlying data where the relevant measure was not published for a school.

3. Accessibility and clarity

Accessibility is the ease with which users are able to access the data. It also relates to format(s) in which data are available and the availability of supporting information.

Clarity is the extent to which easily comprehensible metadata are available, where these metadata are necessary to give a full understanding of the statistical data.

The text in the statistical releases for MAT measures and accompanying supporting text documents are published in pdf format so that they are accessible to all users. Care is also taken to ensure that the statistical releases and accompanying supporting text documents meet accessibility guidelines. Key figures are highlighted in the statistical releases which draw out the main messages. Small tables or charts illustrating key figures are also included.

The text in the statistical release is accompanied by formatted Excel tables with clear titles which allow users to find more detail than provided in the text. Important limitations or inconsistencies in the data are mentioned in footnotes so that users do not have to refer to the text or this document.

4. Comparability

Comparability is the degree to which data can be compared over time, region or other domain.

Over time

New performance measures for all schools were introduced for the 2015/16 school performance tables. In the MATs publications of March 2015 and July 2016 the previous value added based performance measures were used, which are not directly comparable to subsequent releases.

The schools and MATs included change each year meaning comparisons over time in attainment measures should be treated with caution. Progress measures are in-year relative measures which, in combination with the changing composition of MATs each year, means they should not be compared over time.

The MAT level progress measures produced for the 2016/17 data (published January 2018) were consistent with those for 2015/16 data (published January 2017). The headline progress measures for the 2017/18 data were adjusted progress scores which were not consistent with those published previously. The progress methodology was refined in 2018 to limit the impact of extremely negative pupil scores on a school's overall score. Further details can be found in the primary technical guidance.² For 2019 there have been no changes to the progress methodology. The unadjusted progress scores are consistent with 2016/17 and 2017/18 and are available on the school performance table website.

The coverage of data in this publication remains the same as the 2017/18 release (published January 2019). As in the 2017/18 release, data is only included for schools from their third academic year under a particular MAT. This ensures these measures are in line with inspection policy for new and transferred academies, recognising the amount of time needed for a MAT to have full effect on a school's results. Prior to the 2015/16 release, data was included for schools with one academic year of results under a particular MAT.

The measures cover MATs with at least three schools in the relevant phase (this means that a MAT that has three schools with it for three years, but with two primary schools and one secondary school will not be included in either the KS2 or KS4 MAT performance tables). This threshold is the same as releases from 2014/15. However, in the output of the 2013/14 release (published March 2015), the threshold was at least five schools and only covered KS4. In addition, data for disadvantaged pupils has only been included in 2018/19 if there are at least three schools within the MAT with at least one disadvantaged pupil. Prior to 2018, data for disadvantaged pupils was included as long

² <https://www.gov.uk/government/publications/progress-8-school-performance-measure>

as there were three schools with KS4 results in the MAT, regardless of the number of schools with disadvantaged pupils.³

The methodology used to derive Progress 8 bandings and confidence intervals was aligned to the same methodology used to calculate bandings and confidence intervals at school level in 2018, including moving from three bandings to five. Progress 8 is a relative measure, which means that the overall national score remains the same between years. This measure is better compared between groups in the same year rather than over time.

The measures presented at MAT level will continue to reflect the school accountability measures.

Differences between school, local authority and national figures

The KS4 MAT measures use the same school level data published within the school performance tables on 23 January 2020.

Measures for local authorities are not included.

Across different types of schools

Only state funded mainstream academies are included in the MAT measures. These are sponsored academies, converter academies, free schools, studio schools and University Technology Colleges. Special schools are not included in the analysis.

Each MAT is different and they each operate under a variety of challenging circumstances. In an attempt to account for this, measures are weighted by the length of time the school has been in the MAT and by cohort size. Schools are also required to be in the MAT for at least three years to be eligible to be included.

With other parts of the UK and internationally

Currently multi-academy trusts operate solely in England.

³ Each measure must have at least three schools with eligible pupils with progress data to be included. This means it is possible that figures will be published for some but not all measures for a particular MAT.



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Reference: Multi-academy trust performance measures at key stage 4, 2018/19



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