



Department
for Education

School efficiency metric

**Guide to understanding and using the
school efficiency metric tool**

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Summary

About this document

This is a guide from the Department for Education on how to use the 2015/16 School Efficiency Metric tool. It has been produced to help users of the tool understand:

- Why a School Efficiency Metric has been provided to schools
- How the Metric has been calculated
- How to use the School Efficiency Metric tool, which is a Microsoft Excel spreadsheet published separately on the GOV.UK website
- What the next steps for users are, once they have formed an idea of their relative efficiency

Review date

The guide will be reviewed when the School Efficiency Metric for 2016/17 is published.

Who is the guide for?

This guide is for all users of the School Efficiency Metric, in particular:

- Headteachers and other school leaders
- School business managers
- Members of school governing bodies

Purpose of the School Efficiency Metric

The department has introduced the metric to help mainstream schools understand whether they could improve their efficiency relative to other schools. The metric provides schools with an indication of their efficiency, based on pupil attainment and the money used to achieve it, relative to statistically similar schools. This will prompt schools to think about where they can become more efficient and how they could focus their resources to support measures to increase attainment.

Many of the schools we spoke to as part of the [Review of Efficiency in the Schools System](#), published in 2013, asked for a sensible way of measuring the efficiency of a school along with a sense of their scope for improvement. The metric aims to meet this request by providing schools with a realistic idea of their relative efficiency.

We hope that the efficiency metric will help schools by:

- prompting heads, governors and school business managers to ask themselves if, why and how similar schools are achieving more with the funding they receive;
- considering further how their own resources are deployed, and what changes could be implemented to help focus resources on improving pupil attainment; and
- encouraging them to contact other similar schools, to learn from each other, for example, on improved processes, aggregation of activity, staff deployment and better value for money in procurement. (See the section in this guide on 'Viewing your efficiency neighbours' for more information.)

The School Efficiency Metric does not provide answers in isolation. It allows schools to form an idea of their scope for efficiency improvements, but it does not suggest how schools should achieve these improvements. Schools should use other efficiency tools and resources, including [financial benchmarking data](#), the resources available through the [Schools efficiency and financial health webpage](#) and the professional judgement of school leadership teams. These other resources and tools can help schools budget and manage their finances, and identify areas where greater efficiencies can be made. The overall ambition is for schools to focus resources on areas that best improve pupil outcomes.

The department intends the metric to be used by schools. It is not an accountability measure and it will not be used by the department as a measure of school performance and there are no plans to use this in school inspection.

Measuring school efficiency

This section summarises the main design and calculation decisions made by the department when calculating the School Efficiency Metric.

Definition of school efficiency

Efficiency is generally defined as the rate at which organisations turn inputs (financial and other resources) into outputs or outcomes. An organisation can become more efficient by producing more outputs with the same level of input; producing the same output with fewer inputs; or by a combination of both.

We have defined school efficiency as the relationship between how much progress pupils make at the school (the 'output') and how much income the school receives (the 'input'). We have chosen progress scores as the output and income per pupil as the input.

Why have we chosen progress scores?

As of 2016, Progress 8 measures are used as an output for secondary schools and an average across progress reading, writing and maths is used as an output for primary schools. Progress is the most appropriate measure of education 'output' available. It recognises progress made while pupils are in a school, rather than levels of achievement (which is highly influenced by the prior achievement or ability of pupils before they enter a school). Progress measures has the following advantages:

- At both school phases, progress scores take prior attainment into account
- At key stage 4, progress takes a pupil's performance across a number of subjects into account.
- At both key stage 2 and key stage 4, progress reflects performance over the range of potential examination grades or scores rather than just getting over thresholds (for example, 5 plus A*-C GCSEs including English and Maths).

In the 2013/14 Efficiency Metric the Value Added measure was used as an output. As of 2016, a new accountability system was introduced and the 2015/16 Efficiency Metric reflects this with the use of progress measures.

What have we included in school income?

We have included only government funding provided to schools. This information has been based on allocations made by local authorities and by the department. We recognise that schools may receive other income and this could result in schools receiving different amounts than we have calculated. We have chosen to use the department's funding data as, in future years, it will allow us to make the metric available

to schools shortly after examination results are published each year. See the technical methodology document for more details on income calculation.

We have adjusted funding to reflect local cost pressures using Area Cost Adjustments, which the department uses to calculate funding allocations. This means that the per-pupil funding figure used in the metric calculation for schools in high-cost areas such as London is lower than the actual cash amount these schools received.

Calculating the metric

There are three steps to calculating the metric.

In the first step, we calculate an 'efficiency score' by dividing each school's progress score by its per-pupil income. Progress and income are measured on different scales and are not directly comparable. To allow us to compare progress and income as fairly as possible, we have 'standardised' both measures before doing the calculation.

In practice, standardisation means we place equal importance on a school's position in both measures' distributions. For example, if a school has more funding than exactly 60% of schools but a higher progress score than exactly 60% of schools, it would be around the average level of efficiency. To have above average relative efficiency, schools will generally need to be further ahead in the progress distribution than they are in the income per pupil distribution.

In the second step, we group schools with similar schools, called their 'efficiency neighbours'. Each school has a unique group of 'efficiency neighbours'.

In the third step, we compare each school's efficiency score with its efficiency neighbours' efficiency scores. A school can be considered relatively efficient if it has a higher efficiency score than others in its group. We band schools in each group into deciles (10 groups of five) and a school's relative efficiency is reported in terms of which decile they are in. We have used deciles so as to focus on the broad scope in improvement that could be possible rather than narrow rankings. We hope that it will also show schools that there is a selection of comparison schools that could be contacted.

Creating groups of similar schools

We create a unique group for each school using a statistical matching method. We have called these groups 'efficiency neighbours'. The groups are created, for each school, by finding the schools which have the most similar proportions of Ever 6 Free School Meals (that is, pupils who have been eligible for free school meals at any point in the last six years) pupils and pupils with special educational needs.

The efficiency neighbours are created by choosing the characteristics that are most highly correlated with school efficiency scores. These characteristics do not capture all of

the challenges faced by a school. But, if more characteristics are added, the similarity of efficiency neighbours is reduced (as measured against each characteristic). In this case, having more than two characteristics would reduce the quality of the matches by too great a degree.

Following the publication of the first efficiency metric in January 2016, we listened to feedback from users and stakeholders about the suitability of characteristics chosen. We have modified slightly the matching method in the second publication. Now, we compare small primary schools only to other similar small primary schools. Previously, the metric took no account of school size.

The approach means that other schools in each school's group all have their own unique groups. This approach maximises the similarity of matches for each school and is consistent with the department's performance tables and schools financial benchmarking service.

Having unique groups results in no two schools' groups completely overlapping, but there will be a significant degree of overlap. For example, if school A contacts any other school B in its group, it is highly likely that school A will also feature in school B's group. The diagram below depicts the schools in school A and school B's groups that are unlikely to feature in school B's and school A's group respectively. The number of schools at these extremes will vary from school to school.

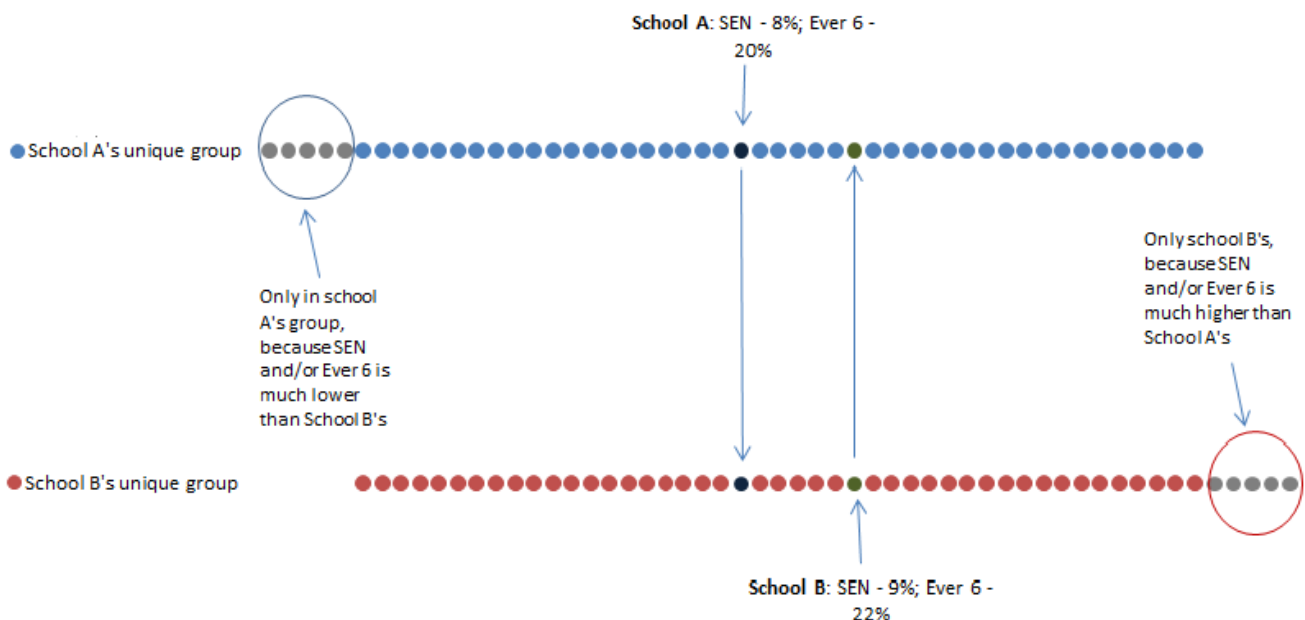


Figure 1: Illustration of the level of overlap between two schools' unique comparison groups (efficiency neighbours)

We have set the group size at 50 to strike a balance between giving schools a manageable number of schools with which they can compare themselves and ensuring the vast majority of schools have at least one local school in their group. (Groups would

have to be very large, up to 200, to ensure a local comparator in all schools' groups.) We have not provided a set of matches based on proximity (distance), as the similarity of schools on the most important characteristics would be very low in this case.

Presentation of the School Efficiency Metric

The 50 schools in each group are ranked by their efficiency score and divided into deciles (10 groups of five). The main measure of school efficiency is the decile in which a school is placed. If a school is in the first decile (1) it is among the five most efficient schools. If a school is in the tenth decile (10) it is among the five least efficient schools.

For more detailed information on the calculation of Efficiency Metric, see the technical methodology note.

Using the Efficiency Metric

In the spreadsheet metric, you can compare the efficiency of your school relative to a set of statistically similar schools, called your efficiency neighbours. The metric enables you to form an idea of your school's efficiency relative to this group of similar schools. There are 50 schools in each group, grouped into deciles (10 groups of 5) depending on their relative efficiency. The overall efficiency of a school is indicated by the decile it is placed in, from 1 (most efficient) to 10 (least efficient).

Inputting your school's details and viewing your efficiency decile

- Go to the **School Selection** tab to enter your school's details and view your efficiency decile.
- Enter your school's Unique Reference Number (URN) or Local Authority Establishment number (LAEstab).
 - If you do not know your school's URN, go to the [Get information about schools](#) website and search for your school.
- Once you have entered your school's details, the Efficiency Metric will update with your school's details. The **School Selection** tab will contain the details about your school which we have used to calculate the metric, along with your school's efficiency decile.

Does your school not feature in the tool?

The efficiency metric provides an efficiency decile to all mainstream schools with examination results at key stage 2 or key stage 4 or both. If your school has results at both key stages, we provide both a primary and secondary efficiency decile. If your school has no examination results, it is not included in our calculations.

Some schools are not included in the publication due to data suppression rules, that is, if making some pupil characteristics public would potentially reveal some sensitive information about an individual pupil. A message appears on the metric explaining that your school has been excluded for this reason. To request your school's efficiency decile, please [contact the department](#).

Interpreting your school's efficiency graphically

The **Charts** tab allows you to see how your school compares to your efficiency neighbours in terms of progress and income (the two main components of the efficiency metric calculation). For secondary schools, you will also be able to see how much

improvement in progress your school would need to make to reach higher levels of relative efficiency, assuming your school's per-pupil income and other schools' efficiency remains the same.

For secondary schools, the first two charts in this tab plot progress scores and per-pupil income of your school and of your efficiency neighbours, from lowest to highest. Efficiency increases as your progress score goes up and decreases as you per-pupil income goes up.

For most schools, being further to the right in the progress chart than in the per-pupil income chart should indicate relative efficiency (that is, deciles 1 to 5). The two charts on the following pages show an example of a relatively efficient (decile 1) and relatively inefficient (decile 10) school. There are a few reasons why being further to the right in the progress chart might not translate into relative efficiency:

- The charts present actual funding received by schools. In the efficiency metric calculation, we adjust income to reflect local costs, as measured by Area Cost Adjustments used in the Department for Education's funding allocations. This means, for example, that a school in a high-cost area such as London could be further to the right in the per-pupil income chart but still be regarded as relatively efficient.
- Efficiency deciles are worked out based on the differences between schools' progress scores and income rather than where schools are placed in a ranking. Your school could be ranked 11th out of 50 on value added, but be more similar to the school ranked 50th than the school ranked first due to the big difference between the top ten value added scores and the rest. This could mean that your school's overall efficiency rating might be less than expected given your high position in the progress chart.

Figure 2: Example of a relatively efficient secondary school with high Progress 8 and low income

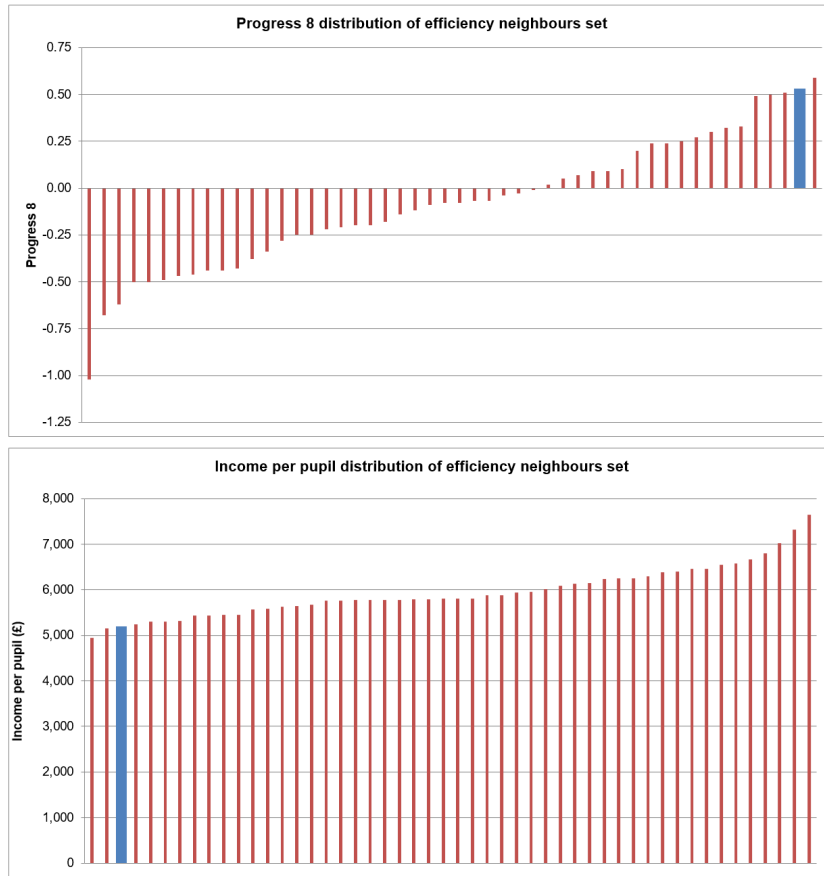
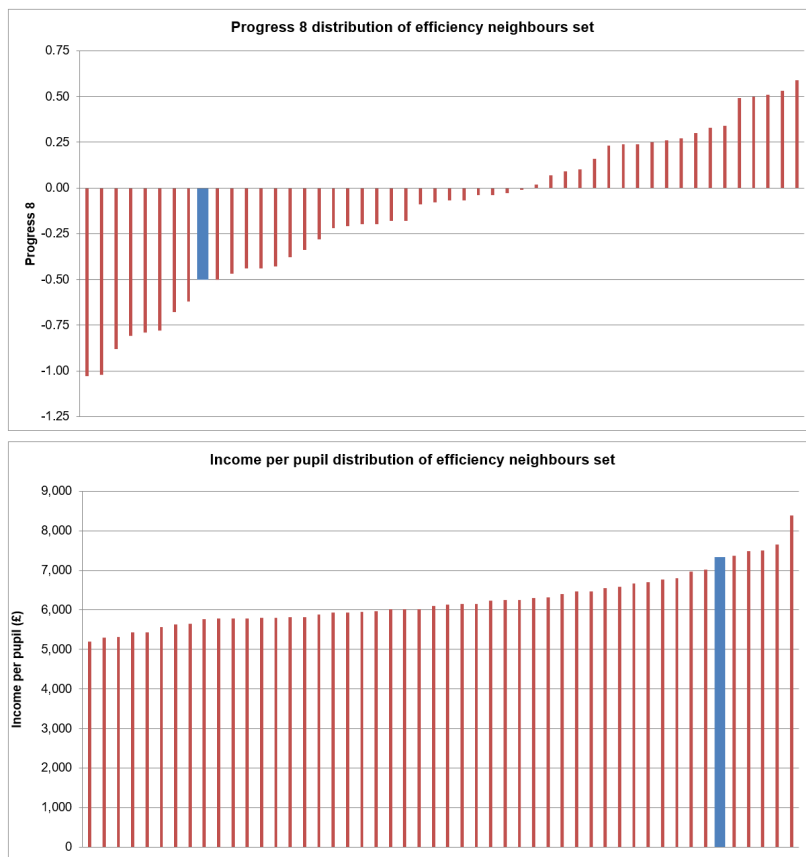


Figure 3: Example of a relatively inefficient secondary school with low Progress 8 and high income

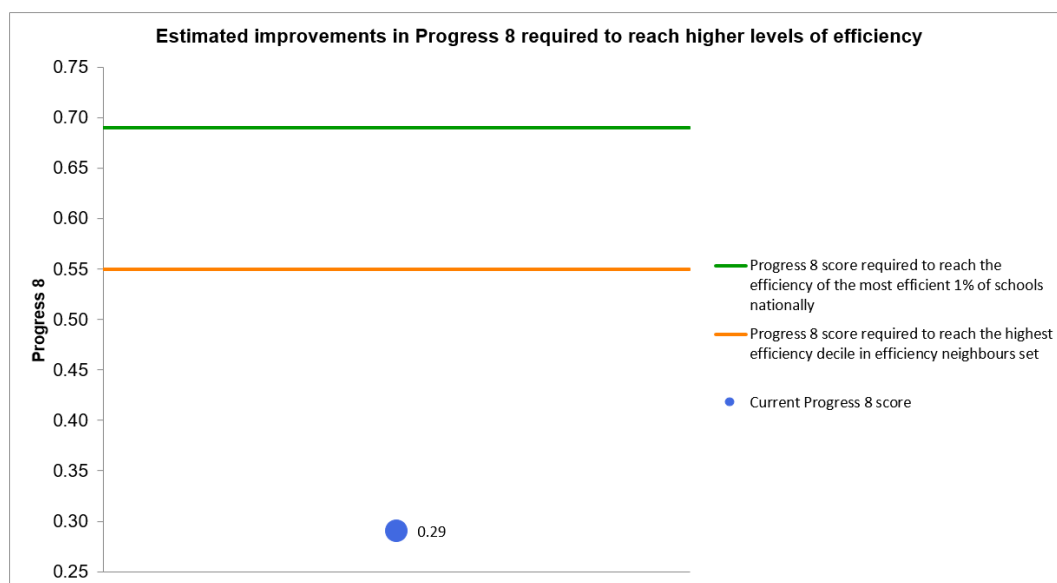


The third chart shows the scope for improvement in your attainment given the funding you receive. The graph provides an indication of the level of progress your school could reach, based on what your efficiency neighbours already achieve. We have represented the improvement in terms of attainment, as this is the part of the metric calculation over which schools have most control. All other inputs in the efficiency metric calculation are held constant to work out this potential improvement: your school's per-pupil income, your efficiency neighbours and the progress score and per-pupil income of your efficiency neighbours.

If your school is in the top 10% or top 1% of the most efficient schools their suggested higher levels of efficiency are achieved by comparing them to schools that may not be one of their 'efficiency neighbours' – and thus may not have similar school-level characteristics to you. This is the only part of the School Efficiency Metric calculation or presentation that does not factor in school-level characteristics. As such, these potential improvements are presented for information and should not be used as a target.

The graph contains several data points, the number and nature of which depends on your school's current decile:

Figure 4: Example of a secondary school in the 3rd decile of its efficiency neighbour group



The box alongside the graph translates progress scores into changes need to allow you to make sense of the scope for improvement in relative efficiency.

Viewing your efficiency neighbours

The metric also shows contextual information and the relative efficiency of your efficiency neighbours on the **Efficiency neighbours** tab. Schools are ranked by efficiency decile and, within deciles, listed in alphabetical order. Thus, the school at the top of the list is not necessarily the most efficient school.

We recognise that all schools face different circumstances and that a single metric could not control for all of them. We have taken a pragmatic approach when calculating the School Efficiency Metric, by only comparing schools that are most similar in terms of the two characteristics that have the greatest impact on our 'efficiency score'. We have done this to (a) narrow down your search for similar schools and (b) ensure that your efficiency decile is as fair and meaningful as possible.

The statistical match is based on the proportion of children in each school with special educational needs and the proportion of pupils who have been eligible for Free School Meals at any time in the previous six years. We have also tried to give schools at least one local neighbour (in terms of geographic distance). Further details are available in the technical methodology note.

The information in the **Efficiency neighbours** tab allows you to explore, in greater detail, who your efficiency neighbours are and how similar they are to you. The location of the schools, their pupil characteristics and per-pupil income are all fields that you may wish to look at.

We encourage you to complement your own knowledge and judgement with our statistical method when identifying which schools, within the list provided, you should compare yourself against and which schools you might contact. You can find contact details for your efficiency neighbours by searching for each school, using the URN provided, on the [Get information about schools](#) website.

The information provided in this tab can also give you a feel for how progress and per-pupil income affect a school's efficiency. Look at how progress and income vary from decile 10 (least efficient) to decile 1 (most efficient). Generally, schools with higher income and lower progress will be less efficient; and schools with lower income and higher progress will be more efficient. We suggest looking for schools with similar income levels to your school, but different attainment; or similar attainment but different income.

You can make deeper comparisons to these schools, in terms of spending, through the school [financial benchmarking service](#). Note that the 'efficiency neighbours' within the financial benchmarking service are different to those used within the School Efficiency Metric. If you wish to compare your spending to your similar schools from the School Efficiency Metric, the schools financial benchmarking service does allow you to compare your school to any other schools of your choice. You will need the name or establishment number of the schools you wish to compare to in order to use this function within the schools financial benchmarking service..

Tools and resources for improving efficiency

The School Efficiency Metric tool has been published to help schools form an idea of their relative efficiency and their scope for improvement. Once you have used the tool to form an idea of your school's relative efficiency and scope for improvement, we recommend that you explore the other available tools and resources to understand how you can improve efficiency. These include, but are not limited to:

- Discussing your school's relative efficiency with your colleagues and considering whether and how your school has scope for efficiency improvements
- Exploring the [School efficiency and financial health webpage](#), which provide training on key elements of good financial management, including workforce planning and effective procurement as well as providing sources of further support
- Comparing your school's spending on individual spending lines using the [schools financial benchmarking service](#). Are there areas where you spend more than other schools? Could you divert some funding to resources that most help improve pupil attainment?
- Contacting some of the schools in your comparison group to see what knowledge you could share and if you could collaborate
- Looking at the [Education Endowment Foundation's Teaching and Learning Toolkit](#). This provides evidence-based summaries on the cost-effectiveness of different types of education spending. Could you use your budget to increase attainment by following this research?

Links to these resources are also available in the School Efficiency Metric and on the final page of this guide.

Further information

Other relevant departmental guides

- [Guide on progress measures for primary schools](#)
- [Guide on Progress 8 for secondary schools](#)

Links to efficiency tools and resources

- [School financial benchmarking service](#)
- [Schools efficiency and financial health webpages](#)
- [Education Endowment Fund Teaching and Learning Toolkit](#)



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