



Department  
for Education

# **School efficiency metric**

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

**January 2016**

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# Summary

## About this document

This is a guide from the Department for Education on how to use the 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
- How users can provide feedback and help us improve future versions of the tool

## Review date

The guide will be reviewed ahead of the next publication of the School Efficiency Metric tool in spring 2016.

## 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 tool 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, e.g. on improved processes, aggregation of activity, staff deployment and better value for money in procurement. Contact details for schools are provided within the metric spreadsheet tool. (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 (for [academies](#) and for [local authority maintained schools](#)), the resources available through the [schools financial health and efficiency 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 for 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 value added as the output and income per pupil as the input.

### Why have we chosen value added?

Value added 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). Value added has the following advantages:

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

The metric will use Progress 8 instead of value added from the first year it is available (2015/16).<sup>1</sup> The transition will not affect the School Efficiency Metric.

### 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

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<sup>1</sup> [See here for further information about Progress 8](#)

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 value added by its per-pupil income. Value added and income are measured on different scales and are not directly comparable. To allow us to compare VA 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 better value added 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 value added distribution than they are in the income per pupil distribution.

In the second step, we group schools with similar schools, called its '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 (i.e. pupils who have been eligible for Free School Meals at any point in the last six years) pupils and pupils with Special Educational Needs.

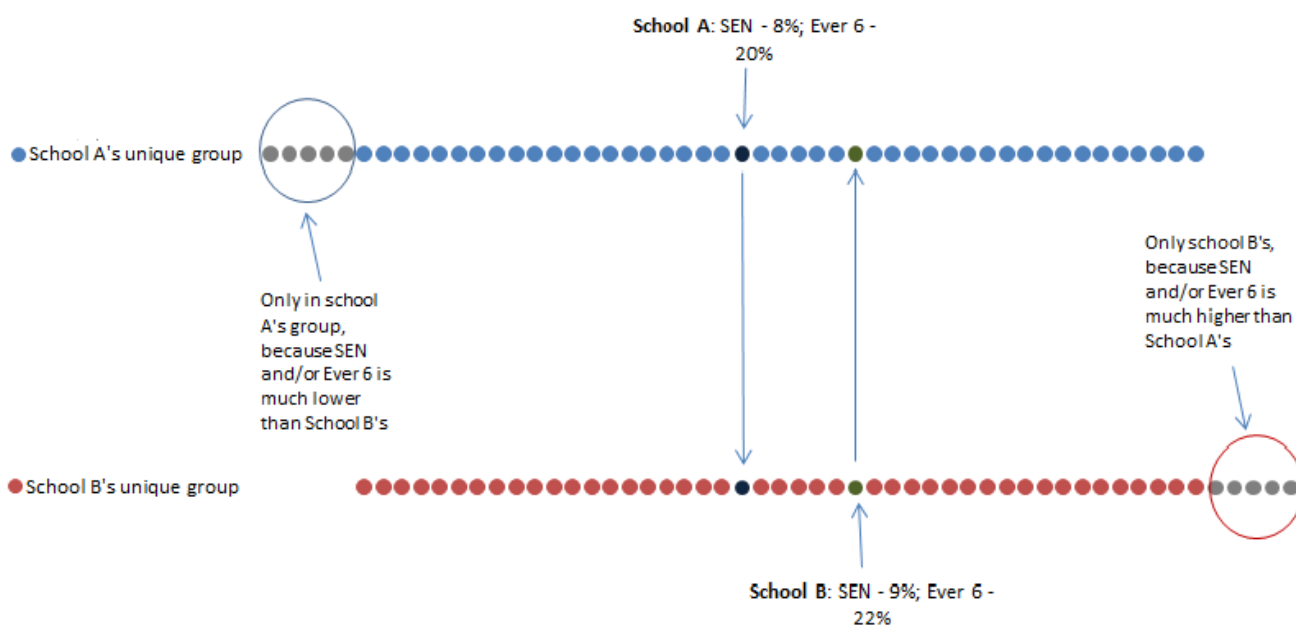
The efficiency neighbours are created by choosing the characteristics that are most highly correlated with school efficiency scores. These characteristics do not capture all of

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.

We will review the grouping characteristics at a future stage to ensure that they remain the most relevant.

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 financial benchmarking websites.

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.

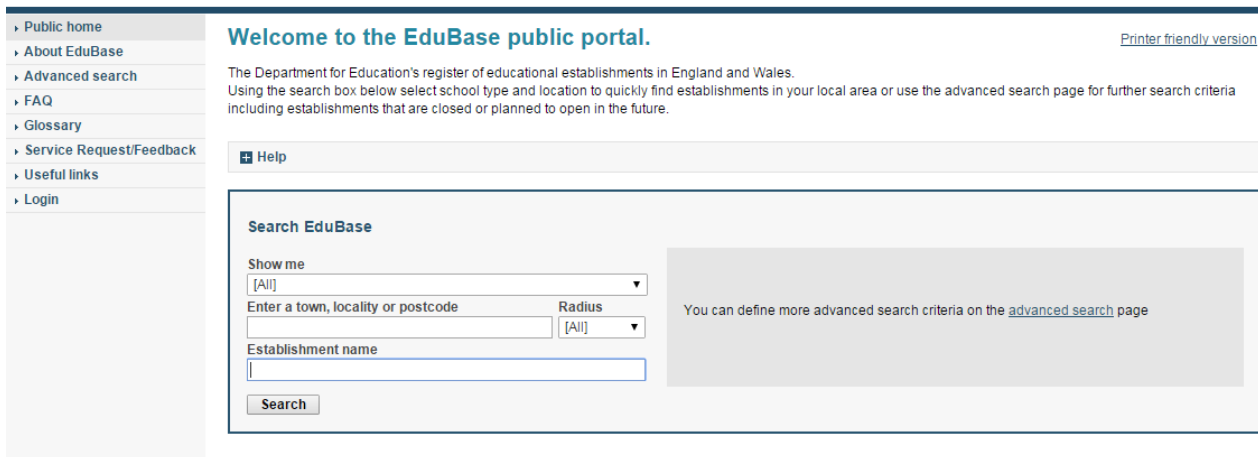


## Using the Efficiency Metric tool

In the spreadsheet tool, you can compare the efficiency of your school relative to a set of statistically similar schools, called your efficiency neighbours. The tool 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.
- You should first select the phase of your school from the drop down list.
  - If pupils in your school take exams at both key stage 2 and key stage 4, your school will have an efficiency decile for both primary and secondary. For more details on how we calculate the scores and assign income to each school phase, see our technical methodology note.
- Below the key stage drop-down list, 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 [Edubase](#) website and search for your school in the 'Establishment name' box. (See the screenshot below.)
  - When you find your school's page, the URN will be visible in the top left corner of the webpage and under the 'Establishment details' tab.



**Figure 2: Screenshot of Edubase website, where you can search for your school's URN**

- Once you have entered your school's details, the Efficiency Metric tool 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 tool provides an efficiency decile to all mainstream schools with examination results at key stage 2 and/or key stage 4. 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, i.e. if making some pupil characteristics public would potentially reveal some sensitive information about an individual pupil. A message appears on the tool 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 value added and income (the two main components of the efficiency metric calculation). 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.

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

For most schools, being further to the right in the value added chart than in the per-pupil income chart should indicate relative efficiency (i.e. 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 valued added 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’ value added scores and income rather than where schools are placed in a ranking. Your school could be ranked 11<sup>th</sup> out of 50 on value added, but be more similar to the school ranked 50<sup>th</sup> 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 value added chart.

**Figure 3: Example of a relatively efficient primary school with high value added and low income**

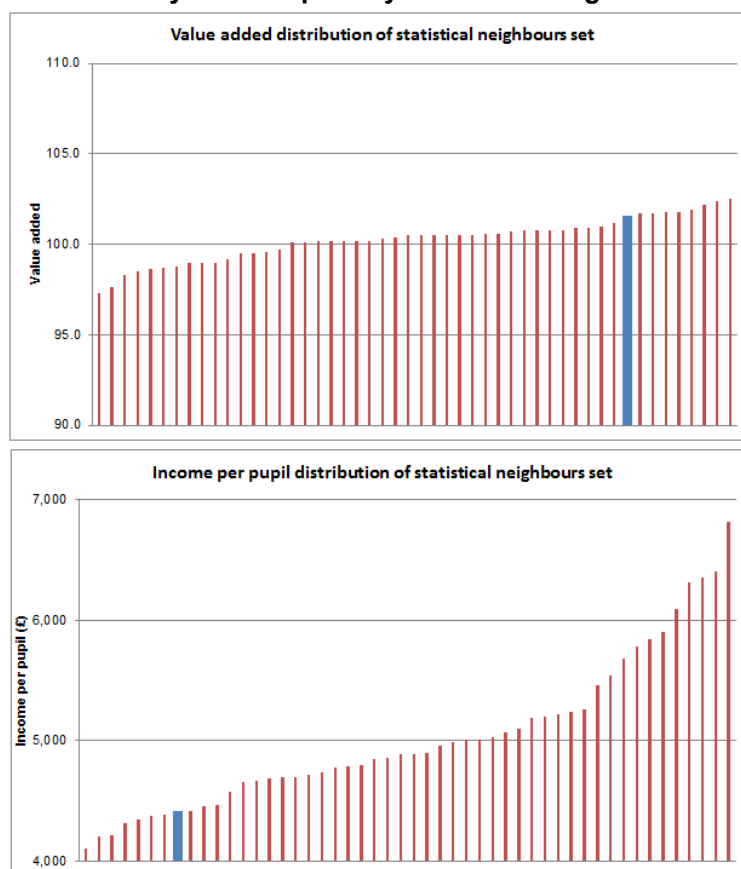
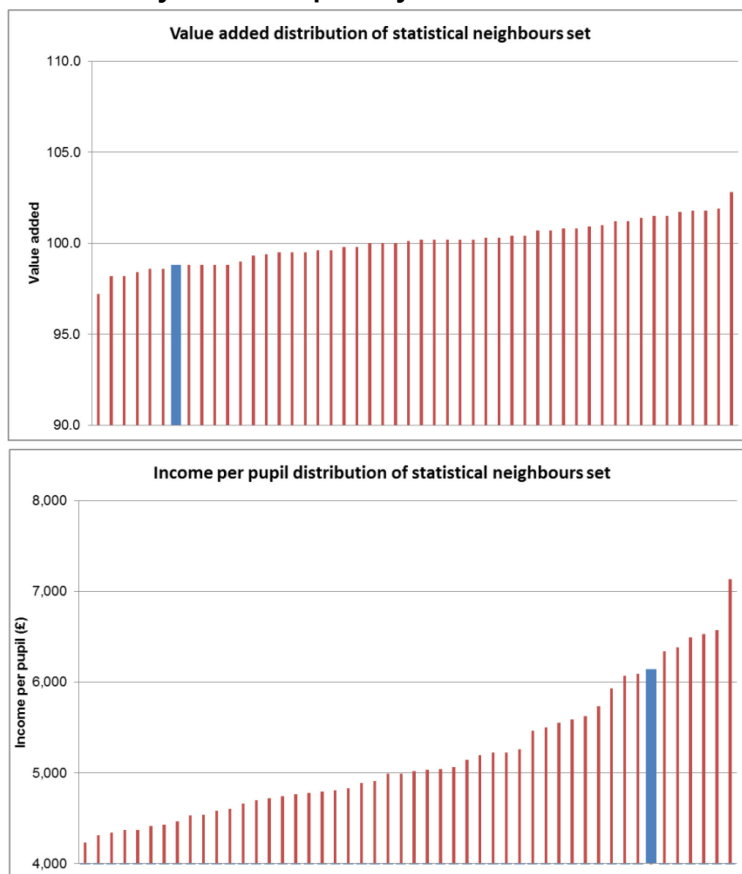


Figure 4: Example of a relatively inefficient primary school with low value added and high income



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 value added 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 value added and per-pupil income of your efficiency neighbours.

If your school is in decile 1, the graph presents, for all except the most efficient schools, improvements in progress required to reach levels of efficiency achieved by schools nationally. These levels of efficiency are achieved by schools that 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 to be used as a target.

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

- The graph shows your school's current value added

- Schools in **decile 1** are shown the value added required to reach the top 10% nationally and/or the top 1% nationally, unless they are in the top 1% nationally
- Schools in **deciles 2 to 6** are shown the value added required to reach the next decile (e.g. moving from decile 3 to 2) and to reach decile 1
- Schools in **deciles 7 to 10** are shown the value added required to reach the next decile, median efficiency (i.e. decile 5) and decile 1.

**Figure 5: Example of a school in the 3rd decile of its efficiency neighbour group**



The box alongside the graph translates value added points into changes in grades (key stage 4) or levels (key stage 2) to allow you to make sense of the scope for improvement in relative efficiency.

## Viewing your efficiency neighbours

The tool 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. Phone contact details for your efficiency neighbours are in the **Efficiency neighbours** tab. You can find more contact details by searching for each school, using the URN provided, on the [Edubase](#) website.

The information provided in this tab can also give you a feel for how value added and per-pupil income affect a school's efficiency. Look at how value added and income vary from decile 10 (least efficient) to decile 1 (most efficient). Generally, schools with higher income and lower value added will be less efficient; and schools with lower income and higher value added 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 websites for [academies](#) and [local authority maintained schools](#). Note that the 'efficiency neighbours' within the financial benchmarking websites are different to those used within the School Efficiency Metric tool. If you wish to compare your spending to your similar schools from the School Efficiency Metric, the benchmarking websites do allow you to compare your school to any of your choice using the "Specific Schools" option. You will need the name or establishment number of the schools you wish to compare to in order to use this function within the benchmarking websites.

## 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 [schools financial health and efficiency 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 financial benchmarking websites (for [academies](#) and for [local authority maintained schools](#)). 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 tool and on the final page of this guide.

## Feedback

The January 2016 publication of the Efficiency Metric tool (covering the 2013/14 school year) is the first time the department has provided schools with an overall indicator of relative efficiency. We plan to publish for the second time in spring 2016 and, to help us make the tool as effective as possible, we are seeking users' feedback ahead of the second publication.

We are running an online survey from 12 January until the end of February 2016. This survey will take approximately 15 minutes to complete. It will cover:

- How you located the publication and how easy it was to use
- How well you understood the Metric calculation
- How you valued the graphical information in the Metric tool
- Your views on the comparison schools
- The next steps you took once you formed an idea of your relative efficiency

You can complete the survey by [clicking here](#).



## Further information

### Links related to this guide

- [Survey to provide feedback on first publication of the Efficiency Metric](#)

### Other relevant departmental guides

- [Guide to value added scores for primary schools](#)
- [Guide to value added scores for secondary schools](#)

### Links to efficiency tools and resources

- [School financial benchmarking \(academies\)](#)
- [School financial benchmarking \(local authority maintained schools\)](#)
- [School financial benchmarking guide \(academies\)](#)
- [School financial benchmarking guide \(local authority maintained schools\)](#)
- [Schools financial health and efficiency webpage](#)
- [Education and Endowment Fund Teaching and Learning Toolkit](#)



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Reference: DFE-00005-2016



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