PUTTING EVIDENCE TO WORK: A SCHOOL'S GUIDE TO IMPLEMENTATION
Gathering and interpreting data to identify priorities

Education Endowment Foundation

1 Confidently identify a priority

Often, the decision to act begins with an instinct, a feeling or a hunch. Existing beliefs about problems in school can be powerful and useful, but they can also reflect biases (which we all have). We need to check and challenge our initial thinking until we are confident that the identified problem is both important and real i.e. a priority. Such confidence relies on two factors:

a. Gathering relevant and rigorous data

b. Generating plausible and credible interpretations of that data

Remember that any data you use are simply representations of the effects of a problem—one of the "multiple inadequate glances" that you can take at the perceived issue. Be careful not to mistake the cause(s) of a problem with the outcome of a problem. For example, low attainment at Key Stage 2 will be an outcome of underlying issues (see the figure in section 4).

To generate evidence and insights on the problem we have to interpret data and use judgement, and that begins by questioning the quality of your data.

| Initial knowledge and beliefs | → | Relevant and rigorous data | → | Plausible and credible interpretation | → | Confidence that the issue is a priority |
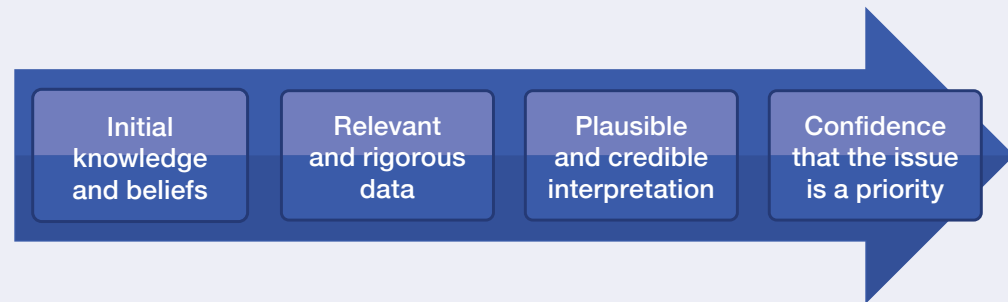
2 Gather data that is fit-for-purpose

We sometimes use data that we have to hand rather than what we need. Examine information from a range of sources to build a rich picture of the issue, recognising the strengths and weaknesses of different sources. Find the quiet trends in the data. Go beyond the headlines and explore the variation.

Ask yourself, 'What cause of a problem does the data represent?', 'What are the trends in the data over time?', 'What are the underlying issues?'.
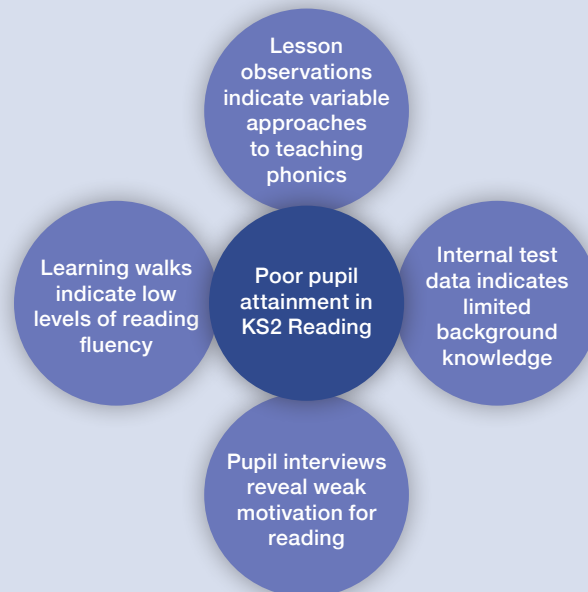
	National test data	Internal test data	Lesson observations	OfSTED data	Surveys/interviews
Pros	Generally reliable. Overview of achievement. Gives comparative data. No increased workload	Tailor tests to needs. Can use existing tests. Cheap and efficient	Gives holistic view of teacher's actions and students' learning responses	Comparability to a national standard. External perspective. Actionable conclusions	Gathers perceptions. Opens lines of communication. Tailor surveys to needs
Cons	Overall scores can mislead interpretations of specific problems (question-level analysis can help)	Often not as reliable as external tests. Internal tests data cannot be compared to national norms	Potentially unreliable. May not represent normal practice. Presence of observer can bias practice	Potentially unreliable. High stakes can drive unhelpful actions. Presence of observer can bias practice	Low response rates and pressure to respond means data can be unreliable. Additional workload
Using Well	Use overall scores across year groups and over several academic years to provide reliable trend data	Use to provide fine-grained insights on an issue, alongside larger grain-size data (e.g. KS2 Maths attainment)	Use to observe the perceived issue in context, and gain a richer picture of how students and teachers experience the issue	Consider perceived issues raised on inspection in relation to your own school improvement priorities	Use to understand the perceptions of a problem in context, and gather suggestions for future actions

4 Provide credible and plausible interpretations

To generate *evidence* of a problem we have to provide credible and plausible interpretations of the data—this requires triangulating data from different sources and using judgement to draw accurate conclusions.

Here are some things to bear in mind:

- Describe how each piece of data provides evidence for the problem *e.g. behavioural issues, captured through lesson observations, suggest that pupils A and B are struggling to access the curriculum*. Identify for whom the problem exists, when it happens and how it manifests.

- Avoid fitting the data to your preconceptions—while you and the data may end up in agreement, this is not automatically the case. Set aside preconceptions of problems and solutions and let the data reveal the nature of the issue.

- Create a strong argument that is credible and acceptable (it will never be definitive) rather than compelling. Rather than trying to convince yourself and your colleagues that you are right, focus on demonstrating an issue with evidence.

- Share your interpretation with people who might disagree with you, to test your thinking and identify weaknesses in it. Encourage them to challenge any assumptions and see if they can disprove the existence of the problem.

Lesson observations indicate variable approaches to teaching phonics — Learning walks indicate low levels of reading fluency — **Poor pupil attainment in KS2 Reading** — Internal test data indicates limited background knowledge — Pupil interviews reveal weak motivation for reading

Example of data interpretation

3 Recognise weaknesses in the data

There are always weaknesses in the data schools use—everything from the wording of questions, to how tired the person marking test papers is, can affect the robustness of the information. This is something we need to accept and respond to constructively by interrogating data for its quality. Ask yourself:

- Are your biases, and those of colleagues, skewing your interpretations of the data?

- Are there significant gaps in your data? If so, are you filling these gaps with your own assumptions and generalisations?

- Is the most relevant and rigorous data—that which is most fit-for-purpose—being prioritised, while data of less relevance and rigour treated with greater caution?

Source of weakness	How to identify the issue
Bias in the generation of the data	Be clear on what the data represent and don't represent, and how they were generated *e.g. internal test scores may be biased if the tests are set and marked by a teacher in a department under pressure to show pupils making quick progress.*
Data isn't valid	Be clear that your choice of assessment is actually measuring what you set out to measure. Sometimes we overreach in our claims about what an assessment is telling us *e.g. a survey on reading for pleasure, or motivation to read, often relates to how well pupils can read, but such a survey doesn't offer an accurate assessment of reading ability.*
Data isn't reliable	Be clear whether your data source is fair and consistent. A reliable source of data usually follows processes that increase accuracy and consistency, such as question trialling, marking moderation and triangulation of different data sources *e.g. lesson observation data conducted by different school leaders could, without consistently applied processes, produce very different—and so non-comparable—insights.*
Data isn't manageable	Be clear that the process of gathering valid and reliable data can increase workload. Weigh up the value of gathering robust data with the opportunity costs in doing so *e.g. a survey of staff on a whole school change can offer us limited insights, but it proves less workload than interviewing all staff.*