

EEF Primary Science Guidance Report: What, Why, How?



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Who we are

- The Education Endowment Foundation (EEF) is an independent grant-making charity dedicated to breaking the link between family income and educational achievement.
- The EEF was founded in 2011 by lead charity the Sutton Trust, in partnership with Impetus, with a £125m founding grant from the UK Department for Education.
- In 2013, the EEF and the Sutton Trust joined the What Works Network, as the designated What Works Centre for Improving Education Outcomes for School-aged Children.

214

EEF-funded
projects

children and young
people reached

1,700,000

**£123
million**

total funding
committed to date

15,000+

schools, nurseries,
colleges involved



Our work...



Overview

1. What?
2. Why?
3. How?
4. Workshop: exemplification



What: EEF Guidance Reports

Summarise the best available evidence

Based on a rigorous review of research

Actionable statements for practice

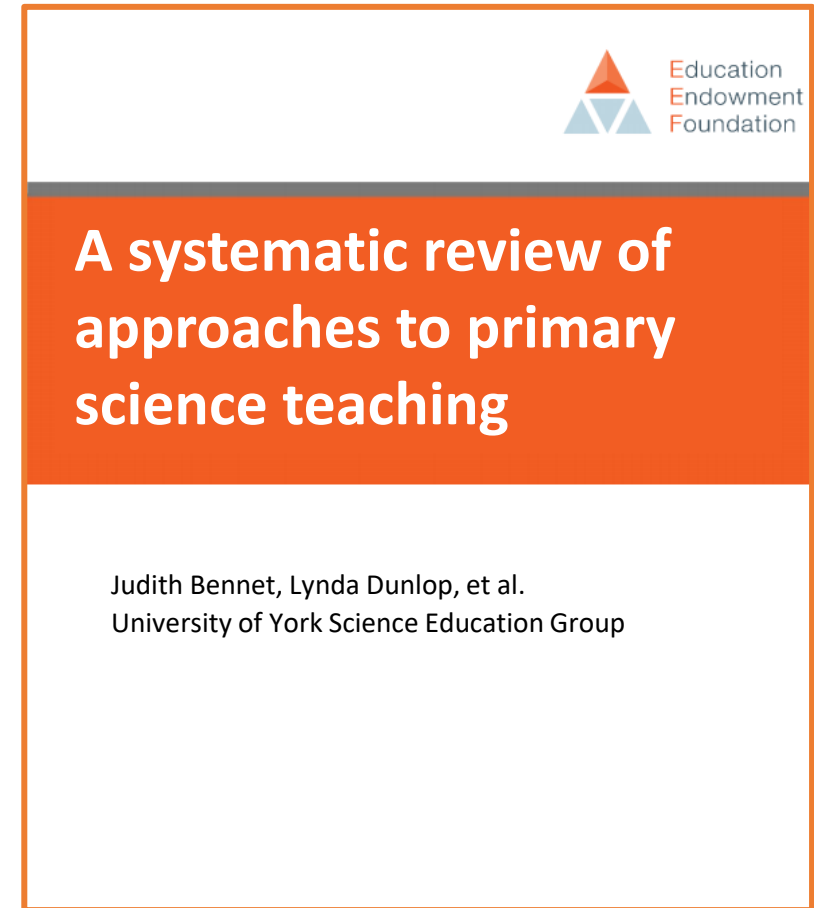
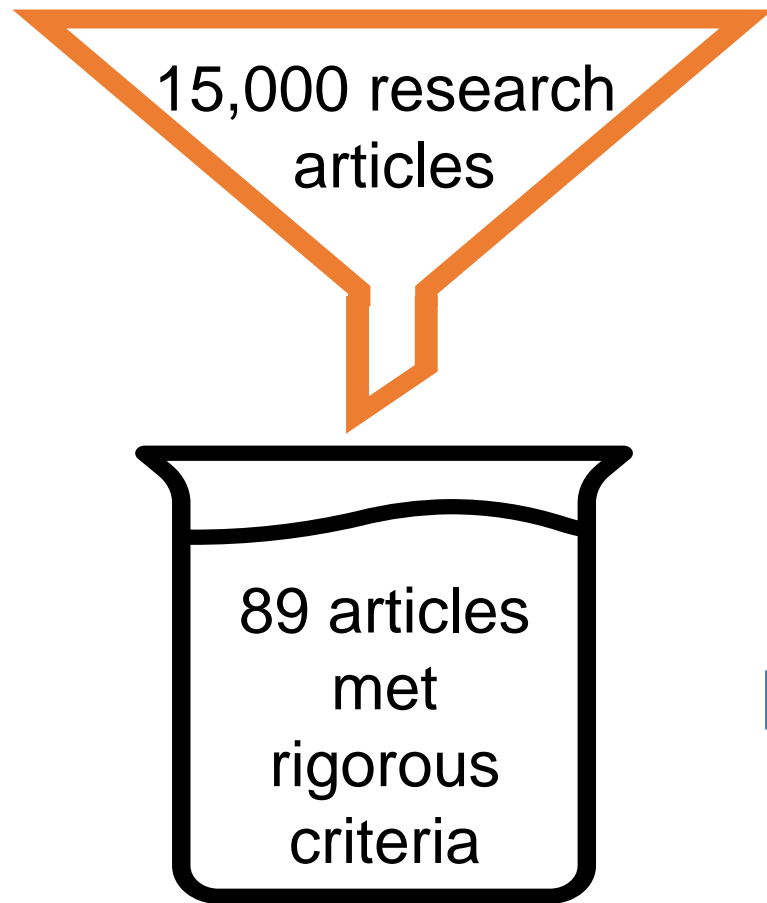
Informed by a panel of academic experts and practitioners – this includes you!



Evidence informed practice



Why this guidance is 'go to'



... this looks like...

1
Preconceptions: Build on the ideas that pupils bring to science lessons



- 1a: Understand the preconceptions that pupils bring to science lessons
- 1b: Develop pupils' thinking through cognitive conflict and discussion
- 1c: Allow enough time to challenge misconceptions and change thinking

2
Self-regulation: pupils direct their learning

- 2a: Explain how evidence
- 2b: Develop pupils' understanding of metacognition and self-regulated learning
- 2c: Develop pupils' understanding of metacognition and self-regulated learning

SCHOOL AUDIT TOOL

Whole school approach to curriculum and teaching

Ineffective

- ✓ School leaders may exhibit knowledge of how children learn, but it is unclear in school policies and not consistently evidence in practice.
- ✓ School leaders and teachers cannot explain the relevance of metacognition and self-regulated learning to the needs of their pupils.
- ✓ No training opportunities are available for staff to deepen their understanding of metacognition.
- ✓ Staff are not signposted to tools to support metacognition, such as the guidance report.
- ✓ There is not the infrastructure for effective collaborative planning to support the development of metacognition and self-regulated learning.
- ✓ Teacher planning shows little evidence of a coordinated approach to teaching pupils explicit metacognitive strategies to tackle complex challenges.
- ✓ When addressing curriculum design, metacognition and self-regulated learning is not considered.

Improving

- ✓ School leaders exhibit knowledge of how children learn and there is some evidence of this in school policies and practices.
- ✓ Some school leaders and teachers can explain how metacognition and self-regulated learning is relevant to the needs of their pupils, but this is not consistently articulated.
- ✓ Some "light touch" training on metacognition, such as one-off INSET, has taken place, but this has not led to a deep understanding of metacognition and self-regulation.
- ✓ Staff have been signposted to tools to support metacognition such as the guidance report.
- ✓ There is some infrastructure for collaborative planning, which sees some colleagues develop shared planning to develop metacognition and self-regulated learning, but this practice is inconsistent.
- ✓ Teacher planning takes some account of explicitly teaching metacognitive strategies to tackle complex challenges.
- ✓ When addressing curriculum design, there is some consideration of metacognition and self-regulated learning.

5

Practical Work
Use practical work purposefully and as part of a learning sequence



believing. As well as being intrinsic to the learning process, practical work helps pupils to root scientific

observe real objects and materials in laboratories and field studies.

Gatsby's international study³⁹ found science educators broadly agreed on five purposes for practical work in Box 10.

Exemplary

- ✓ School leaders exhibit deep knowledge of how children learn and these are exemplified in school policies and practices.
- ✓ Almost all staff can confidently explain how metacognition and self-regulated learning is relevant to the needs of their pupils and this is evident in their planning and practices.
- ✓ Staff have access to effective CPD, with sufficient time to develop a deep knowledge and understanding of metacognition and self-regulated learning.
- ✓ Staff have been supported with a range of tools for metacognition, including the guidance report, as well as other tools that have been developed by the school to support practice.
- ✓ There is a well organised infrastructure that promotes collaborative planning so that all staff are supported to develop metacognition and self-regulated learning.
- ✓ Teacher planning consistently displays attention to explicitly teaching metacognitive strategies so that pupils have high success rates when tackling complex challenges.
- ✓ When addressing curriculum design, metacognition and self-regulated learning is consistently considered.

How to best use the guidance

- Senior leaders, subject leads and teachers
- Putting Evidence to Work—A School's Guide to Implementation, can also support you and senior staff in your school to apply the recommendations
- Focus on one area at a time and have a plan
- High quality PD: build knowledge, motivate, develop techniques, embed practice
- Support from our national network of Research Schools



Our focus today

EEF Primary Science Guidance Report

- Work-in-progress
- Offer actionable guidance based on the latest research

Workshop for discussion and feedback:

- Content
- Language
- Exemplification



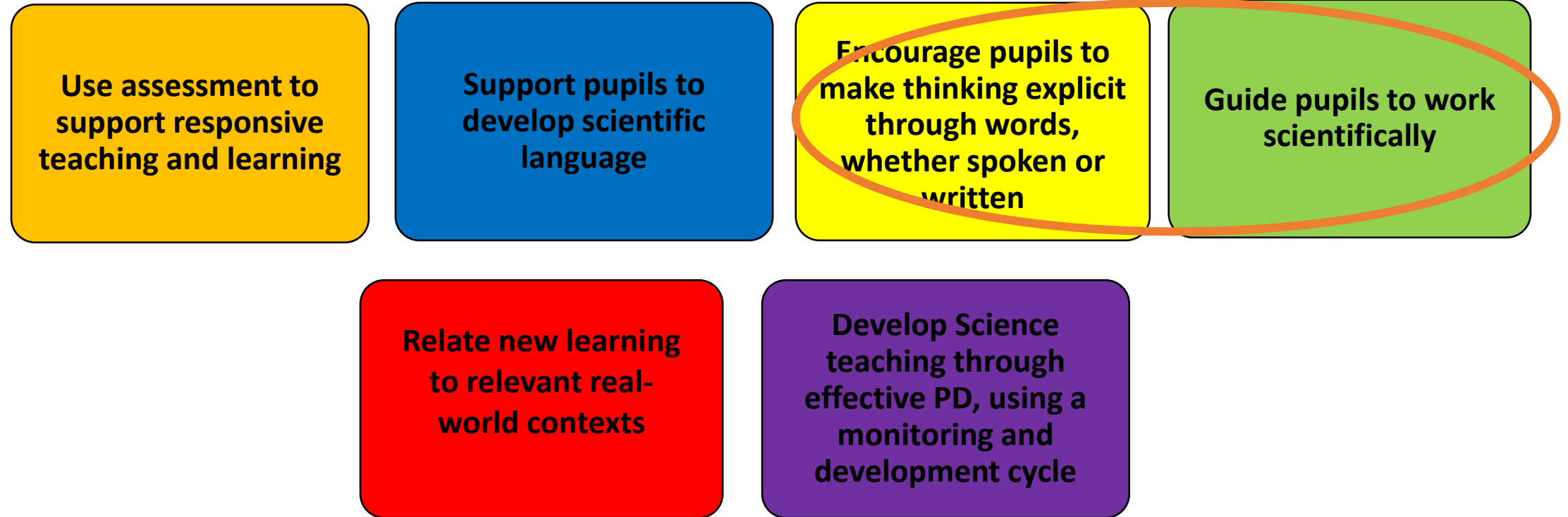
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Actionable guidance:

- Six key recommendations, which are actionable statements



Our focus today:

After reading the text, you should feel like you understand the approach, the 'essential bits', and can think about how you could apply it in your classroom.

**Encourage pupils to
make thinking
explicit through
words, whether
spoken or written**

**Guide pupils to
work scientifically**



Group work:

Read the text
Discuss in your group
Pick a speaker to feedback

Implementing it in the classroom:

- Does the exemplification help you visualise what these strategies might look like? If not, what would help?
- Are the vignettes, examples, and case studies relevant to your own setting?
- Does the exemplification feel actionable - what barriers might you encounter with implementation?
- Do the vignettes raise questions? If so, does the text help answer them?
- Are there other aspects of this recommendation that need exemplification?

Q&A



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Next steps...

- ❑ EEF refine exemplification, case studies, and narrative
- ❑ Publication in November
- ❑ Katie.luxton@eefoundation.org.uk

Thank
You



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