



THE HIDDEN LANGUAGE OF MATHS

It's not just numbers – it's a language too.



THE IDEA

Maths has a distinct language – with its own vocabulary, symbols, structures and ways of explaining thinking.

EAL learners may understand the procedures but struggle to access the language, which can make problem solving and reasoning difficult.

Making the language of maths visible helps students understand what to do, explain their thinking and build confidence.

When we teach the language of maths, we open up the subject to all learners.



IN THE CLASSROOM

Pre-teach key vocabulary and symbols. Use visual representations and worked examples. Teach and model useful sentence frames. Give students time to talk about their thinking before writing. Encourage multiple ways to explain (e.g. words, diagrams, number sentences). Revisit and recycle the language regularly.

THE 3 STEPS

1



IDENTIFY THE LANGUAGE

Find the key language.

Look at the topic, task or exam question. Identify essential vocabulary, symbols and phrases (e.g. calculate, equivalent, factor, solve). Highlight grammatical structures (e.g. if ... then ..., therefore, because). Consider the discourse skills needed (e.g. explain, justify, prove).

"What are the key words here?"

"What does this symbol mean?"

"What kind of answer do I need to give?"

2



MAKE IT VISIBLE

Teach and model the language.

Pre-teach key vocabulary with clear definitions and visuals. Use examples, diagrams and real contexts. Model how to use the language when working through problems. Provide sentence frames and structured support.

"The area is ... because ..."

"To find the value, we ..."

"This is equivalent to ..."

3



USE AND DEVELOP

Give opportunities to use it.

Build the language into class discussion, problem solving and written explanations. Encourage students to talk through their thinking (in pairs or groups). Provide feedback on both mathematical understanding and language use. Revisit, extend and apply the language in new topics and contexts.

"My method is ..."

"I know this because ..."

"Another way to solve this is ..."



WHY IT WORKS

- Helps EAL learners access mathematical ideas.
- Builds confidence in explaining and justifying.
- Supports deeper understanding and problem solving.
- Develops academic language for exams and real-life contexts.
- Benefits all learners, not just EAL students.



EAL UPGRADE

- Create a maths word bank.
- Use visuals and colour coding.
- Provide sentence frames for explanation.
- Encourage talk before writing.
- Include language objectives in your lesson planning.
- Use real-life contexts and manipulatives.



TRY IT TOMORROW

- Choose one key maths topic. Identify 5 essential words or phrases.
- Create a simple visual glossary.
- Model a worked example, thinking aloud.
- Ask students to explain a question in pairs using a sentence frame.



TEACHER LANGUAGE

"Let's look at the key words here."

"Can you explain your method using this sentence frame?"

"What does this tell us?"

"Try saying it in a different way."

"Use the language of maths to justify your answer."

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