

BAR MODELS AND WORD PROBLEMS

A discussion guide for instructional coaches and teachers to use with the DMT Insight on bar models.

How to use it. Work the guiding question both times. Use the Before prompts before the reading or video, and the After prompts once your team has read or watched.

THE GUIDING QUESTION

When your students meet a word problem, are they hunting for keywords or drawing the situation to see the quantities, the total, and what is missing?

COGNITION

How learning holds

BEFORE

Picture a student who adds and subtracts fluently but freezes on a word problem. If the arithmetic is not the problem, what is the problem asking of them that the numbers alone do not?

AFTER

Drawing the relationship moves it out of the student's head and onto the page, where they can look at it instead of holding it in working memory. Where could a quick bar model take the load off working memory this week so students can reason about the situation?

MATHEMATICS

How ideas connect

BEFORE

Across the problems in your next unit, how many really come down to just two structures, a total made of quantities, or two quantities compared?

AFTER

The same bar model that shows part and whole in third grade shows the unknown in $4x + 5 = 53$ later in middle school. Which idea coming up (fractions, ratios, or an unknown) could use the bar model students already know?

INSTRUCTION

How we teach it

BEFORE

When your students draw a bar model, are they reasoning about what each quantity represents, or are they just copying the steps to make the picture look right?

AFTER

What is one move you will try this week to keep the focus on the units and the relationship, like asking "what does this quantity represent?" or "what is the unknown?", and how will you know it helped?