



Professional Noticing: Understanding and Supporting Students' Mathematical Thinking

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- 1 How can teachers better understand and support students' mathematical thinking? It starts with
- 2 professional noticing.
- 3 Professional noticing of students' mathematical thinking is more than just observing students while they
- 4 do mathematics. It is a cycle of attending, interpreting, and deciding. In a professional noticing cycle,
- 5 teachers attend to what students are doing and saying, interpret and make sense of what is seen and
- 6 heard, and decide what to do with that information.
- 7 When we observe students' doing mathematical work, we can engage in a professional noticing cycle.
- 8 When *attending*, we are focusing on key details of students' thinking. We are paying close attention to
- 9 how a student counts, uses tools, or represents their thinking. These actions offer valuable clues about
- 10 their understanding.
- 11 When *interpreting*, we are making sense of what we observe. Rather than relying on assumptions, we
- 12 connect students' strategies to what we know about the phases in which fluency develops. As we
- 13 interpret we are making meaning from the observations we attended to in students' thinking.
- 14 When *deciding*, we are choosing the best response. This might be asking a follow-up question,
- 15 introducing a new tool, or encouraging peer discussion. The goal is to support students in refining or
- 16 extending their thinking.
- 17 Many math educators have linked professional noticing to formative assessment. When we attend to
- 18 and interpret student thinking, we are collecting and analyzing data - a key component of formative



19 assessment. Then, when we decide how to respond, we are using the data collected to inform future
20 instruction.

21 By strengthening our professional noticing, we move beyond simply watching or observing and shift to
22 actively responding and helping students build deeper mathematical understanding through high quality
23 instruction.