Mathematical Mindsets

Boaler, Jo

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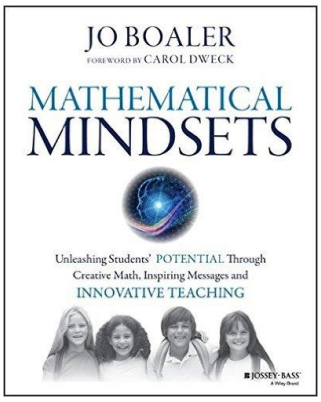
DESCRIPTION



Mathematical Mindsets by Jo Boaler provides concrete and actionable supports and resources for mathematics leaders and teachers in facilitating equitable access to mathematics. While math anxiety and lack of confidence are among the most difficult obstacles for classroom teachers to overcome, this resource provides a wealth of research on what is currently understood about how children develop confidence and proficiency in mathematics. Activities and examples of conceptual, investigative math pedagogy are provided throughout the book, along with research that supports this approach as being the one that facilitates students' growth in beliefs about themselves, as well as their personal roles in the mathematical problem-solving process. *Mathematical Mindsets* provides a number of powerful frameworks for developing equitable mathematics instruction.

STAGE 1 LEADERSHIP

Mathematical Mindsets facilitates Stage 1 development of mathematics coaches and leaders. Jo Boaler has shown that there is a tremendous discrepancy between what the research tells us about how children learn mathematics and the practices typically seen in the mathematics classroom. The research and scientific discussions provide a powerful base of information for instructional leaders on how students come to understand and develop positive dispositions about mathematics. Mathematics leaders will find clear actions and steps that can be developed into professional learning opportunities when working with teachers. The topics range from large-scale ideas, such as equity, assessment, and reporting, to classroom-level actions, such as specific math tasks and methodology. Coaches and leaders can reference all these topics in their work with classroom teachers.

STAGE 2 LEADERSHIP

Mathematical Mindsets also facilitates Stage 2 development of mathematics coaches and leaders in that it can inform their work with teachers in planning and implementing mathematics instruction that supports the development of proficiency and confidence for all students.

Detailed support is provided to facilitate teachers' exploration and understanding of:

- The neuroscience behind how the brain processes and learns mathematics
- The power of productive struggle and how to positively support it
- The impact of rich tasks on facilitating positive and confident learners, along with specific actions for making mathematical tasks richer
- Actionable steps and strategies for equitable math instruction
- Facilitating an appreciation for mathematics in students

Additionally, a large number of activities are provided that serve as positive mindset exemplars of mathematics pedagogy.