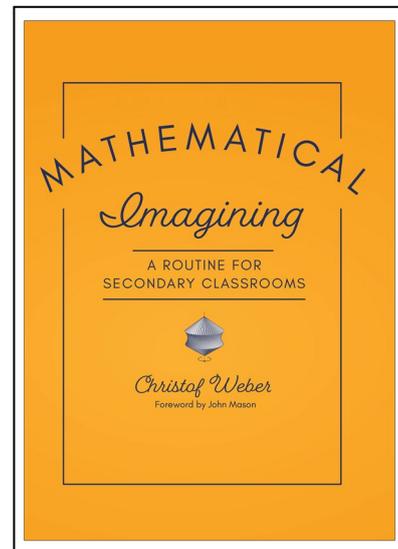


Mathematical imagining

A routine for secondary classrooms

Christof Weber

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Topics	Mathematics, STEM, engagement



Summary

Imagine a plastic cup lying on the floor. Give the cup a nudge so that it begins to roll. What does the path it takes look like? So begins the journey that Christof Weber takes you on in *Mathematical imagining*. Along the way, he makes the case that the ability to imagine, manipulate and explain mathematical images and situations is fundamental to all mathematics and particularly important to higher level study. Most importantly, drawing on years of experiments in his own classroom, Weber shows that mathematical imagining is a skill that can be taught efficiently and effectively.

Mathematical imagining describes an original routine that gives students space and time to imagine a mathematical situation and then revise, discuss and act upon the mental images they create. You can use this creative routine in your secondary classroom to glimpse your students' thinking and discover teaching opportunities, while empowering them to create their own mathematics.

Inside you'll find the following:

- an introduction to the routine including the rationale behind it, facilitation guidance and classroom examples
- modifications to implement the routine in your classroom within varying time constraints
- thirty-seven exercises broken into four categories: constructions, problem-solving, reasoning and paradoxes
- discussions of the mathematics involved in each exercise, including follow-up questions
- instructions on how to create your own exercises beyond the book.

This one-of-a-kind resource is for secondary teachers looking to inspire student creativity and curiosity, deepen their own subject matter knowledge and pedagogical content knowledge, and invite all students to access the power of their own mathematical imaginations.

Other resources

- *Rough draft math: Revising to learn* (SHP1208)
- *The New Art and Science of Teaching mathematics, revised edition* (SOT5404)
- *Mathematics unit planning in a PLC at Work®*, Grades 3–5 (SOT1376)

- *Coding + math: Strengthen K–5 math skills with computer science (IST1543)*