

ZMATH 2016f.00801

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Promoting mathematical argumentation.

Teach. Child. Math. 22, No. 7, 412-419 (2016).

Summary: The Standards for Mathematical Practice (SMP) in the Common Core State Standards for Mathematics (CCSSM) highlight the mathematical habits that educators should be fostering in mathematics classrooms throughout K–grade 12 education. That argumentation and discourse are important components of developing mathematically proficient students has been well established, and this fits well with SMP 3, which states that students will “construct viable arguments and critique the reasoning of others”. Given that this practice is essential, how do teachers effectively incorporate mathematical argumentation into their upper elementary-level lessons? What does this practice look like, and what can teachers expect from students who have had minimal experience with this form of instruction? How do teachers strategically embed argumentation into the appropriate mathematical content? The authors of this article address these questions as they present evidence-based instructional strategies for promoting argumentation. Although these general instructional strategies would apply to mathematical argumentation within various mathematics topics, the specific examples they use to illustrate the strategies are all within the context of exploring the arithmetic properties. The strategies include: (1) Provide language supports; (2) Discuss rich, familiar content; (3) Specify conditions; (4) Introduce false claims; and (5) Manipulate familiar content to be unfamiliar. (ERIC)

Classification: E50

Keywords: reasoning

<http://www.nctm.org/Publications/Teaching-Children-Mathematics/2016/Vol22/Issue7/Promoting-Mathematical-Argumentation/>