CALL FOR MANUSCRIPTS

2017 FOCUS ISSUE

LEARNING MATHEMATICS THROUGH REASONING AND PROBLEM SOLVING

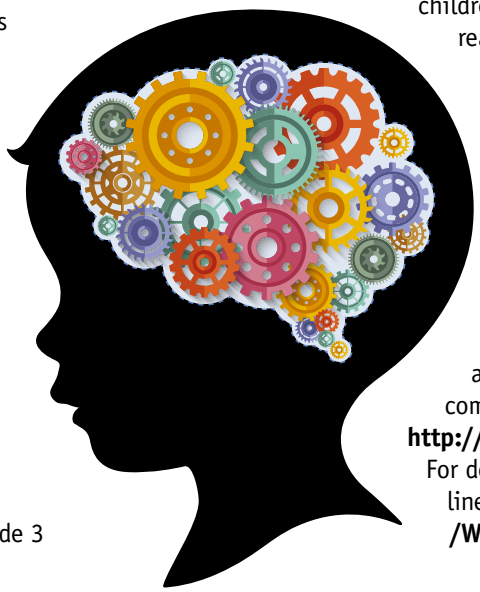
Reasoning and problem solving are important skills that should be emphasized in all mathematics classrooms. One way that teachers can do so is by selecting tasks and activities that require students to engage in higher-level thinking and apply their mathematical knowledge. According to *Principles to Actions: Ensuring Mathematical Success for All* (NCTM 2014, p. 23),

> *For students to learn mathematics with understanding, they must have opportunities to engage on a regular basis with tasks that focus on reasoning and problem solving and make possible multiple entry points and varied solution strategies.*

To solve such tasks, students must be able to understand and apply different tools and representations and move flexibly between them. Therefore, it is important for teachers to select and orchestrate discussions around high-level tasks that provide opportunities for students to use different representations and apply their reasoning and problem-solving skills (*5 Practices for Orchestrating Productive Mathematics Discussions,* Margaret Schwan Smith and Mary Kay Stein. Reston, VA: NCTM 2011).

The use of technology and various tools can further promote students' reasoning and problem-solving skills by supporting and advancing students' mathematical understanding and presenting opportunities for them to engage in high-level tasks. Such tools can also aid students in shifting among various representations to help them make sense of the mathematics and reason with and about it.

The *Teaching Children Mathematics* (*TCM*) Editorial Panel invites you to share your ideas on implementing mathematical tasks to promote reasoning and problem solving. We are especially interested in manuscripts describing strategies and tasks that you have implemented in pre-K–grade 3 classrooms. The following list of questions is intended to guide, but not limit, potential articles.



- Which tasks with multiple entry points have you found particularly effective to engage learners with a wide range of readiness levels in mathematical problem solving and reasoning?
- What are teachers doing to support students as they engage in productive struggle to solve tasks and grapple with representing mathematical relationships? What tools and representations have been successful in promoting students' problem solving and reasoning?
- Which questioning strategies do teachers use to keep the focus on students' mathematical reasoning? How do teachers encourage students to pose questions to clarify their understanding of tasks?
- In what ways have you leveraged the use of technology to help students learn mathematics through problem solving and reasoning?
- Which models and strategies are successful at engaging different student populations (e.g., ELLs, Special Education, Gifted) in tasks that promote problem solving and reasoning?
- How can parents and caregivers engage children in mathematical problem solving and reasoning through everyday experiences?
- How are preservice teachers learning about the need to teach mathematics through problem solving and reasoning in their future classrooms?

Limit your manuscript to 2500 words, excluding figures and references. Author identification may appear on the cover page only. Submit completed manuscripts to *TCM* by accessing **http://tcm.msubmit.net** by **July 31, 2016**. For detailed manuscript preparation guidelines, visit **http://www.nctm.org/WriteForTCM**.

WITTAYAWIC/THINKSTOCK (CHILD) ASKOLD ROMANOV/THINKSTOCK (GEARS)

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