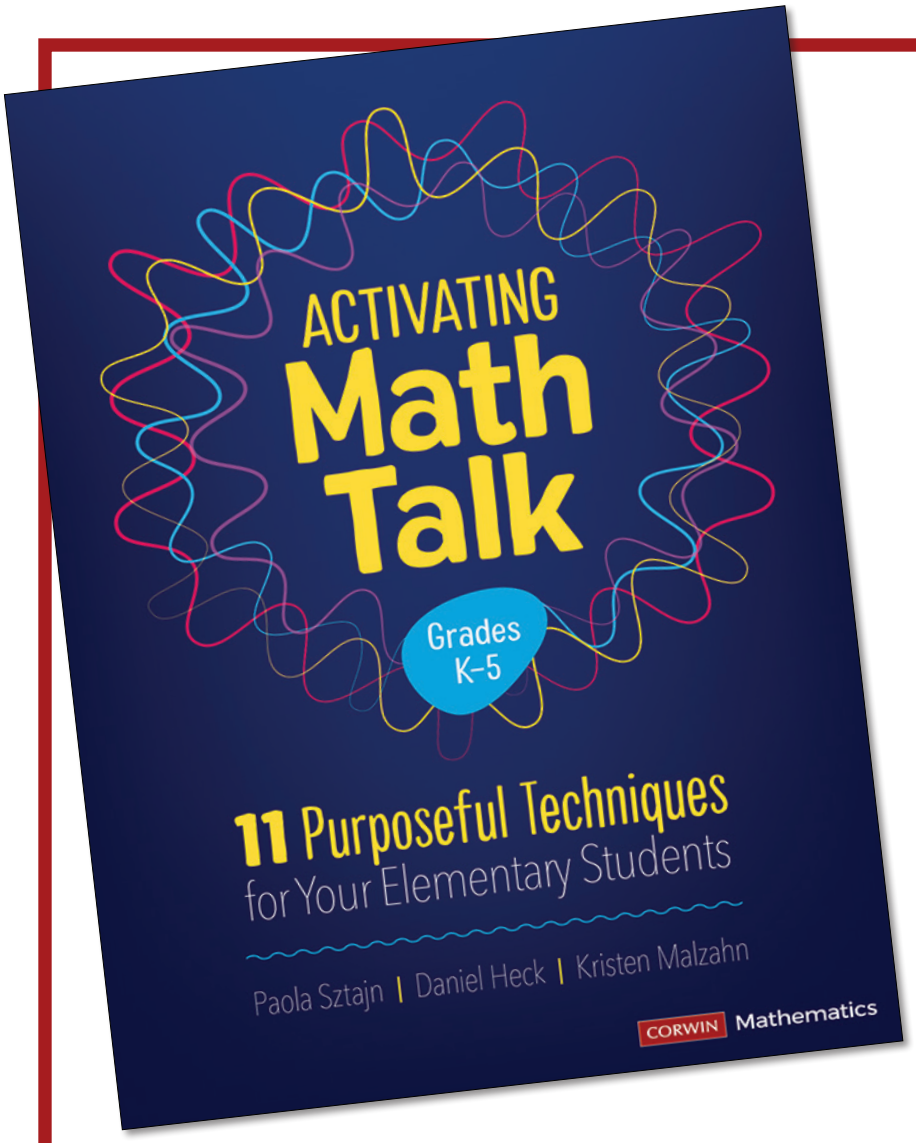

Thank you

FOR YOUR INTEREST IN CORWIN

Please enjoy this complimentary excerpt from *Activating Math Talk* by Paola Sztajn, Daniel Heck, Kristen Malzahn.

LEARN MORE about this title, including Features, Table of Contents, and Reviews.

CORWIN Mathematics

GUIDING PRINCIPLES FOR EFFECTIVE MATH INSTRUCTION OF EMERGENT MULTILINGUAL LEARNERS

Established principles can be used to engage emergent multilingual learners in high-quality math discourse that enables all students to make sense of problems and persevere in their learning. Driscoll, Heck, and Malzahn (2012) suggested three principles when discussing emergent multilinguals:

1. **Challenge students**: It is important to engage emergent multilingual learners in learning opportunities with challenging math tasks. These tasks require students to go beyond using memorized facts or procedures to solve a problem. Engaging emergent multilinguals with these tasks supports equitable access to opportunities to learn.
2. **Use multiple modes of communication**: Communication that is inviting and inclusive of emergent multilinguals uses many types of representations and communication tools. Using gestures, pictures, diagrams, and concrete objects, as well as multiple languages, gives students access to the math and can make the difference between students understanding a problem or lacking the chance to know what is being asked of them mathematically. Multiple modes of communication draw on students' assets to help them think through a problem and more readily express their thinking and reasoning.
3. **Promote academic language**: It is important to support emergent multilingual learners in developing academic language. This means encouraging their preferred communication approaches (such as code-switching, using analogies, or speaking in their first language first) and also helping them connect their ideas to academic English vocabulary, particularly in math. They are experts in learning language; they are doing it all the time! The strategies they use can benefit your whole class, supporting academic vocabulary development for all young learners as emergent math communicators.

These three principles are embedded in the Math Discourse Matrix (Figure 1-2), particularly in the components of responsive discourse.

For example, under modes of communication, the matrix points out the use of multiple modes, including everyday and academic language. Figure 2-1 details a number of ways these principles can be achieved in the classroom. All these ideas can become reality in the classroom when teachers purposefully and appropriately plan for them!

THINK ABOUT IT

How often do you already use these three guiding principles in your own instruction? What might you do to further improve on them?

Figure 2-1 • Guiding Principles of Effective Mathematics Instruction Involving Emergent Multilingual Learners

GUIDING PRINCIPLES	TEACHER ACTIONS
CHALLENGE STUDENTS	• Scaffold tasks to maintain a high level of cognitive demand while building on students' prior knowledge • Question students to extend their thinking and promote sense-making • Model convincing mathematical arguments, clear explanations, a variety of solution strategies, and the process of making conjectures and generalizations • Prompt students to ask questions, consider different solutions, conjecture, and generalize • Encourage students to share their solutions using justifications, convincing mathematical arguments, and clear explanations
USE MULTIPLE MODES OF COMMUNICATION	• Highlight different ways mathematical ideas are communicated (e.g., diagrams, drawings, gestures, technology, concrete objects, mathematical symbols) • Help students learn to diagram mathematically and promote use of diagrams • Provide students with specific tools to communicate mathematical ideas in multiple ways • Prompt students to represent a concept or solution using one or more modes in addition to language—gestures, writing/drawing, technology, concrete objects, mathematical symbols • Make explicit connections between different ways mathematical ideas are represented/communicated
PROMOTE ACADEMIC LANGUAGE	• Provide students with ample opportunity to communicate (e.g., read, write, speak) about mathematics • Vary student groupings to purposefully promote mathematical discussions (e.g., pairing emergent multilingual learners with non-emergent multilingual learners, including peers who can communicate in the emergent multilingual learners' primary language) • Model mathematical language and clear explanations • Prompt students to use mathematically accurate language • Connect mathematical symbols to mathematical language • Rephrase a student's everyday language with proper mathematical language • Request student clarification of statements

Source: Adapted from Driscoll, Heck, and Malzahn (2012).