THE CCTM BOOK CLUB

*Smarter Than We Think: More Messages About Math, Teaching, and Learning in the 21st Century

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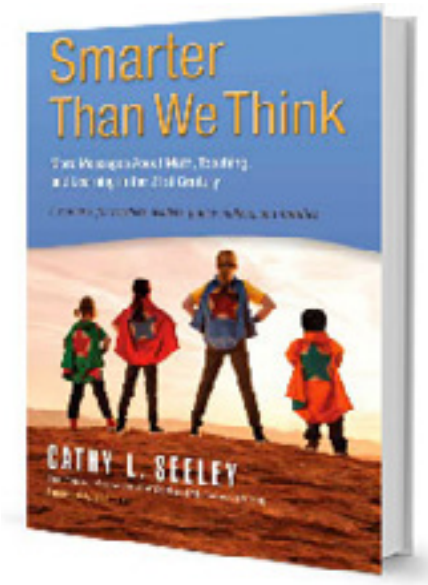
"Smarter Than We Think: More Messages About Math, Teaching and Learning in the 21st Century"

by Cathy L. Seeley



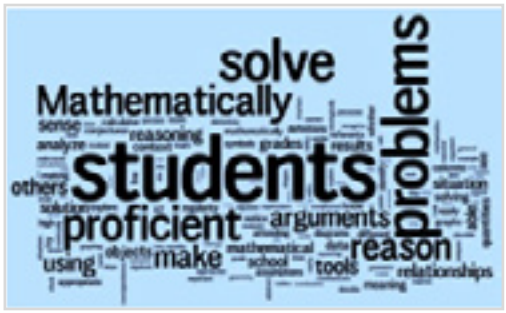
Is a valuable resource for teachers, administrators, instructional coaches, and college professors. Don't let the size of this volume frighten you away from this powerful collection of mathematics education messages. Seeley delivers 40 stimulating messages, each containing opportunities for reflection and focused collaboration, generating energy for a positive difference in learning experiences for today's students. Almost every message throughout the book contains strategies or anecdotes that Seeley has experienced throughout her years as a classroom teacher; as an instructional coach; and as a Peace Corps volunteer. Each message can stand alone so that the reader can pick and choose the topic that most interests them. The book is divided into four different sections: Messages About Who We Teach and How They Learn; Messages About Teachers and Teaching; Messages About Leadership, Issues, and Policy; and Messages About Thinking Mathematically in a Common Core World – Mathematical Practices and More. While the book is divided into these four sections, the messages are still interconnected. As each section is outlined below, the common theme throughout addresses the needs of the 21st century learner and the changes that teachers need to make to meet those needs.

The first section, "Messages About Who We Teach and How They Learn" encapsulates many of the aspects of teaching a diverse population, as you would expect. The messages in this section include strategies for working with English Language Learners, motivating students, working with varying ability levels, including families in a student's learning, and the impact of conceptions people have about a student's mathematical capabilities. The first message is the same title as the book and focuses on how students view themselves as mathematics learners. Seeley sights the interesting "Washington Post social experiment involving Joshua

Bell" (p. 3) and relates it to a teacher's preconceived ideas about their students and their abilities. This message, as well as several others in this section, reference Carol Dweck's work involving growth mindset, and the effect that both a teacher and a student can have on learning if they believe the mathematics cannot be learned by all. Woven throughout the messages in this section are research-based instructional techniques to use with struggling students, to motivate students, and to bring value to the content.

In part two, "Messages About Teachers and Teaching," Seeley adds cautions and suggestions to common instructional strategies. For educational professionals working with pre-service mathematics teachers or teachers learning to transition from a traditional 'stand and deliver' method of instruction, the messages in this section can provide great discussion points. Through real experiences that Seeley has had with students, readers are challenged to reconsider some instructional practices such as: the teaching of 'tricks' to learn concepts, 'covering' the content, and many other common practices. As traditional methods of instruction are challenged, practical alternatives are outlined that purport the importance of students working on high quality tasks that promote student conceptual thinking and interactions with the material and each other.

The messages in part three, "Messages about Leadership, Issues, and Policy" remind us as educators to be thoughtful users of research, wary of superficial information. Considering that today's students are also bombarded with information, perhaps it is time consider how we might restructure high school math courses to fit the needs of today's graduates—enabling them to use data effectively. While educators may be overwhelmed by too much change implemented too quickly, Seeley sends an important message regarding sustainable change: it requires time, collaboration, and support for all involved in the process. In addition, the author reminds us that Professional Learning Communities provide a venue to advocate system changes. Therefore, we must all work together to meet the needs of our students in a quickly changing world.



Part four, "Messages About Thinking Mathematically in a Common Core World – Mathematical Practices and More" provides a deep view of the eight Common Core State Standards for Mathematical Practice and what they look like for students in the mathematics classroom. Seeley talks about "upside-down teaching" where students are exposed to rich mathematical tasks exciting them about the world of mathematics and thus creating a desire in students to learn the content of the mathematics necessary to problem solve. This section provides multiple messages, to all educators, about the need to shift classroom instructional practices to "how we teach" from "what we teach," giving students the ability to think and problem solve.

As outlined above, this book provides great resources and intriguing vignettes for anyone interested in mathematics education. The versatility of this book allows the reader to take the book as a whole or to take the messages as needed for coaching or professional learning purposes. (**See pp. 12–13** for how the CCTM board used Message 33 as an introductory discussion for their meeting.) For parents and community members, messages may provide answers to questions regarding shifts

and changes in today's evolving mathematics classrooms. For the mathematics education professor or instructional coach, the messages may be used individually in order to highlight an area of focus. Finally, classroom teachers of all grade levels and various experiences can use the approaches, reflection questions, and resources provided in each message to improve their knowledge and practice, either individually or collaboratively. Regardless of the reader's background, the overarching message is to provide opportunities for students to engage in worthwhile problems and rich discussions in order to develop strong mathematical thinkers for the 21st Century.

If you would like to join us for an on-line discussion of this book, please visit us at http://comath.ning.com/forum/topics/smarter-than-we-think-by-cathy-seeley

Possible discussion questions, in addition to those provided in each message:

1. As a mathematics educator, which message informs your work the most?
2. Which message motivated you to view mathematics education?
3. Does a particular message provide you with an "aha" moment?

Fast Connections

The Colorado Mathematics Teachers Network is a professional learning community for Colorado mathematics teachers and educators. It is a place where teachers can create Forums and private Groups to discuss all the unique challenges of mathematics education in Colorado. The CCTM Book Club can be accessed here.

Folks can join at: http://comath.ning.com/