

We developed this three-book series to create a critical and timely resource that aligns articles previously published in the National Council of Teachers of Mathematics (NCTM) journals with the Common Core State Standards for Mathematics (CCSSM; National Governors Association Center for Best Practices and Council of Chief State School Officers 2010). Using this series, teachers can readily find outstanding articles that directly support students' development in the specific mathematics content they are learning (and the teachers are teaching) for that day, week, or unit. The three volumes are divided by grade level: K through 5, 6 through 8, and 9 through 12.

This series is unique because it provides classroom teachers with explicit directions, through connections and links, to peer-reviewed activities that correspond to whatever standard they are addressing that very day. NCTM journal articles provide tested ideas and samples of K–12 student work so that lessons on a variety of topics can enhance learning. We focus on the content standards but also identify links to the Standards for Mathematical Practice where appropriate.

The K–5 and 6–8 books in the series are organized first by grade level, then by content domain, and finally by cluster. The current volume, for grades 9–12, is organized first by mathematical topic, and then by content domain and cluster, in keeping with the Common Core Standards for high school mathematics. Teachers can use these categorizations to see a listing of related articles with brief descriptions of how each article relates to the standard under which it is classified and a notation of which of the Standards for Mathematical Practice it addresses. Each entry also indicates other features or options that the article offers, such as whether it includes activity sheets, incorporates technology, makes connections with other disciplines, or differentiates the lesson in some way.

In this volume, Frederick Dillon joins us as a coauthor, and we cover relevant articles from *Mathematics Teacher (MT)* between 1999 and May 2015, since those articles are easily accessed online with an NCTM membership. The primary audience for this book is grades 9–12 mathematics classroom teachers, and the content focuses on the standards for those grades. High school teachers will be able to quickly search for meaningful activities and tasks to use with their students to advance their understanding of the content and practices identified in CCSSM. A second audience for this book is educators who work directly with high school mathematics teachers or students, such as mathematics teacher educators, mathematics resource teachers or coaches, special education teachers

involved in teaching mathematics, curriculum specialists, mathematics department chairs, and school administrators.

The idea for this series grew over the course of a semester in which we were both teaching mathematics methods courses to preservice teachers at our respective universities. During class sessions, we noticed that teacher candidates realized the urgency and importance of teaching mathematics in a way that provided K–12 students with meaningful and authentic mathematical tasks related to CCSSM. However, they were restricted by their experience and understanding of the mathematics content, as well as by their understanding of the transition to CCSSM. These preservice teachers could take an activity given to them and begin to teach it effectively in their field placement, but on their own they had difficulty finding meaningful activities that were aligned with the CCSSM content standards and practice standards. In class, teacher candidates would often ask questions about lessons in the NCTM journals: “What grade would this activity be used in?” “During what standard-based unit would it be best to use this activity?” “Where can I find an activity to teach the volume of prisms?” “How do I determine ways to develop the mathematical practice?” It was apparent that they were striving to be effective teachers but needed help in aligning lessons with both the content standards and the practice standards of the Common Core. Teacher candidates are constantly seeking resources on the Internet. These are often lessons that have not been carefully tested or peer reviewed. We struggle to get our preservice teachers to avoid this practice—but it highlights the need for resources that provide more meaningful options and explicit alignment with CCSSM.

During this same semester, we regularly used activities from NCTM’s journals *Teaching Children Mathematics*, *Mathematics Teaching in the Middle School*, and *Mathematics Teacher* for the various methods courses, both during class sessions and for assignments in field work. Teacher candidates were fully aware that NCTM journals provided useful resources, but they were overwhelmed by the task of correctly selecting activities from the journals that aligned with the specific content they were teaching. That gap in resources provided the seed for this series.

Although we initially thought of the series as a response to teacher candidates’ needs, we consulted with numerous in-service classroom teachers to see whether they would be interested in the series volume for their grade level, and the response was extremely positive. Many teachers in the group had been teaching the same grade for many years and were now tasked with teaching new topics—thus finding themselves unable to draw from the lessons they had been using. The overall reaction

was that classroom teachers are seeking support for the new CCSSM-based curriculum and would greatly appreciate a resource that provides ready-made alignment with high-quality, peer-reviewed, engaging activities that they can use with their K–12 students.

This book provides a timely resource to preservice and in-service teachers that will help ensure that their use of activities that correctly align with the CCSSM content and practice standards—which they are aiming to address successfully in their classrooms. Because all articles published by NCTM are peer reviewed at the national level, we presume the pedagogy in each is sound and of exceptionally high quality.

These publications also directly align with NCTM’s equity guidelines because many of the articles have connections with teaching practices that respond to students’ different needs and have diversity listed as one of their key words. In addition, numerous articles foster “mathematics for all,” and many specifically address the learning of students with special needs. We align all these articles with the CCSSM content standards and the Standards for Mathematical Practice.

We must also discuss what this book does not do. This book does not contain all articles published in *MT*. We found that some articles did not align with a specific CCSSM content standard for various reasons, such as articles that were more pedagogy based than content focused, did not align with a particular CCSSM content standard, aligned better with a middle school (grades 6–8) standard, and so on. Some articles not included were of extremely high quality but simply did not align with the purpose of this particular book. Furthermore, many articles from particular *MT* departments, such as Calendar Problems, were not included because each article or collection of problems covered so many different topics that it was impossible to categorize.

The CCSSM Standards for Mathematical Content and Standards for Mathematical Practice are both new to the mathematics education community and complex in nature. We welcome your suggestions as we add to this collection of ideas.

Sarah B. Bush and Karen S. Karp

Reference

National Governors Association Center for Best Practices, Council of Chief State School Officers (NGA Center and CCSSO). *Common Core State Standards Mathematics*. Washington, D.C.: NGA Center and CCSSO, 2010. <http://www.corestandards.org/Math>.

We believe that the Common Core State Standards correlations in this book will be an invaluable resource to help you make the most of the rich articles and resources in *Mathematics Teacher* (MT). We suggest the following as the most efficient way to use this resource in your classroom:

- First, identify the content standard or standards that you will be addressing in the day, week, or month for which you are planning. Then go to the table of contents, which is organized by topic, domain, and cluster. Click on the domain or standard of interest, and that will take you directly to the section in this e-book with abstracts for the *Mathematics Teacher* articles that we have identified as aligned with that standard. Many articles are aligned with multiple content standards. (For a few content standards, we were unable to find aligned *MT* articles. Those standards have been omitted.)
- Once you are in the right section, click on the name of the *MT* article, and you will be linked directly to the appropriate page at www.nctm.org where you can download the article if you are a subscribing member, or purchase it.
- You can also click on the CCSSM domain in that section, and you will be linked directly to the domain page at www.corestandards.org, which has detailed information about each standard and cluster.

As you are reviewing the abstracts for potential articles that contain lessons and activities aligned with your chosen standard, you will notice several other helpful indicators. We have identified the practices in the Standards for Mathematical Practice (e.g. MP.1, MP.2, etc.) that we believed would be most developed by students' work with the activity in the article. This list is not exhaustive, and how you structure and use the lesson will largely determine which practices are addressed. Additionally, we indicated whether the activity in the article makes interdisciplinary connections **I**, encourages the use of technology **T**, includes methods for differentiation **D** (special education, English language learners, struggling learners, gifted, or other), or supplies reproducible activity sheets **A**. By including the Standards for Mathematical Practice and other connections, we hope you can easily choose articles that best meet the needs of your students.