CENTER FOR ELEMENTARY MATHEMATICS AND SCIENCE EDUCATION
1225 EAST 60TH STREET, CHICAGO, ILLINOIS 60637
P (773) 702-3921 F (773) 702-4312 CEMSE.UCHICAGO.EDU

Differentiation in *Everyday Mathematics 4*

School districts across the country face the challenge of meeting the needs of a wide range of learners. Creating a classroom where mathematics content is accessible and engaging to all students is an important goal for our society. Making use of differentiated instruction is one way teachers can meet the needs of diverse groups of learners. Differentiation allows teachers to turn their classrooms into rich learning environments that provide students with multiple avenues for acquiring content, making sense of ideas, developing skills, and demonstrating what they know (Heacox, 2012; Tomlinson, 2003).

The latest research suggests that an effective differentiation model should address five key principles: content, process, product, classroom management, and learning environment (Tomlinson & Murphy, 2015). These dimensions are not mutually exclusive and to be responsive to students' need they have to be considered in conjunction with one another. *Everyday Mathematics* meets the various needs of learners by attending to all of these elements in Tomlinson's model for differentiation.

Content: A rich and varied curriculum where goals are clearly outlined is a necessary foundation that allows teachers to differentiate by modifying the focus skills and content (Tomlinson, 2013). To this end, *Everyday Mathematics* gives teachers information about students' learning trajectories, or paths to achieving learning goals. The program also contains features that can be readily adapted or implemented to adjust the content for individual students. For example, a teacher might provide an Enrichment activity so students are able to apply or deepen their understanding of lesson content.

Process: Teaching needs to be engaging and responsive to learners' needs, which requires specific instructional strategies and learning opportunities. How teachers teach can be adapted to facilitate differentiation in the classroom. The materials should spur teachers to foster rich pedagogical interaction in the classroom, rather than focus on students completing activities such as worksheets (Remillard, 2011). Lessons in *Everyday Mathematics* are written to encourage teachers to model lessons concretely; make effective use of organizational tools such as diagrams, tables, charts, graphs and graphic organizers; and expose students to multiple strategies for solving problems. Language in student materials is carefully tailored to ensure accessibility for all learners without reducing the cognitive demand of the lessons.

Product: Effective differentiation is founded on a detailed understanding of students' strengths, misconceptions, and weaknesses (Baker, Gersten, Lee, 2002). To develop this understanding, teachers need to have a rich body of assessment data to draw on, which must be gathered both informally and formally as students engage in mathematics. Assessments provide teachers the data they need to monitor student progress and make informed decisions about their learning (NCTM, 2014). *Everyday Mathematics* offers multiple opportunities for teachers to assess and monitor students' progress over time and to analyze their mathematical strengths and misconceptions. One example is the daily Assessment Check-In, which informs expectations for student performance on particular standards at specific points in the curriculum. And it gives targeted recommendations for supporting students who struggle meeting expectations and for challenging students who exceed expectations.

Classroom Management: Classrooms need to be organized to promote flexibility and facilitate learning (Tomlinson, 2015). *Everyday Mathematics* incorporates predictable routines that help engage students in mathematics in a variety of contexts. Predictable lessons features, such as mental math, the Math Message, and the frequent use of games, allow teachers to develop classroom routines. Also part of the design of EM4 is a variety of grouping strategies for promoting effective classroom discussions, while allowing students to learn from one another by listening and responding to their peers' successes and mistakes. To meet these needs, *Everyday Mathematics* lessons include whole-class and small-group instruction, as well as time for students to work in small groups, in partners, and individually.

Learning Environment: A positive learning environment is one in which students feel safe, respected, and accepted. *Everyday Mathematics* encourages a culture of respect among students, as well as between the teacher and students. The program begins with an appreciation of the mathematical sensibilities that students bring with them to the classroom and connects to students' prior and current interests and experiences, in part by embedding many of the problems in the curriculum in everyday contexts. *Everyday Mathematics* gives students opportunities to reflect on their own strengths and weaknesses while engaging in productive collaboration, hands-on activities, and rich mathematical discussions with their peers.

Accomplishing the goal of a differentiated classroom is among a teacher's most challenging tasks, and one of the most important objectives of the latest edition of *Everyday Mathematics* is to make differentiation achievable for all who use the

program. The authors of *Everyday Mathematics 4* examined every lesson through the lens of the diverse learning needs of students in today's classrooms and applied the latest research to make the lessons more accessible to students and teachers. EM4 has been designed to support students with a wide range of academic abilities and experience levels, allowing teachers to use it flexibly. The authors devised a range of ongoing supports to ensure that teachers can attend to all five dimensions consistently. *See Figure 1.*

Figure 1.

Support Feature	Frequency	Type	Purpose
Readiness	Daily	Center Cards	Students who need scaffolding
Extra Practice	Daily	Center Cards	Students who need additional practice
Enrichment	Daily	Center Cards	Students who need extensions
English Language Learners	Daily	Text feature in teacher materials; Online	Students who need English language support
Adjusting the Activity	Frequently	Text Feature in teacher materials	Students who need scaffolding and extensions
Common Misconception	Frequently	Text feature in teacher materials	Teachers who need information anticipating and recognizing common errors and misconceptions in students' thinking.
Academic Language Development	Frequently	Text feature in teacher materials	Students who need support using academic terms in the lessons
Assessment Check-Ins	Daily	Text feature in teacher materials	All students; Teachers who need to identify the needs of students who struggle to meet expectations at the given point in the year.
Summarize	Daily	Text feature in teacher materials	All students
Preview Math Boxes	2 lessons per unit	Student journal pages	Teachers who need to identify students' readiness for the upcoming unit so that they can plan instruction and choose appropriate differentiation activities.
Differentiation Support	Daily	Online	Students who need scaffolding and English language support
Games Differentiation	Frequently	Online	Students who need scaffolding and extensions

Teachers often feel they do not have the time they need to plan for differentiated instruction. This may reflect the fact that teachers often cannot find supports for differentiation in their curriculum, and feel forced to search for outside resources that they can use to differentiate. The structure and supports in *Everyday Mathematics* are designed to address these teacher concerns. As a rich curriculum with built-in instructional strategies and tools, EM4 relieves teachers of having to find or create additional materials. And this edition of *Everyday Mathematics* has an expanded toolbox of differentiation strategies, beyond those provided in previous editions, to allow teachers the time and tools to actually differentiate. Research shows that once teachers begin using differentiation strategies and tools, they find themselves teaching more efficiently. When learning is specifically tailored to student needs, teachers actually save time (Heacox, 2012).

Another difficulty teachers face is meeting the different requirements for individual students mandated by school districts. *Everyday Mathematics* fits naturally into a Response to Intervention (RTI) plan or a Multi-Tiered System of Supports. Students receive Tier 1, high-quality instruction in the general education classroom when *Everyday Mathematics* is being used. The Readiness, Extra Practice, and Adjusting the Activity features, as well as the Differentiation Support pages, provide a variety of suggestions for providing small group, Tier 2 support.

A third issue for teachers is having the necessary content knowledge to understand how mathematical skills and concepts build and increase in complexity. *Everyday Mathematics* is an educative curriculum designed to help teachers better understand the "big ideas" in the lesson content, and this allows them to anticipate students' common confusions and misconceptions. Each unit provides teachers with an overview of the important mathematics in each lesson, as well as a snapshot of how a particular content goal develops over the course of the year, helping teachers understand when to expect mastery with a concept or skill. In addition, Professional Development notes provide content background that helps teachers focus their instruction.

Effective differentiation is easily discussed but hard to enact. It requires careful assessment of students' progress, strengths and needs. Meaningful differentiation is very difficult in the absence of a rich curriculum. The supports built into *Everyday Mathematics* and discussed in this paper create a robust toolbox for teachers that make effective differentiation achievable every day.

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