

# **A Review of Primary Math Curricula**

Bambi Brewer & Emily Hamner

CMU-RI-TR-20-56

The Robotics Institute  
Carnegie Mellon University  
Pittsburgh, Pennsylvania 15213

August 2020

Copyright © 2020 Authors

This material is based upon work supported by the National Science Foundation under Grant No. 1831177.

## **Abstract**

This report presents results of a review of three of the most commonly used primary math curricula in the United States in 2018.

Upon reviewing data from the National Council of Teachers of Mathematics, we found the most common curricula in the United States for grades K-2 and 3-5 includes EnVision Math, Everyday Mathematics, and Math Expressions [2]. We conducted an in-depth analysis of the curricula to create a comprehensive K-5 math topic curriculum review.

For grades K-2, we reviewed the two most popular curricula, *EnVision Math* from Scott Foresman/Pearson and *Everyday Mathematics* from the Everyday Learning/McGraw-Hill; taken together, these account for about 57% of the textbooks used in K-2 classes in the 2014-15 school year [2]. For grades 3-5, we reviewed *EnVision Math* [3] from Scott Foresman/Pearson, *Everyday Mathematics* [4] from the Everyday Learning/McGraw-Hill, and *Math Expressions* [5] from Houghton-Mifflin/Harcourt. These resources account for roughly 45% of the textbooks used in grades 3-5. All of these curricula are mapped to the Common Core Math Standards [7].

The results of our curriculum review are summarized in Figure 1. The topics covered across grades remained consistent, with the presentation and organization of them differing across curricula. We found that the majority of classroom time in elementary math is devoted to arithmetic, place value, and fractions. In the Common Core Math Standards, these topics correspond to the domains of Number & Operations and Operations & Algebraic Thinking. Though the Common Core standards also include domains for Geometry and Measurement & Data, the most common math curricula devote fewer lessons to these topics.

Because schools adopt new curricula only every few years, we were concerned that our curriculum review might not reflect current best practices in math education [2]. To address this potential issue, we supplemented our review with recent recommendations for effective math instruction [6][1]. The relevant results of our curriculum review are summarized in Figure 1. We found that the majority of classroom time in primary math is devoted to arithmetic, place value, and fractions.

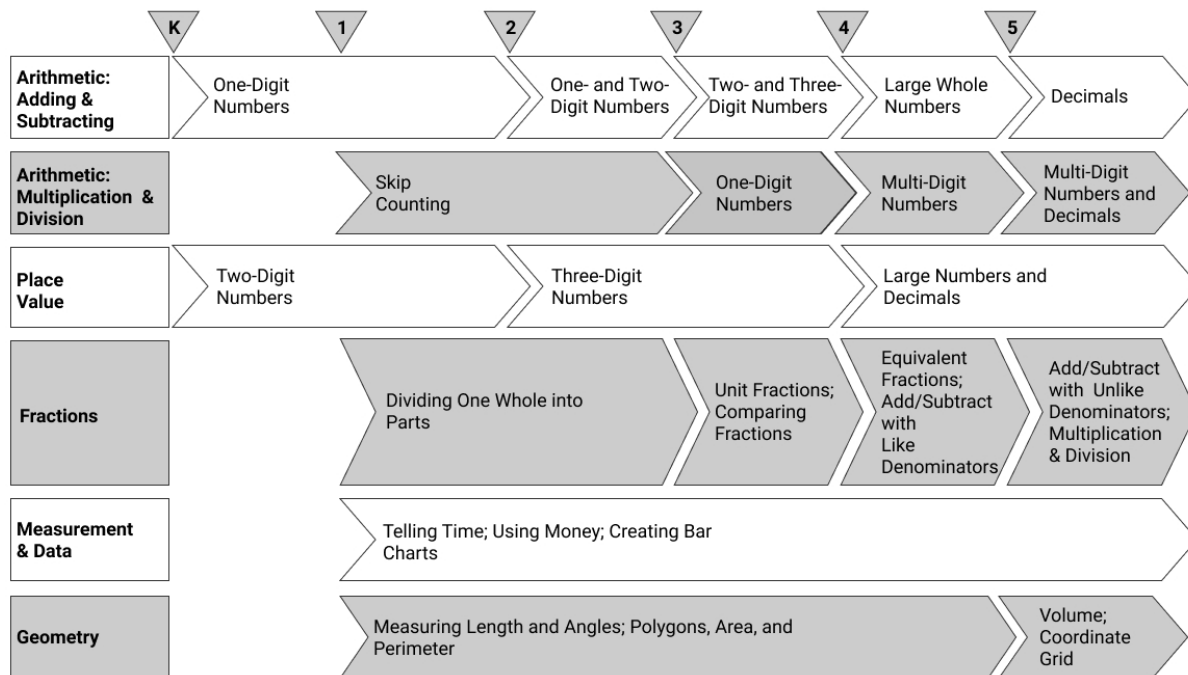


Figure 1. A summary of topics covered in primary math.

## References

- [1] J. Boaler and C.S. Dweck. 2016. *Mathematical Mindsets: Unleashing Students' Potential Through Creative Math, Inspiring Messages and Innovative Teaching*. Jossey-Bass; a Wiley Brand, San Francisco, CA.
- [2] J.A. Dossey and S.S. McCrone. 2016. *The Implemented Curriculum. In Mathematics Education in the United States 2016*. The National Council of Teachers of Mathematics, Inc, Reston, VA.
- [3] *enVisionmath 2.0* (Grades K-5). Pearson Education, Inc.
- [4] *Everyday Mathematics* (Grades K-5). Columbus, OH: McGraw-Hill Education. 2013.
- [5] *Math Expressions Common Core*. Houghton Mifflin Harcourt Publishing Company. 2016.
- [6] National Council of Teachers of Mathematics. 2014. *Principles to action: Ensuring mathematical success for all*. National Council of Teachers of Mathematics., Reston, VA.
- [7] National Governors Association Center for Best Practices (NGACBP) and Council of Chief State School Officers (CCSSO). 2010. *Common Core State Standards for Mathematics*. National Governors Association Center for Best Practices, Council of Chief State School Officers, Washington D.C.