

# Common to the Core States

## How Solid Is the Mathematics Core in Each State?



March 2018

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# Common to the Core States: How Solid Is the Mathematics Core in Each State?

## Introduction

The final draft of the Common Core State Standards (CCSS) was released in June 2010 by the National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO).<sup>1</sup> The NGA reports that 45 states had adopted the CCSS by June 2012.<sup>2</sup> All 45 of those states adopted the Common Core State Standards for Mathematics (CCSS-M).

Since the release of the CCSS and the adoption by 45 states, numerous states have reviewed their state mathematics standards. States have done a variety of things with the standards that include renaming the CCSS with the intent of denying they are the CCSS, repealing the CCSS with the intent of replacing them with standards of their own, or just making changes to the standards. Available information about the status of each state seems to be out of date, and most sources give no indication that actual standards were even looked at or compared.

The purpose of this project was to examine specifically each state's math standards to get a feel for the purity of the adoption of the CCSS-M and to see if non-adopting states' math standards or those of states claiming to have revised or replaced the CCSS appear to be influenced by the CCSS-M.

The Review and Comparison Activity section explains how this project was conducted. The Algorithm Antics and Key Standards Compared sections explain which standards were selected for comparison, and possibly why. The main feature of this report is a table with indicators comparing certain CCSS-M items with the standards documents for each state. A lengthy section containing a brief narrative for each state follows the main table. A section titled Repeal, Revise, Replace, Rebrand, Update, or Unique gives a breakdown of some information provided in the main table.

The last section provides information about three recommended sets of math standards, not including the deficient CCSS-M, for states to consider for adoption or use as a base in developing a new set of standards. It also makes suggestions for improving the CCSS-M if states chose to revise or use them as a base for developing standards. Appendix A provides the name, as best could be determined, that each state has for its math standards, and Appendix B provides the URL to download the math standards for each state or for the website page from where the standards can be downloaded.

## Review and Comparison Methodology

One of the first steps in this project was to identify helpful sources of information. Some of the available information mentioned in the introduction, briefly described below, was useful and often provided starting points.

Academic Benchmarks provides an online map with information about each state's status and a table indicating whether the state adopted with modifications, adopted verbatim, did not adopt, or withdrew from the CCSS-M.<sup>3</sup> The Common Core State Standards Initiative (CCSSI) provides a map showing whether states have adopted or not adopted. Links are provided to websites of adopting states.<sup>4</sup> The Association for Supervision and Curriculum Development (ASCD) provides a map and lists each adopting state with links to respective official state websites.<sup>5</sup>

The websites mentioned above did not indicate when their maps were created or posted. The National Conference of State Legislatures (NCSL) provides an adoption status map that indicates it was updated May 18, 2016.<sup>6</sup> *Education Week* provides a map and indicates it was updated October 27, 2016.<sup>7</sup> McREL provides a nice document identifying how each adopting state addressed the option of adding 15 percent to the CCSS.<sup>8</sup> The Education Commission of the States provides a brief with some information about legislative activity and executive branch action in some states. Its brief includes a table of each adopting state's name for the Common Core State Standards.<sup>9</sup> Abt Associates has published a report that describes some of the types of revisions that states have made.<sup>10</sup>

Information collected for each state includes adoption status, date, URL for math standards download, name of state-adopted standards, whether the document contains the CCSS logo or a similar one, and whether the standards document is a state document or the CCSS-M document. Items being compared between the state standards and the CCSS-M include Table of Contents, Introduction, how to read the grade-level standards, Common Core Standards for Mathematical Practice and narratives, Grade 2 Introduction, Grade 2 Overview, coding, Grade 2 Content Standards, Grade 2 standard 2.NBT.6, Grade 4 standard 4.NBT.4, Grade 5 standard 5.NBT.5, Grade 6 standard 6.NS.2, and Sample of Works Consulted. The collected information and comparison results are presented in table form with an Item Information and Code Key to explain each field and the coding.

Each state's official state department of education website was visited at least three times. Math-standards documents for each state were downloaded unless the state's document was the official Common Core State Standards for Mathematics document. The URL for each state's document or the webpage from which the document can be downloaded is provided in a separate table.

The state math-standards documents used for this project were the most recent ones that could be found for each state. Many states have other standards-related documents that include their standards. As much as possible, the documents used for this project were listings of the standards themselves, not frameworks, unpacked standards, extended content standards, quick reference guides, course of study, or other standards-related documents. Although these other related documents typically include the state standards, they were consulted for this project only when a document listing the standards was not available or could not be found.

## Algorithm Antics and Key Standards Compared

One definition of “antics” provided by the online MacMillan dictionary is “behavior that is considered to be deliberately stupid and likely to cause problems.”<sup>11</sup> Consider three possible algorithm “antics” used in the CCSS-M and state standards: use of the article “a” in place of “the,” “strategies based on place value,” and a two-year delay in requiring students to learn and use “the” standard algorithm for each of the four basic operations of addition, subtraction, multiplication, and division.

These antics appear, and often are, deliberate. Others can address whether they are stupid.

The use of “a” standard algorithm is substantively different from the more definitive use of “the” standard algorithm. There is a big difference between these two small words. The use of one over the other in math standards has resulted in continuing arguments among mathematicians and math educators. Mathematicians will likely use “the” standard algorithm for each of the four basic operations, while many math educators may prefer the use of “a” standard algorithm. The latter may lend itself to inefficient student-created algorithms and to the use of “strategies based on place values” serving as “alternative” standard algorithms. A paper titled “Common Does Not Equal Excellent” discusses problems related to “strategies based on place value” and the deliberate plan for a two-year delay in teaching what mathematicians consider the standard algorithms.<sup>12</sup> Common interpretation and instructional practice seems to have institutionalized this two-year delay, even though the CCSS-M does not prohibit the teaching of the standard algorithms earlier than required.

These antics and possible problems related to them have resulted in this project’s identifying and focusing on the following four standards for comparison:

**Grade 2 Standard 2.NBT.6**

Add up to four two-digit numbers using strategies based on place value and properties of operations.

**Grade 4 Standard 4.NBT.4**

Fluently add and subtract multi-digit whole numbers using the standard algorithm.

**Grade 5 Standard 5.NBT.5**

Fluently multiply multi-digit whole numbers using the standard algorithm.

**Grade 6 Standard 6.NS.2**

Fluently divide multi-digit numbers using the standard algorithm.

In addition to comparing these four CCSS-M standards with comparable or equivalent standards for each state, each state’s Grade 2 standards were compared side-by-side with the Grade 2 CCSS-M standards.

**Common to the Core States: How Solid Is the Mathematics Core in Each State?**

| State                | Status | Date     | CCSS Document | CCSS Logo | Table of Contents | Introduction | How to read the grade level standards | SMP | SMP Narrative | Grade 2 Introduction | Grade 2 Overview | Coding | Grade 2 Content Standards | Grade 2 Standard 2.NBT.6 | Grade 4 Standard 4.NBT.4 | Grade 5 Standard 5.NBT.5 | Grade 6 Standard 6.NS.2 | Sample Works Consulted |
|----------------------|--------|----------|---------------|-----------|-------------------|--------------|---------------------------------------|-----|---------------|----------------------|------------------|--------|---------------------------|--------------------------|--------------------------|--------------------------|-------------------------|------------------------|
| Alabama              | Rv     | Jan-15   | St            |           | S                 |              | NI                                    | I   | I             | I                    |                  | I      | I                         | I                        | I                        | I                        | I                       |                        |
| Alaska               | A      | Jun-12   | St            |           | S                 |              |                                       | I   | I             | I                    |                  | I      | I                         | I                        | NI                       | NI                       | NI                      |                        |
| Arizona              | Rv     | 12/19/16 | St            |           |                   |              |                                       | I   | S             | NI                   | I                | I      | I                         | NI                       | NI                       | NI                       | NI                      |                        |
| Arkansas             | Rv     | 7/14/16  | St            |           |                   |              |                                       |     |               |                      |                  | I      | I                         | I                        | NI                       | NI                       | NI                      |                        |
| California           | Rv     | 1/16/13  | St            | Y         | S                 |              |                                       | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       |                        |
| Colorado             | A      | Dec-10   | St            | Y         |                   |              |                                       | I   | I             | I                    |                  |        | I                         | I                        | NI                       | NI                       | NI                      |                        |
| Connecticut          | A      | 7/7/10   | C             | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Delaware             | A      | 8/19/10  | C             | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| District Of Columbia | A      | 7/22/10  | C             | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Florida              | Rv     | 2/18/14  | St            |           |                   |              |                                       |     |               |                      |                  | I      | I                         | I                        | I                        | I                        | I                       |                        |
| Georgia              | Rv     | 1/15/15  | St            |           |                   | I            | I                                     | I   | I             |                      | I                | I      | I                         | I                        | I                        | NI                       | I                       |                        |
| Hawaii               | A      | 6/18/10  | C             | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Idaho                | A      | 1/24/11  | CS            | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Illinois             | A      | 6/24/10  | CS            | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Indiana              | Rp     | Apr-14   | St            |           |                   |              |                                       | I   | NI            |                      |                  | S      |                           |                          | NI                       | NI                       | NI                      |                        |
| Iowa                 | A      | 11/17/10 | St            |           | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Kansas               | A      | Oct-10   | St            |           | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Kentucky             | A      | 2/10/10  | St            |           |                   | P            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       |                        |
| Louisiana            | Rv     | 9/23/16  | St            |           |                   |              | S                                     | I   | I             | I                    |                  | I      | I                         | I                        | NI                       | I                        | I                       |                        |
| Maine                | A      | 4/4/11   | C             | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Maryland             | A      | 6/22/10  | C             | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Massachusetts        | A      | Dec-10   | St            |           |                   |              |                                       | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Michigan             | A      | Jun-10   | SC            |           | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Minnesota            | A      | 2007     | St            |           |                   |              |                                       |     |               |                      |                  |        |                           |                          | S                        | S                        | S                       |                        |
| Mississippi          | Rv     | 1/21/16  | St            |           |                   | P            |                                       | I   | I             | I                    |                  | I      | I                         | I                        | I                        | I                        | I                       |                        |
| Missouri             | Rp     | 4/19/16  | St            |           |                   |              |                                       |     |               |                      |                  |        |                           | NI                       | NI                       |                          | NI                      |                        |
| Montana              | A      | 11/4/11  | St            |           | S                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       |                        |
| Nebraska             | A      | 9/4/15   | St            |           |                   |              |                                       |     |               |                      |                  |        | S                         | NI                       | NI                       | NI                       | NI                      |                        |
| Nevada               | A      | Oct-10   | SC            | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| New Hampshire        | A      | 7/13/10  | C             | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| New Jersey           | A      | 5/1/16   | SC            |           | I                 |              |                                       | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| New Mexico           | A      | 10/29/10 | C             | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| New York             | A      | Jan-11   | St            | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| North Carolina       | Rp     | 6/1/17   | St            |           |                   |              |                                       | I   |               |                      |                  | I      | I                         | NI                       | NI                       | NI                       |                         |                        |
| North Dakota         | Rv     | Ap 2017  | St            |           |                   |              | I                                     | I   | I             | NI                   | I                | I      | I                         | NI                       | NI                       | NI                       | NI                      |                        |
| Ohio                 | Rv     | Feb-17   | St            |           | S                 | P            | NI                                    | I   | I             | I                    | I                | I      | I                         | I                        | NI                       | NI                       | NI                      |                        |
| Oklahoma             | Rp     | 3/23/16  | St            |           |                   |              |                                       |     |               |                      |                  |        |                           | NI                       |                          |                          |                         |                        |
| Oregon               | A      | 10/29/10 | SC            | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Pennsylvania         | Rv     | 3/1/14   | St            |           |                   |              |                                       | I   |               |                      |                  |        |                           |                          |                          |                          |                         |                        |
| Rhode Island         | A      | Jul-10   | C             | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| South Carolina       | Rp     | 3/11/15  | St            |           |                   |              |                                       | S   | S             |                      | NI               | NI     | I                         | NI                       | NI                       | NI                       |                         |                        |
| South Dakota         | A      | 11/29/10 | CS            | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Tennessee            | Rp     | Apr-16   | St            |           |                   |              |                                       | I   | I             | S                    | NI               | I      | I                         | NI                       | NI                       | NI                       |                         |                        |
| Texas                | A      | 9/10/12  | St            |           |                   |              |                                       | S   |               |                      |                  |        |                           |                          |                          |                          |                         |                        |
| Utah                 | Rv     | Apr-16   | St            |           |                   | P            |                                       | I   | S             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       |                        |
| Vermont              | A      | 8/17/10  | C             | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Virginia             | A      | Sep-16   | St            |           |                   |              |                                       |     |               |                      |                  |        |                           |                          |                          |                          |                         |                        |
| Washington           | A      | 7/20/11  | CS            | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| West Virginia        | Rv     | 7/1/16   | St            |           |                   |              |                                       | I   | I             |                      |                  |        | I                         | I                        | I                        | I                        | I                       |                        |
| Wisconsin            | A      | 6/2/10   | SC            |           | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Wyoming              | A      | 6/16/12  | CS            | Y         | I                 | I            | I                                     | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       | I                      |
| Massachusetts        | D      | 11/29/16 | St            |           |                   |              |                                       | I   | I             | I                    | I                | I      | I                         | I                        | I                        | I                        | I                       |                        |
| New York             | D      | 5/2/17   | St            |           |                   | P            | S                                     | I   | I             |                      |                  | I      | I                         | I                        | NI                       | NI                       | NI                      |                        |

## Common to the Core States: How Solid Is the Core in Each State?

### Item Information and Code Key

#### Status

- A – Adopted
- Rp---Repealed
- Rv – Revised, modified, or updated
- D---Draft

**Date---**Date of adoption, revision, or modification of standards used for comparison

**URL** for math standards document download

#### CCSS Document

- St – State document download from state website
- C – state site links to CCSSI website for CCSS standards download
- CS – CCSS standards document downloads from the state website
- SC---State has taken the CCSS-M document and put their own cover on it and made minor cosmetic changes that may include font style, format, and color.

**CCSS Logo** Y-Yes--CCSS logo on state document

#### Table of Contents

One might expect a table of contents for math standards sets to be similar. One likely would not expect the high school topics of number and quantity, algebra, functions, modeling, geometry, and statistics and probability to be listed as they are in the CCSS Table of Contents. Standards for Mathematical Practice and Sample of Works Consulted were unique to the CCSS as Table of Content items.

#### Introduction

- I – Identical
- P – Partially identical

The Understanding Mathematics section of the CCSS introduction is presented and identical in the state document without the other introductory information, material, and quotes.

#### How to read the grade level standards

**SMP** Standards for Mathematical Practice

#### SMP Narrative

#### Grade 2 Introduction

#### Grade 2 Overview

**Coding** Domain coding and numbering in clusters

**Grade 2 Content Standards** the total set of Grade 2 standards

#### Grade 2 Standard 2.NBT.6

Add up to four two-digit numbers using strategies based on place value and properties of operations.

#### Grade 4 Standard 4.NBT.4

Fluently add and subtract multi-digit whole numbers using the standard algorithm.

#### Grade 5 Standard 5.NBT.5

Fluently multiply multi-digit whole numbers using the standard algorithm.

#### Grade 6 Standard 6.NS.2

Fluently divide multi-digit numbers using the standard algorithm.

#### Sample of Works Consulted

#### Additional Code Key Information

**I---Identical** Identical or substantively identical

Example: Alabama starts some narratives off with “These students...” while the CCSS starts of with “Mathematically proficient students...”. They are labeled as identical if they are substantively the same.

#### NI---Nearly Identical

The text may have changes from the CCSS document presentation. These minor wording and possible rearrangements of order do not change the essence of the CCSS standard(s) they are based on. The Academic Standards of institutions of higher education would view this as plagiarism if it were the work of a student or academician.

#### S---Similar

Similar in nature to what the text is conveying but the text appears to be written anew, rather than copied with minor changes, in such a manner as to likely not be viewed as plagiarism if it were the work of a student or academician in an institution of higher learning.

If an item in the table is left blank, either that item isn't present in the state document or what is in the state document is not comparable to the item found in the CCSS-M document.

## State-by-State Narratives

The narrative for each state is not intended to provide complete information but rather additional information supplementing project findings as reported in the main table. Endnotes are not provided for information when the source is a state's standards document or the state webpage where the document can be downloaded. Sources with those URLs are provided in the table for URL math standards download. Phrases or portions of standards appear in quotation marks, while whole standards appear in italics. Some words have been formatted in bold for emphasis.

### Alabama

The cover of the 2015 Revised Alabama Course of Study for Mathematics features a graphic showing the Common Core Standards for Mathematical Practice as the base foundation. Although the state website indicates Alabama College and Career Ready Standards as the name of the standards, this name does not appear anywhere in the math-standards document.

### Alaska

Alaska was one of five states that initially did not adopt the CCSS. While that seems to be the official position, the math standards adopted in June 2012 and reviewed and compared for this project are identical or nearly identical to the CCSS-M. There are, however, a few differences. This Grade 2 Alaska standard, not in CCSS, reads *Identify and continue patterns. 2.OA.5. Identify, continue and label number patterns (e.g., aabb, abab). Describe a rule that determines and continues a sequence or pattern.* In the Measurement and Data Domain Represent and Interpret Data section, Alaska's standard 2.MD.9, which reads *Collect, record, interpret, represent, and describe data in a table, graph or line plot.*, is considerably different from the CCSS standard 2.MD.9: *Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.*

Some of the differences in the Alaska standards are actually worse than CCSS-M. The Alaska standard 4.NBT.4 requires that students *Fluently add and subtract multi-digit whole numbers using any algorithm.* This is a weaker standard than the CCSS standard, which says, "using **the** standard algorithm." In Standard 5.NBT.5 for multiplication, Alaska writes, "using **a** standard algorithm," whereas the CCSS-M standard says, "using **the** standard algorithm." Alaska's standard 6.NS.2 is essentially identically to the CCSS standard, even though it calls for dividing with whole numbers where the CCSS just says numbers.

### Arizona

On Dec. 19, 2016, the Arizona State Board of Education voted to adopt revisions to its Common Core K-12 standards.<sup>13</sup> These newly adopted standards were used for this review. Some Arizona standards contain minor changes that could have significantly different interpretations by different practitioners in the classroom. Arizona has changed CCSS Grade 2 Standard 2.NBT.6 (*Add up to **four** two-digit numbers using strategies based on place value and properties of operations*) and instead asks students to *Add up to **three** two-digit numbers using strategies based on place value and properties of operations.* The Arizona Standard 4.NBT.4 reads, *Fluently add and subtract multi-digit whole numbers using **a** standard algorithm.* This is not the same as the CCSS standard, which says, "using **the** standard algorithm." The same thing is done with standard 5.NBT.5 for multiplication and standard 6.NS.2 for division. Because of the potentially

significant effect of these minor changes, these individual standards are rated as Nearly Identical rather than Identical.

### **Arkansas**

The links for the Arkansas K-8 math standards adopted July 12, 2010, went directly to the math standards on the CCSSI website. The state website indicates those standards are valid through June 30, 2017. The standards reviewed for this comparison were adopted July 14, 2016. It is not clear what Arkansas has gained with their new adoption. Although Arkansas has documents of its own for the 2016 standards, those documents do not include any introduction, table of contents, Standards for Mathematical Practice, grade-level introduction, or grade-level overview.

The 2016 content standards for Grade 2 are identical to the CCSS-M standards with the exception of one addition: a Grade 2 standard, 2.GA.4, that reads, *Recognize that equal shares of identical wholes need not have the same shape*. In addition, the revised Arkansas standards repeat the “**the** standard algorithm” vs. “**a** standard algorithm” sleight-of-hand. The Arkansas standard 4.NBT.4 reads, *Add and subtract multi-digit whole numbers with **computational fluency** using **a** standard algorithm*. This is different from the CCSS-M standard that reads, *Fluently add and subtract multi-digit whole numbers using **the** standard algorithm*. Arkansas has the multiplication standard 5.NBT.2 of “using **a** standard algorithm,” while the CCSS-M standard requires the use of “**the** standard algorithm.” Arkansas’s division standard 6.NS.2 states, *Use computational fluency to divide multi-digit numbers using **a** standard algorithm*. By contrast, the CCSS standard requires, *Fluently divide multi-digit numbers using **the** standard algorithm*.

As in Arizona’s case, these changes, even if appearing to be only slight, may have significantly different interpretations by different practitioners and may result in considerably different classroom instruction. Thus, these individual standards are rated as Nearly Identical rather than Identical.

### **California**

California has added *Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year)* to the end of Grade 2 standard 2.MD.7. With the exception of this minor addition, the California Grade 2 standards are identical to the CCSS-M.

### **Colorado**

Colorado has presented its standards with a format and organization different from the presentation of the standards in the CCSS-M document. While the Colorado standards are not coded, each standard is followed by the CCSS-M code that corresponds to the identical standard. Colorado’s algorithm-related standards that correspond to CCSS-M standards 4.NBT.4, 5.NBT.5, 6.NS.2 all say, “using standard algorithms,” while the CCSS standards say “using **the** standard algorithm.” This is similar to the changes Arkansas and Arizona made and may result in different interpretations resulting in inconsistent classroom instruction.

### **Connecticut**

Connecticut’s *Common Core State Standards Library* webpage has a direct link to the CCSS-M document on the CCSSI website. Connecticut’s website does have some math-standards-related classroom materials available for download, but it appears the document on the CCSSI website is the state’s adopted set of standards.

## Delaware

The Delaware Department of Education's website links directly to the CCSSI website for that state's math standards.

## District Of Columbia

The District of Columbia Public Schools' website links directly to the CCSSI website for the District's math standards.

## Florida

Florida adopted the CCSS in July 2010. In January 2014, the Florida Department of Education made changes to the CCSS in response to public comments.<sup>14</sup> Florida uses the same coding as the CCSS but adds "MAFS" (Mathematics Florida Standards) in front of the coding and adds a cluster number in the second-to-last place in the code sequence. Example: Florida codes the CCSS standard 2.OA.4 as MAS.2.OA.3.4, with the 3 being the cluster number. Identical CCSS coding is embedded in the Florida code.

Florida added a Grade 2 standard, MAFS.2.NBT.1.a, that is not in the CCSS standards:  
*Determine the unknown whole number in an equation relating four or more whole numbers. For example, determine the unknown number that makes the equation true in the equations  $37 + 10 + 10 = \underline{\hspace{1cm}} + 18$ ,  $? - 6 = 13 - 4$ , and  $15 - 9 = 6 + \underline{\hspace{1cm}}$ .*

Florida also expanded on two other CCSS-M standards, without changing their essential meaning. The CCSS-M Standard 2.MD.2 reads, *Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.* Florida has changed the wording for this standard to read as MAFS.2.MD.1.2: *Describe the inverse relationship between the size of a unit and number of units needed to measure a given object. Example: Suppose the perimeter of a room is lined with one-foot rulers. Now, suppose we want to line it with yardsticks instead of rulers. Will we need more or fewer yardsticks than rulers to do the job? Explain your answer.*

The other expansion is to CCSS-M standard 2.MD.8, which requires students to *Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately.* Example: *If you have 2 dimes and 3 pennies, how many cents do you have?* MAFS.2.MD.3.8 says, *Solve one- and two-step word problems involving dollar bills (singles, fives, tens, twenties, and hundreds) or coins (quarters, dimes, nickels, and pennies) using \$ and ¢ symbols appropriately. Word problems may involve addition, subtraction, and equal groups situations.* Example: *The cash register shows that the total for your purchase is 59¢. You gave the cashier three quarters. How much change should you receive from the cashier?* a. *Identify the value of coins and paper currency.* b. *Compute the value of any combination of coins within one dollar.* c. *Compute the value of any combinations of dollars (e.g., If you have three ten-dollar bills, one five-dollar bill, and two one-dollar bills, how much money do you have?).* d. *Relate the value of pennies, nickels, dimes, and quarters to other coins and to the dollar (e.g., There are five nickels in one quarter. There are two nickels in one dime. There are two and a half dimes in one quarter. There are twenty nickels in one dollar).*

The addition of one standard and the expansion and word changes to two standards without altering the meaning of those standards leaves the Florida standards identical, in essence, to the CCSS-M.

## **Georgia**

The Georgia State Board of Education approved the adoption of revisions to the CCSS math standards on January 15, 2015.<sup>15</sup> With the exception of one minor change, the Georgia Grade 2 standards are identical to the CCSS-M. Georgia Grade 2 standard MGSE2.NBT.7 reads, *Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method.* This is identical to the first portion of CCSS-M standard 2.NBT.7. Georgia has omitted the next part of the CCSS-M standard, which states, *Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method.* The CCSS-M standard 5.NBT.5 reads, *Fluently multiply multi-digit whole numbers using the standard algorithm.* The Georgia standard MGSE5.NBT.5 expects students to *Fluently multiply multi-digit whole numbers using the standard algorithm (or other strategies demonstrating understanding of multiplication) up to a 3-digit by 2-digit factor.* Allowing for “other strategies” which are non-specific in place of the standard algorithm weakens the standard. Different practitioners may interpret “other strategies” differently, resulting in different classroom instruction.

## **Hawaii**

The Hawaii State Department of Education website has a direct link to the CCSS-M document on the CCSSI website. Hawaii does have some math-standards-related classroom materials available for download on its website, but it appears the document on the CCSSI website is the state’s adopted set of standards.

## **Idaho**

The Idaho State Department of Education’s website link for the Mathematics Idaho Content Standards Grades K-12 downloads the official CCSS math standards document from the Idaho website.

## **Illinois**

The Illinois State Board of Education’s Math Learning Standards web page link for the state’s K-12 math standards downloads the official CCSS math standards document from the Illinois website.

## **Indiana**

Indiana had one of the highest-rated sets of mathematics standards in the country before adopting the CCSS in 2010. Nevertheless, the CCSS-M were reviewed and revised and approved in April 2014 as the new Indiana Academic Standards. This revision does not appear to match up to the high quality of Indiana’s previous highly rated standards, or even to the quality of the original CCSS-M.

Indiana uses a coding system similar to the one used for the CCSS-M standards. It does not appear by code that Indiana standards correspond to CCSS-M standards. A few Indiana standards resemble CCSS-M standards, but for the most part they appear to be quite different. Differences include more than just the wording of the standards and may involve less rigor and skill for the Indiana standards. Although the amount of change makes a side-by-side comparison difficult, it appears the Indiana Grade 2 standards address about 14 of the 26 Grade 2 CCSS-M standards.

The revised Indiana standards, like so many others, substitute “a” standard algorithm for “the” standard algorithm. The CCSS-M Grade 4 standard 4.NBT.4 requires students to *Fluently add and subtract multi-digit whole numbers using the standard algorithm*. Indiana’s comparable standard 4.C.1 reads, *Add and subtract multi-digit whole numbers fluently using a standard algorithmic approach*. Indiana’s corresponding algorithm-related standards for multiplication and division in Grade 5 and Grade 6 require “using a standard algorithmic approach” rather than “using the standard algorithm,” as required by the CCSS-M. There is also an Indiana Grade 6 related standard for division calling for whole numbers, while the corresponding CCSS-M standard does not.

Again, these changes, even if appearing to be only slight changes, may have significantly different interpretations by different practitioners and may result in considerably different classroom instruction. Because they differ considerably in meaning, the standards are rated as Nearly Identical rather than Identical.

### **Iowa**

Iowa added two standards to the Grade 2 CCSS-M Measurement and Data cluster. The first standard added states, *IA.1. Describe the relationship among standard units of time: minutes, hours, days, weeks, months and years*. The second standard added says, *IA.2 Use interviews, surveys, and observations to collect data that answer questions about students' interests and/or their environment*.

### **Kansas**

The cover of the Kansas College and Career Ready Standards Mathematics document says, “Grades K-12 with Kansas 15%.” Although this indicates Kansas added standards or wording to the CCSS-M, that was not true of the Grade 2 standards for Kansas. The Kansas document does indicate that the additions focus on Probability and Statistics and Algebraic Patterning.

### **Kentucky**

Kentucky’s math-standards document indicates the Kentucky Academic Standards were adopted into law in February 2010. This adoption took place before any draft of the CCSS was released for the public to see (the CCSSI released a draft of the CCSS standards for public review and comment on March 10, 2010 and released the final standards on June 2, 2010). Once the CCSS were published, they were designated the Kentucky Academic Standards.

### **Louisiana**

The only Louisiana standard reviewed that differs from CCSS-M is standard 4.NBT.4, which reads, *Fluently add and subtract multi-digit whole numbers with sums less than or equal to 1,000,000, using the standard algorithm*. This adds some clarity to the CCSS-M standard that says, *Fluently add and subtract multi-digit whole numbers using the standard algorithm*.

### **Maine**

The Maine Department of Education website links directly to the CCSSI website for that state’s math standards.

### **Maryland**

The College and Career-Ready Standards webpage on the Maryland State Department of Education website contains a direct link to the CCSSI website. In addition to adopting the CCSS, Maryland has developed some framework documents for each grade level. The

introduction in each of the grades K-5 framework documents says, *For further clarification of the standards, reference the appropriate domain in the set of Common Core Progressions documents found on <http://math.arizona.edu/~ime/progressions/>. For more information about the Progressions documents, see the “Common Does Not Equal Excellent” paper.*<sup>16</sup>

### **Massachusetts**

Although the Massachusetts Curriculum Framework for Mathematics indicates the framework merges the CCSS-M with additional Massachusetts standards, a side-by-side comparison of the Grade 2 standards shows no standards were added at that grade level. The Massachusetts Department of Elementary and Secondary Education indicates it is in “phase three” of a review/revision process for that state’s math standards.<sup>17</sup>

The draft of this revision shows the Standards for Mathematical Practice and their narratives are identical to the CCSS-M, except for a few minor changes in the narrative for one standard. The minor changes made to the Grade 2 standards leave them identical to the Grade 2 CCSS-M. In the draft standard 5.NBT.5, “numbers with at least 2 digits x 4 digits, 3 digits by 3 digits” has been added for clarification of a standard that otherwise remains identical to its corresponding CCSS-M standard.

### **Michigan**

Michigan has added its own cover and two front pages to the CCSS-M document.

### **Minnesota**

The Minnesota Department of Education website indicates Minnesota did not adopt the Common Core State Standards for Mathematics. Minnesota revised its math standards in 2007 and was scheduled to review those standards during the 2015-16 school year. That review has been postponed until 2020-21.<sup>18</sup>

Minnesota requires procedures including standard algorithms that correspond to similar CCSS-M standards. However, Minnesota reduces the delay in using standard algorithms, as it presents these standards one year earlier than the CCSS-M. For example, Minnesota Grade 3 standard 3.1.2.1 states, *Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.* This is one year earlier than in the CCSS-M; Grade 4 standard 4.NBT.4 requires students to *Fluently add and subtract multi-digit whole numbers using the standard algorithm.* For multiplication and division, also, Minnesota requires the use of procedures including standard algorithms one year earlier than the CCSS-M. Minnesota Grade 4 standard 4.1.1.3 says, *Multiply multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms.* By contrast, the CCSS-M delays this skill until grade 5; Grade 5 standard 5.NBT.5 reads, *Fluently multiply multi-digit whole numbers using the standard algorithm.* Minnesota Grade 5 standard 5.1.1.1 expects students to *Divide multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms. Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal.* This requirement appears one year earlier than in the CCSS-M (Grade 6 standard 6.NS.2 reads, *Fluently divide multi-digit numbers using the standard algorithm.*).

### **Mississippi**

The Mississippi State Board of Education adopted revised standards on January 21, 2016.<sup>19</sup>

Mississippi's revised Grade 2 math standards are identical to the Grade 2 CCSS-M, with a few noted exceptions. Mississippi has added Grade 2 standard 2.MD.8b, which states, *Fluently use a calendar to answer simple real world problems such as "How many weeks are in a year?" or "James gets a \$5 allowance every 2 months, how much money will he have at the end of each year?"* In parenthesis, "(including subtracting across zeros)" has been added to standard 4.NBT.4.

### **Missouri**

In July 2014, Missouri legislation required the state standards for English Language Arts (ELA) and mathematics to be reviewed and updated.<sup>20</sup> The CCSS-M appears to be the base for Missouri's new math standards adopted in April 2016. The similar but different coding Missouri now uses for its standards does not always correspond to the CCSS-M coding. Nevertheless, except for two or three standards, the content in the Missouri standards corresponds to content in the CCSS-M.

The wording of some standards is identical but with other standards is quite different. The Missouri standards are written in a cleaner, more streamlined manner than the CCSS-M, and the state has removed much of the CCSS-M's embedded pedagogy. An example of the streamlining can be seen in the Missouri Grade 2 NBT-B standard that reads, *Demonstrate fluency with addition and subtraction within 100*. CCSS-M's corresponding standard 2.NBT.5 expects students to *Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction*. Missouri has a Grade 2 standard reading, *Add up to four two-digit numbers*. This corresponds with CCSS-M standard 2.NBT. 6: *Add up to four two-digit numbers using strategies based on place value and properties of operations*.

Missouri Grade 4 NBT-A standard, *Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution*, corresponds to CCSS-M standard 4.NBT.4: *Fluently add and subtract multi-digit whole numbers using the standard algorithm*. Missouri's Grade 6 NS-B standard, *Demonstrate fluency with division of multi-digit whole numbers*, corresponds to 6.NS.2, which says, *Fluently divide multi-digit numbers using the standard algorithm*.

### **Montana**

Montana's math-standards document appears to be the CCSS-M document with some formatting modifications. Montana does have its own cover on the document and, in the pages for Standards for Mathematical Practice, has added a graphic page on grouping the practice standards. The Grade 2 Montana math standards are identical to the Grade 2 CCSS-M standards except for insertion of "within a cultural context including those of Montana American Indians or from a variety of cultural contexts, including those of Montana American Indians." This wording is incorporated into three standards: 2.OA.1, 2.MD.5, and 2.MD.10.

### **Nebraska**

Nebraska was one of five states that initially did not adopt the CCSS. The Nebraska State Board of Education adopted Nebraska's College and Career Ready Standards for Mathematics on September 4, 2015.<sup>21</sup> The state has four Nebraska Mathematical Processes that are different from the CCSS-M Standards for Mathematical Practice (although they serve the equivalent function).

The Nebraska Grade 2 math standards are similar enough to the CCSS-M Grade 2 standards that it appears Nebraska was heavily influenced by the CCSS-M and used it as a model. That is, most Nebraska Grade 2 standards correspond to a CCSS-M standard.

The Nebraska standards are similar but not identical to the CCSS-M. One change occurs in the Grade 2 standards, where Nebraska Grade 2 standard MA 2.1.2.d says, *Add up to three two-digit numbers [not four, as in CCSS-M 2.NBT.6] using strategies based on place value and understanding of properties.* Otherwise, the two standards are identical. Another change occurs in Nebraska standard MA 4.1.2.a, which drops the word “fluently” from CCSS-M standard 4.NBT.4: *Fluently add and subtract multi-digit whole numbers using the standard algorithm.* The Nebraska standards also drop the word “fluently” in the corresponding standards in Grades 5 and 6, addressing multiplication and division respectively.

### **Nevada**

Nevada’s changes to CCSS-M are purely stylistic. Nevada has put its own cover on the CCSS-M document, changed CCSS’s maroon font color to blue, changed font style, and added a blue stripe at the top of each page that says “Nevada Academic Content Standards for Mathematics,” in place of the maroon stripe that says “Common Core State Standards for Mathematics.”

### **New Hampshire**

The New Hampshire Department of Education’s website links directly to the CCSSI website for that state’s math standards.

### **New Jersey**

The New Jersey Department of Education website indicates the language arts and math standards were reviewed and adopted in May 2016 by the New Jersey Board of Education.<sup>22</sup> New Jersey has taken the CCSS-M document and designed its own cover, changed CCSS’s maroon font color to blue, changed the page number format, and added a blue stripe at the top of each page that says “New Jersey Student Learning Standards for Mathematics” in place of the maroon stripe that says “Common Core State Standards for Mathematics”. Although New Jersey has not included the CCSS introduction or “how to read the grade level standards” sections in its document, the New Jersey Grade 2 standards are identical to the Grade 2 CCSS-M.

### **New Mexico**

New Mexico has chosen to add the permitted 15 percent of state written standards to the CCSS ELA standards. There is no mention of any added standards for mathematics.<sup>23</sup> The link provided for standards on the New Mexico Public Education Department website goes directly to the CCSSI website.

### **New York**

The New York State Board of Regents adopted the CCSS in January 2011. There are a few additions to the math standards (highlighted in yellow) in kindergarten and first grade, but none appearing in any other grade levels.

New York is in the process of revising its math standards. On September 21, 2016, a new draft of its standards was released for public comment.<sup>24</sup> The comment period is closed and there is a revised 2017 draft. This 2017 draft presents Standards for Mathematical Practice and

corresponding narratives identical to the CCSS-M. A comparison of the 2017 draft for Grade 2 shows some minor word changes, apparently for clarification, but no substantial changes. The draft standards for Grade 2 are basically identical to the CCSS-M.

The 2017 draft 4.NBT.B.4 reads, Fluently add and subtract multi-digit whole numbers using a standard algorithm. This is not the same as the CCSS 4.NBT.4 standard, which says, “using the standard algorithm.” The same thing is done with standard 5.NBT.B.5 for multiplication and standard 6.NS.B.2 for division. Because of the potentially significant effect of these minor changes, these individual standards are rated as Nearly Identical rather than Identical.

### **North Carolina**

North Carolina adopted the Common Core State Standards on June 3, 2010. Seven years later, on June 1, 2017, the North Carolina Board of Education adopted a revised set of math standards. The available documents did not have any introductory information at the time the standards were reviewed. The standards for each grade level begin with the eight CCSS Standards for Mathematical Practice without any narrative provided. The CCSS-M coding is used with NC added to the beginning of each standard’s code.

Seven of North Carolina’s twenty-three “new” grade 2 standards are identical to corresponding CCSS-M standards. An additional nine new standards show minor changes like the inclusion of bullet points, added commas, or slight word changes. An example of minor changes can be seen in the difference between CCSS-M 2.NBT.3 which reads, Read and write numbers to 1000 using base-ten numerals, number names, and expanded form and NC.2.NBT.3 which says, Read and write numbers, within 1000, using base-ten numerals, number names, and expanded form. The remaining seven grade 2 standards were formed by insignificant changes made to CCSS-M standards. One grade 2 CCSS-M standard has been incorporated into another and two standards have been removed. NC.2.NBT.6 says to add up to three two-digit numbers while CCSS-M 2.NBT.6 says add up to four two-digit number, otherwise they are identical. The minor and insignificant changes North Carolina has made to the grade 2 standards leaves their new adoption identical in essence to the CCSS-M.

North Carolina has changed CCSS-M 4.NBT.4 but not its substance. CCSS-M 4.NBT.4 reads, Fluently add and subtract multi-digit whole numbers using the standard algorithm. The NC.4.NBT.4 version reads, Add and subtract multi-digit whole numbers up to and including 100,000 using the standard algorithm with place value understanding. Changes made to CCSS-M 5.NBT.5 provide greater specificity while at the same time are limiting. CCSS-M 5.NBT.5 says, Fluently multiply multi-digit whole numbers using the standard algorithm. NC.5.NBT.5 says, Demonstrate fluency with the multiplication of two whole numbers up to a three-digit number by a two-digit number using the standard algorithm. North Carolina drops the requirement for using the standard algorithm for division in NC. 6.NS.2, which says, Fluently divide using long division with a minimum of a four-digit dividend and interpret the quotient and remainder in context. Compare that to CCSS-M 6.NS.2 Fluently divide multi-digit numbers using the standard algorithm. With decimals, North Carolina requires fluently use the standard algorithms for addition, subtraction, multiplication and division of decimals in NC.6.NS.3.

### **North Dakota**

North Dakota adopted the Common Core State Standards in July 2011. The adopted standards were revised and the state superintendent approved the North Dakota Mathematics Content Standards on April 7, 2017.

The April 2017 revision of math standards for Grade 2 shows CCSS-M with some rewording and rewriting. Two CCSS-M standards have been removed. In essence, the revisions leave the draft identical to the CCSS-M. Some rewording does reflect a shift in emphasis from computation to strategy use. An example of this can be seen in standard 2.NBT.6: *Use strategies based on place value and properties of operations to add up to four two-digit numbers.* This standard now emphasizes the use of strategies based on place value and properties of operations rather than emphasizing the operation of addition, as does CCSS-M standard 2.NBT.6: *Add up to four two-digit numbers using strategies based on place value and properties of operations.*

A word of explanation: Although these two standards seem to be identical except for placement of the phrase “use [or ‘using’] strategies based on place value and properties of operations,” placement of such language is actually key in evaluating standards. The new North Dakota standard is more oriented toward “reform” math, as it opens with the focus on the strategies to be used rather than the mathematical computation (addition) to be performed. Better than both of these standards, from the point of view of teaching children math rather than strategies, would be a standard that reads, *Add up to four two-digit numbers*, with no mention of strategies. But as between the North Dakota and the CCSS-M standard, the latter is the one focusing more on the mathematical computation.

North Dakota has also expanded on the CCSS-M standard 4.NBT.4, *Fluently add and subtract multi-digit whole numbers using the standard algorithm.* The North Dakota 4.NBT.4 standard reads, *Fluently add and subtract multi-digit whole numbers to the one millions place using strategies flexibly, including the standard algorithm.* The North Dakota 5.NBT.5 standard says, “using strategies flexibly, including the standard algorithm” while the corresponding CCSS-M standard requires “using the standard algorithm.” Grade 6 standard 6.NS.2 contains the same change relating to division and the standard algorithm. These changes, even if appearing to be only slight changes, may have significantly different interpretations by different practitioners and may result in considerably different classroom instruction. Therefore, these individual standards are rated as Nearly Identical rather than Identical.

## Ohio

In February 2017, the Ohio State Board of Education approved revised math standards for the state. This revision presents Standards for Mathematical Practice and corresponding narratives identical to the CCSS-M.

Eighteen of Ohio’s twenty-six “new” grade 2 standards are identical to corresponding CCSS-M standards. Minor insignificant changes for clarification have been made to the remaining eight standards. Ohio’s revised grade 2 standards are rated as Identical to the CCSS-M.

Like standards of some other states, Ohio uses “a standard algorithm” rather than “the standard algorithm” as required by the CCSS-M (see Ohio standard 4.NBT.4 regarding addition and subtraction and standards 5.NBT.5 for multiplication and 6.NS.2 for division). These changes, even if appearing to be only slight changes, may have significantly different interpretations by different practitioners and may result in considerably different classroom instruction.

## Oklahoma

Oklahoma legislators passed a bill in 2014 to repeal and replace the CCSS.<sup>25</sup> In January 2016, the Oklahoma State Board of Education approved new ELA and mathematics standards.<sup>26</sup> It was announced on March 23, 2016, that those standards were approved, but it was uncertain whether this constituted official adoption rather than merely adoption by default when the legislature failed to act on recommended amendments by an established deadline.<sup>27</sup>

Oklahoma has seven standards for Mathematical Actions and Processes that are quite different from the CCSS-M Standards for Mathematical Practice. In a detailed side-by-side analysis of the Oklahoma standards and the CCSS-M, education-reform organization Achieve, Inc. found some distinct differences. For example,<sup>28</sup> Grade 2 CCSS-M addresses the concept of odd and even numbers, while Oklahoma does not seem to address this concept at any grade level. Oklahoma has several Grade 2 standards for which there does not appear to be a CCSS-M match. Oklahoma has some Grade 2 standards that Achieve matches with CCSS-M standards in grades 1, 3, and 4.

There are also considerable differences in how the Oklahoma standards are written that indicate some individual standards are neither Identical nor Nearly Identical to the CCSS-M. For example, Oklahoma Grade 2 standard 2.N.2.4 reads, *Use strategies and algorithms based on knowledge of place value and equality to add and subtract two-digit numbers*, while the CCSS-M Grade 2 standard 2.NBT.6 says, *Add up to four two-digit numbers using strategies based on place value and properties of operations*. The Grade 4 CCSS-M standard 4.NBT.4 states, *Fluently add and subtract multi-digit whole numbers using the standard algorithm*. The closest Oklahoma comes to this standard is in Grade 3 standard 3.N.2.3: *Use strategies and algorithms based on knowledge of place value and equality to fluently add and subtract multi-digit numbers*. The Grade 5 CCSS-M standard 5.NBT.5 expects students to *Fluently multiply multi-digit whole numbers using the standard algorithm*. The closest match for this standard by Oklahoma comes in Grade 4 standard 4.N.1.3: *Multiply 3-digit by 1-digit or a 2-digit by 2-digit whole numbers, using efficient and generalizable procedures and strategies, based on knowledge of place value, including but not limited to standard algorithms*.

There are differences in Grade 6 as well. The Grade 6 CCSS-M standard 6.NS.2 explains, *Fluently divide multi-digit numbers using the standard algorithm*. Oklahoma's standard 5.N.1.2 requires that students *Divide multi-digit numbers, by one- and two-digit divisors, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms*. Due to the wording of these Oklahoma standards, they have significantly different requirements from what appears to be their corresponding CCSS-M standards. The requirement differences and non-specific wording of the Oklahoma standards may result in different interpretations by different practitioners and may manifest in considerably different classroom instruction.

## Oregon

The Oregon Common Core State Standards for Mathematics reflect the CCSS-M document with minor cosmetic changes to the cover and color. Oregon uses green for color fonts and accent stripes. Pages have a green stripe at the top that says "Oregon Common Core State Standards for Mathematics" in place of "Common Core State Standards for Mathematics."

## **Pennsylvania**

Information on the Pennsylvania Department of Education website indicates the CCSS was adopted July 2010.<sup>29</sup> The math standards document is dated March 1, 2014, but there is no indication of revision or approval of a revision. But even though nothing indicates the 2014 document was approved by any entity or individual with legitimate authority to do so, that document is the one used for review and comparison and for such purposes is considered a revision.

At Grade 2, Pennsylvania has 13 standards to the CCSS-M's 26. Each of the Pennsylvania Grade 2 standards corresponds with one or more of the CCSS-M standards. About 10 Grade 2 CCSS-M standards do not correspond with any Grade 2 Pennsylvania standards. The Pennsylvania standards are written in a more streamlined manner and do not include embedded pedagogy as do the CCSS-M.

There are significant differences in how the standards are written. For example, Pennsylvania Grade 2 standard CC.2.1.2.B.3 reads, *Use place-value understanding and properties of operations to add and subtract within 1000.* The CCSS-M standard 2.NBT.6 reads, *Add up to four two-digit numbers using strategies based on place value and properties of operations.* Pennsylvania Grade 4 standard CC.2.1.4.B.2 requires students to *Use place-value understanding and properties of operations to perform multi-digit arithmetic.* The Grade 4 CCSS-M standard 4.NBT.4 states, *Fluently add and subtract multi-digit whole numbers using the standard algorithm.* Pennsylvania does not appear to have any standards that correspond with CCSS-M standards 5.NBT.5 and 6.NS.2. The only place the term "algorithm" appears in the Pennsylvania document is in the list of Key Terms on the last page. The Pennsylvania standards do not require "using strategies based on place value" as do the CCSS-M.

Because of these differences, the Pennsylvania standards are not considered Identical or Nearly Identical to the CCSS-M.

## **Rhode Island**

The Rhode Island Department of Education website links directly to the CCSSI website for its math standards.

## **South Carolina**

In 2014 the South Carolina legislature required the development of new, high-quality, college- and career-ready standards for ELA and mathematics to replace the previously adopted CCSS. The State Board of Education approved the second reading of the standards on March 11, 2015. But although South Carolina has done a rewrite of the CCSS-M Standards for Mathematical Practice, it has not changed their essence.

South Carolina has seven Mathematical Process Standards, which focus on pedagogy, not content. The narrative information has been considerably condensed and the South Carolina information has been abstracted from the CCSS-M narratives. The complete two pages of the Mathematical Process Standards are included at each grade level before the content standards are presented. South Carolina's coding is so similar to the CCSS-M coding that it is easy to match corresponding standards. South Carolina's Grade 2 standards, while worded a little differently, are so nearly identical to the CCSS-M standards that they appear to be the same as the Common Core State Standards. South Carolina has, however, engaged in the switch from

“**the** standard algorithm” to “**a** standard algorithm” (for example, in South Carolina’s 4.NSBT.4 standard, addressing addition and subtraction, the 5.NSBT.5 standard related to multiplication, and the 6.NS.3 standard for division).

These changes, even if appearing to be only slight changes, may have significantly different interpretations by different practitioners and may result in considerably different classroom instruction. Because they differ considerably in meaning, these individual standards are rated as Nearly Identical rather than Identical.

### **South Dakota**

The South Dakota Department of Education’s website link for Standards for Mathematics downloads the official CCSS-M standards document from the South Dakota state website.

### **Tennessee**

The Tennessee State Board of Education approved revised ELA and math standards in April 2016.<sup>30</sup> Except for a few changes to some standards, the Tennessee Grade 2 standards are identical to the CCSS-M. In one place, Tennessee uses the word “know” in place of the word “understand.” Another slight change appears in Tennessee Grade 2 standard 2.OA.B.2, which calls for students to *Fluently add and subtract within 30* while the CCSS-M standard 2.OA.2 calls for students to *Fluently add and subtract within 20*.

Some clarifying information in the CCSS-M standards has not been included in the Tennessee standards, and Tennessee has made some insignificant rearrangement of words within the standards. An example can be seen in Tennessee standard 2.NBT.B.6, which says, *Add up to four two-digit numbers using properties of operations and strategies based on place value*. The CCSS-M standard 2.NBT.6 reads, *Add up to four two-digit numbers using strategies based on place value and properties of operations*.

Significant changes have been made to the use of standard algorithms in grades 4, 5, and 6. Tennessee standard 4.NBT.B.4 requires students to *Fluently add and subtract within 1,000,000 using appropriate strategies and algorithms*, whereas CCSS-M standard 4.NBT.4 says, *Fluently add and subtract multi-digit whole numbers using **the** standard algorithm*. Tennessee standard 5.NBT.B.5 reads, *Fluently multiply multi-digit whole numbers (up to three-digit by four-digit factors) using appropriate strategies and algorithms*, while CCSS-M standard 5.NBT.5 expects students to *Fluently multiply multi-digit whole numbers using **the** standard algorithm*. Tennessee standard 6.NS.B.2 states, *Fluently divide multi-digit numbers using **a** standard algorithm*, while CCSS-M standard 6.NS.2 says, *Fluently divide multi-digit numbers using **the** standard algorithm*.

These changes, even if appearing to be only slight, may have significantly different interpretations by different practitioners and may result in considerably different classroom instruction. Therefore, these individual standards are rated as Nearly Identical rather than Identical.

### **Texas**

Texas did not adopt the CCSS. The current Texas Essential Knowledge and Skills (TEKS) for Mathematics were adopted in 2012 and apparently (based on the document used for review and comparison) updated in December 2014. The TEKS document shows that seven Mathematical Process Standards are intentionally presented before the knowledge and skills standards at each

grade level to reinforce the importance of process in the standards. While the TEKS Mathematical Process Standards do not include descriptive narratives, they are similar to the CCSS-M Standards for Mathematical Practice. Many, but not all, of the Grade 2 TEKS correspond to Grade 2 CCSS-M standards. Even so, it appears the TEKS may be a stronger set of standards at Grade 2, at least with regard to some concepts like fractions. It does not appear the Grade 2 CCSS-M were used as a base or model for the development of the Grade 2 TEKS.

Subtraction is included in the TEKS Grade 2 standard (b)(4)(B) that reads, *Add up to four two-digit numbers and subtract two-digit numbers using mental strategies and algorithms based on knowledge of place value and properties of operations*, while the corresponding CCSS-M standard 2.NBT.6 only addresses addition: *Add up to four two-digit numbers using strategies based on place value and properties of operations*. At Grade 4, the TEKS Grade 4 standard (b)(4)(A) expects students to add and subtract with whole numbers and decimals: *Add and subtract whole numbers and decimals to the hundredths place using the standard algorithm*, while the CCSS-M limits addition and subtraction to whole numbers only.

For multiplication and division, the TEKS does not contain CCSM's two-year delay in requiring the standard algorithm. Three TEKS standards require the standard algorithm for multiplication two years earlier than the CCSS-M. TEKS Grade 3 standard (b)(4)(G) starts requiring the standard algorithm for multiplying by a one-digit-number: *Use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties*. TEKS Grade 4 standard (b)(4)(D) reads, *Use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties*. For the TEKS Grade 5 standard (b)(3)(B), students must *multiply with fluency a three-digit number by a two-digit number using the standard algorithm*.

Starting two years ahead of the CCSS-M, the TEKS contain three standards requiring the standard algorithm for division. TEKS Grade 4 standard (b)(4)(F) requires that students *Use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor*. TEKS Grade 5 standard (b)(3)(C) requires students to *Solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm*. TEKS Grade 5 standard (b)(3)(G) reads, *Solve for quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using strategies and algorithms, including the standard algorithm*.

## **Utah**

The Utah Core State Standards for Mathematics document indicates the Utah State Board of Education adopted that state's standards in August 2010 and a revision in April 2016. Utah includes the CCSS-M Understanding Mathematics section in the Introduction to its April 2016 revised document. Its Standards for Mathematical Practice with complete narratives, similar to the CCSS-M narratives, are presented at each grade level before the content standards. Other than a few unsubstantial edits/revisions, the Grade 2 Utah standards are identical to the Grade 2 CCSS-M standards.

## **Vermont**

The State of Vermont Agency of Education website links directly to the CCSSI website for its math standards.

## **Virginia**

Virginia did not adopt the CCSS. The Virginia Board of Education adopted the state's own 2016 Mathematics Standards of Learning (SOL) in September 2016 to replace standards adopted in 2009.<sup>31</sup> The SOL includes five Mathematical Process Goals for Students: Mathematical Problem Solving, Mathematical Communication, Mathematical Reasoning, Mathematical Connections, and Mathematical Representations. These goals, along with a narrative for each, are presented in the introductory information before the content standards are presented.

The SOL are written in a very understandable clear, clean, concise manner and are pedagogy-free. Some SOL are not as specific or prescriptive as corresponding CCSS-M standards. SOL Grade 2, for instance, requires students to *Round two-digit numbers between 0 and 999*. The CCSS-M does not require this until Grade 3 with standard 3.NBT.1: *Use place value understanding to round whole numbers to the nearest 10 or 100*. The Grade 2 SOL appear to be more advanced than the Grade 2 CCSS-M. The Grade 2 Virginia standard 2.6b reads, *Determine sums and differences, using various methods*. This is the only SOL Grade 2 standard that comes close to corresponding with CCSS-M Grade 2 standard 2.NBT. 6: *Add up to four two-digit numbers using strategies based on place value and properties of operations*.

The word "algorithm" is not found in the SOL document until the high-school level.

## **Washington**

Washington now calls its standards the Washington State K-12 Learning Standards and its math standards the Mathematics K-12 Learning Standards.<sup>32</sup> No Washington State-specific document is provided on the State of Washington Office of Superintendent of Public Instruction (OSPI) website. The OSPI link for the Mathematics K-12 Learning Standards downloads the official CCSS-M document from the OSPI website

## **West Virginia**

West Virginia adopted revised math standards in 2016 and has renamed the CCSS-M Standards for Mathematical Practice (SMP) as its own Mathematics: Mathematical Habits of Mind. Other than the name change, SMP's and narratives are identical. The revised West Virginia Grade 2 standards are identical to the Grade 2 CCSS-M standards and are presented in the same order. West Virginia uses a different coding system.

## **Wisconsin**

The Wisconsin Standards for Mathematics document has its own cover and six sections of information and material. The standards are in Section 3. This section of the Wisconsin document is the complete CCSS-M document with no changes to font colors, format, or page numbers.

## **Wyoming**

The Wyoming Mathematics Content and Performance Standards document has five pages of introductory information in front of the complete CCSS-M document.

## Repeal, Revise, Replace, Rebrand, Update, or Unique

Issues related to and surrounding the CCSS are controversial and “toxic” (as Mike Huckabee put it) for many people both in and outside of education, including decision-makers. Rather than truly replacing the CCSS, some states have simply rebranded them. As a result, “College and Career Readiness Standards” and setting “higher” national standards are viewed as euphemisms for the CCSS. Rebranding has taken many forms, from simply changing the name to having committees review the standards, make minor, unsubstantial changes, add some front material, and possibly reformat their presentation.

The information provided in this section addresses the approved standards in the 50 states and does not consider the District of Columbia or drafts of standards currently in the revision process.

For those familiar with pre-CCSS state math standards and who can compare them with CCSS-M, it can be seen the CCSS-M are uniquely written. Once familiar with this uniqueness, a person can determine how CCSS-M standards have been used as a base or model for a standards revision or rewrite.

Fourteen states make it easy to see that they just adopted CCSS in toto, calling their standards the Common Core State Standards or using that name on the cover of their document. Others are not consistent in the use of the name for their standards. One official state website used one name for the state’s standards, while the standards document used a slightly different name.

## Status

It is often reported that five states never adopted the CCSS: Alaska, Minnesota, Nebraska, Virginia, and Texas. Actually, Minnesota adopted the CCSS-ELA standards but not the CCSS-M. Minnesota’s current math standards were adopted in 2007, so their development was uninfluenced by the CCSS-M. Although Alaska claims it didn’t adopt the CCSS, the set of math standards it adopted in 2012 is identical to CCSS-M in Grade 2. Nebraska’s new math standards, adopted in 2015, are so similar to the Grade 2 CCSS-M that it is apparent Nebraska was heavily influenced by and used CCSS-M as a model. On the other hand, it is evident Virginia and Texas did not use the CCSS-M as the base for their standards revision and were not influenced by them.

A number of states have considered legislation to repeal and replace the CCSS, but only a few (Indiana, Missouri, Oklahoma, South Carolina, and Tennessee) have passed such legislation. Even in those states, however, the follow-through on that commitment has been spotty at best. Indiana’s new math standards seem to be of lesser quality than even the CCSS-M and, definitely of lesser quality than the state’s pre-CCSS-M standards. It appears the CCSS-M was the base for Missouri’s new math standards. South Carolina’s new Grade 2 math standards are so nearly identical to the CCSS-M that they are clearly a rebrand. Tennessee’s new Grade 2 math standards, except for a few changes, are identical to the CCSS-M. The only state that seems to have implemented “repeal and replace” legislation by changing its math standards, without

either making them worse (Indiana) or copying CCSS-M, is Oklahoma. More information may be found in the narratives for these states.

Nineteen states have been noted as having repealed/ revised their standards. If a standards document was marked as an update, it was counted as a revision.

| State          | Status | Date     | TOC | Intro | How to read | SMP | SMP Narrative | Grade 2 Intro | Grade 2 Overview | Coding | Grade 2 | 2.NBT.6 | 4.NBT.4 | 5.NBT.5 | 6.NS.2 |
|----------------|--------|----------|-----|-------|-------------|-----|---------------|---------------|------------------|--------|---------|---------|---------|---------|--------|
| Alabama        | Rv     | Jan-15   | S   |       | NI          | I   | I             | I             |                  | I      | I       | I       | I       | I       | I      |
| Arizona        | Rv     | 12/19/16 |     |       |             | I   | S             | NI            | I                | I      | I       | NI      | NI      | NI      | NI     |
| Arkansas       | Rv     | 7/14/16  |     |       |             |     |               |               |                  | I      | I       | I       | NI      | NI      | NI     |
| California     | Rv     | 1/16/13  | S   |       |             | I   | I             | I             | I                | I      | I       | I       | I       | I       | I      |
| Florida        | Rv     | 2/18/14  |     |       |             |     |               |               |                  | I      | I       | I       | I       | I       | I      |
| Georgia        | Rv     | 1/15/15  |     | I     | I           | I   | I             |               | I                | I      | I       | I       | I       | NI      | I      |
| Indiana        | Rp     | Apr-14   |     |       |             | I   | NI            |               |                  | S      |         |         | NI      | NI      | NI     |
| Louisiana      | Rv     | 9/23/16  |     |       | S           | I   | I             | I             |                  | I      | I       | I       | NI      | I       | I      |
| Mississippi    | Rv     | 1/21/16  |     | P     |             | I   | I             | I             |                  | I      | I       | I       | I       | I       | I      |
| Missouri       | Rp     | 4/19/16  |     |       |             |     |               |               |                  |        |         | NI      | NI      |         | NI     |
| North Carolina | Rp     | 6/1/17   |     |       |             | I   |               |               |                  | I      | I       | NI      | NI      | NI      |        |
| North Dakota   | Rv     | Ap 2017  |     |       | I           | I   | I             | NI            | I                | I      | I       | NI      | NI      | NI      | NI     |
| Ohio           | Rv     | Feb-17   | S   | P     | NI          | I   | I             | I             | I                | I      | I       | I       | NI      | NI      | NI     |
| Oklahoma       | Rp     | 3/23/16  |     |       |             |     |               |               |                  |        |         | NI      |         |         |        |
| Pennsylvania   | Rv     | 3/1/14   |     |       |             | I   |               |               |                  |        |         |         |         |         |        |
| South Carolina | Rp     | 3/11/15  |     |       |             | S   | S             |               |                  | NI     | NI      | I       | NI      | NI      | NI     |
| Tennessee      | Rp     | Apr-16   |     |       |             | I   | I             | S             |                  | NI     | I       | I       | NI      | NI      | NI     |
| Utah           | Rv     | Apr-16   |     | P     |             | I   | S             | I             | I                | I      | I       | I       | I       | I       | I      |
| West Virginia  | Rv     | 7/1/16   |     |       |             | I   | I             |               |                  |        | I       | I       | I       | I       | I      |

Fourteen of nineteen states appear to still have CCSS-M grade 2 standards after a revision. In some states, the revision may have resulted in a weaker set of math standards. The Indiana, Missouri, Oklahoma, and Pennsylvania math standards are the only ones that do not appear to be Identical or Nearly Identical to the CCSS-M.

Nine states have links to download their standards that go directly to the Common Core State Standards Initiative website. Five states use their official state website for downloading their math standards, but downloads the official CCSS-M document. Five states have taken the CCSS-M document and put their own cover on it and made minor cosmetic changes that may include font style, format, and color.

Forty-one states have the CCSS-M standards at Grade 2. One state, South Carolina, has Nearly Identical standards at Grade 2. Forty-one states have Standards of Mathematical Practices identical to the CCSS-M, with thirty-five of those having identical narratives. One state has Nearly Identical narratives while three have Similar narratives.

Thirty-eight states have coding identical to the CCSS-M, with two states having Nearly Identical and one state having Similar coding. Even without identical coding, standards can be identified as matching up or corresponding for assessment and data-collection purposes.

Thirty-nine states have standards Identical to CCSS-M standard 2.NBT.6 at Grade 2, while six states have Nearly Identical standards. Thirty-two states have standards Identical to CCSS-M standard 4.NBT.4 at Grade 4, while thirteen states have Nearly Identical standards. Thirty-two states have standards Identical to CCSS-M standard 5.NBT.5 at Grade 5, while twelve states have Nearly Identical standards. Thirty-four states have standards Identical to CCSS-M standard 6.NS.2 at Grade 6, while ten states have Nearly Identical standards. In most cases, the Nearly Identical standards may only be slightly different, possibly with only one word changed, yet this can result in significantly different interpretations by different practitioners.

## Recommended Standards

When confronted with the idea of eliminating the CCSS, decision-makers have reacted as though there were no alternatives -- without considering what their state did before the CCSS or what their state might do for itself now. There are alternatives, and some of them are much better than the CCSS-M. Three such alternatives are pre-CCSS standards from California, Indiana, and Washington. In addition, suggestions are provided for using the CCSS-M as a base or model for revising or developing a new set of state math standards.

### **Mathematics Framework for California Public Schools Kindergarten Through Grade Twelve.** Adopted March 2005.<sup>33</sup>

The Mathematics Framework for California Public Schools Kindergarten Through Grade Twelve has marked key standards in grades kindergarten through Grade 7 with a green dot. At the end of each grade level's content standards is a set of Mathematical Reasoning standards, which are not all the same for each grade level. None of the Mathematical Reasoning standards at any grade level are designated with a green dot.

The content standards are clear, concise, and pedagogy-free with an example provided for each standard. Examples are not provided for the Mathematical Reasoning standards. Green dot Grade 2 standard 2.2 reads, *Find the sum or difference of two whole numbers up to three digits long.* Green dot Grade 3 standard 3.1 requires students to *Demonstrate an understanding of, and the ability to use, standard algorithms for the addition and subtraction of multidigit numbers.* Green dot Grade 4 standard 3.2 states, *Demonstrate an understanding of, and the ability to use, standard algorithms for multiplying a multidigit number by a two-digit number and for dividing a multidigit number by a one-digit number; use relationships between them to simplify computations and check results.* For multiplication, this is one year earlier than CCSS-M's corresponding standard. Green dot Grade 5 standard 2.2 reads, *Demonstrate proficiency with division, including division with positive decimals and long division with multidigit divisors.* This is one year earlier than the corresponding CCSS-M standard.

### **Indiana's Academic Standards – Mathematics** Adopted September 2000.<sup>34</sup>

Indiana's Academic Standards (IAS) (pre-CCSS) include the Process Standards of problem-solving, communication, reasoning and proof, connections, and representation. A set of problem-solving standards is found in the last section of content standards for each grade level.

The content standards are clear, concise, and pedagogy-free, with an example provided for each standard. IAS Grade 2 standard 2.2.2 expects students to *Add two whole numbers less than 100 with and without regrouping*. IAS Grade 2 standard 2.2.3 reads, *Subtract two whole numbers less than 100 without regrouping*. IAS Grade 3 standard 3.2.1 says, *Add and subtract whole numbers up to 1,000 with or without regrouping, using relevant properties of the number system*. IAS Grade 4 standard 4.2.1 states, *Understand and use standard algorithms for addition and subtraction*. IAS Grade 5 standard 5.2.1 reads, *Solve problems involving multiplication and division of any whole numbers*.

### **Washington Exemplary Mathematics Standards: 2008 (WEMS)<sup>35</sup>**

The WEMS are a grassroots-effort product. Starting with the Indiana standards as a model and a base, the WEMS were produced by a volunteer team of educators, parents, mathematicians, scientists, and engineers. The document says the WEMS “*combine the clarity, pacing and structure of Indiana standards, the power of the California standards, and the rigor and priorities of the NCTM [National Council of Teachers of Mathematics] Focal Points. They have been continuously compared and refined against other exemplars (Singapore, Massachusetts) and benchmarks such as the American Diploma Project and the Transition Math Project.*”

The WEMS contain four process strands that include reasoning, problem-solving, communication, and connections. These are not isolated components of the standards but are embedded within the content standards. There is a nice section on Developing and Understanding the Standard Algorithms. A Scope and Sequence Chart for K-8 is presented. The standards are clear, concise, and pedagogy-free, with an example provided for each standard.

The WEMS expect addition and subtraction fluency in Grade 2 and mastery in Grade 3. WEMS Grade 2 standard 2.C.1 reads, *Add or subtract whole numbers up to three digits using the standard algorithm*. WEMS Grade 3 standard 3.C.1 expectation is that students will *Add or subtract whole numbers between 0 and 10,000 using the standard algorithm*. This requires the use of the standard algorithm for addition and subtraction two years before the CCSS-M. The WEMS expect multiplication fluency in Grade 3 and mastery in Grade 4. WEMS Grade 3 standard says, *Multiply and divide numbers up to a 3-digit number by a 1-digit number using the standard algorithm*. WEMS Grade 4 standard 4.C.1 reads, *Multiply 3 digit numbers by 2 digit numbers using the standard algorithm*. This requires the use of the standard algorithm for multiplication two years before, and for division three years before, the CCSS-M. The WEMS expect division fluency in Grade 4 and mastery in Grade 5. WEMS Grade 4 standard 4.C.2 reads, *Divide 4 digit numbers by 1 digit numbers using the standard algorithm*. WEMS Grade 5 standard 5.C.2 reads, *Divide 4 digit numbers by 2 digit numbers using long division*.

## Suggestions for Using and Improving the Common Core State Standards for Mathematics

These three suggestions are for states that may insist on using the CCSS-M as the base or model for revising or developing math standards. While some suggestions may work for secondary standards, they are more focused on K-8 standards.

- Strip out the embedded pedagogy to provide cleaner, clearer, pedagogy-free standards.
- Shift standards that call for the use of the standard algorithm for each basic operation to earlier grade levels, and keep wording that requires use of “**the** standard algorithm.” Specifically, shift standard 4.NBT.4 for addition and subtraction to Grade 2. Move standard 5.NBT.5 for multiplication to Grade 4 and standard 6.NS.2 to Grade 5.
- Change wording and rewrite or reorder phrases so leading verbs emphasize math skills rather than pedagogy.

Many other changes could be suggested, but these seem to be key and could make measurably improved difference in the standards and instructional delivery.

## Endnotes

Please note that the *National Governors Association Center for Best Practices* and *Council of Chief State School Officers* own and hold the copyright to the Common Core State Standards. The following copyright applies to the standards used in this report: “© Copyright 2010 *National Governors Association Center for Best Practices* and *Council of Chief State School Officers*. All rights reserved.”<sup>36</sup>

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<sup>1</sup> *Common Core State Standards Initiative*, “Development Process,” accessed January 6, 2017, <http://www.corestandards.org/about-the-standards/development-process/>

<sup>2</sup> *National Governors Association*, “Common Core State Standards,” September 2012. <https://www.nga.org/files/live/sites/NGA/files/pdf/1209GEPAINstituteCommonCore.pdf>

<sup>3</sup> *Academic Benchmarks*, “Common Core State Standards Adoption Map,” accessed January 9, 2017, <http://academicbenchmarks.com/common-core-state-adoption-map/>

<sup>4</sup> *Common Core State Standards Initiative*, “Standards in Your State,” accessed January 9, 2017, <http://www.corestandards.org/standards-in-your-state/>

<sup>5</sup> *Association for Supervision and Curriculum Development*, “Common Core Standards Adoption by State,” accessed January 9, 2017, <http://www.ascd.org/common-core-state-standards/common-core-state-standards-adoption-map.aspx>

<sup>6</sup> *National Conference of State Legislatures College & Career Readiness Standards Legislation*, “Common Core Status Map,” updated May 18, 2017, <http://www.ccrslegislation.info/CCR-State-Policy-Resources/common-core-status-map>

<sup>7</sup> *Education Week*, “Map: Tracking the Common Core State Standards,” updated October 17, 2016, <http://www.edweek.org/ew/section/multimedia/map-states-academic-standards-common-core-or.html>

<sup>8</sup> Kendall et al., “State Adoption of the Common Core State Standards: The 15 Percent Rule,” *McREL*, March 2012, <http://files.eric.ed.gov/fulltext/ED544664.pdf>

<sup>9</sup> Tonette Salazar and Kathy Christie, “States and the (not so) new standards---where are they now?” *Education Commission of the States*, September 1, 2014, <http://www.ecs.org/clearinghouse/01/14/21/11421.pdf>

<sup>10</sup> *Abt Associates Perspective Blog*, “Common Core Revisions: What Are States Really Changing?” January 17, 2017, <http://abtassociates.com/Perspectives/January-2017/Common-Core-Revisions-What-Are-States-Really-Chang>

<sup>11</sup> *MacMillan Dictionary*, accessed January 10, 2017, <http://www.macmillandictionary.com/us/dictionary/american/antics>

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<sup>12</sup> Erin Tuttle and J.R. Wilson, "Common Does Not Equal Excellent," *American Principals Project Foundation*, January 2016, p. 9, <https://americanprinciplesproject.org/wp-content/uploads/Math-paper-Jan-26-FINAL.pdf>

<sup>13</sup> azfamily.com, "Arizona adopts cursive requirements in schools," updated December 20, 2016, <http://www.azfamily.com/story/34094138/arizona-adopts-cursive-requirement-in-schools>

<sup>14</sup> Florida Department of Education, "Mathematics," accessed January 10, 2017, <http://www.fl DOE.org/academics/standards/subject-areas/math-science/mathematics>

<sup>15</sup> Maureen Downey, "State ed board tweaks Common Core. Will critics be satisfied?" *myAJC* from the *Atlanta Constitution Journal*, January 15, 2015, <http://getschooled.blog.myajc.com/2015/01/15/todays-state-board-tweaks-to-common-core-will-they-end-criticisms/>

<sup>16</sup> Erin Tuttle and J.R. Wilson, "Common Does Not Equal Excellent," *American Principals Project Foundation*, January 2016, <https://americanprinciplesproject.org/wp-content/uploads/Math-paper-Jan-26-FINAL.pdf>

<sup>17</sup> Massachusetts Department of Elementary & Secondary Education, "Curriculum and Instruction English Language Arts (ELA) & Literacy and Mathematics Standards Review," accessed January 22, 2017, <http://www.doe.mass.edu/candi/StandardsReview/ela-math.html>

<sup>18</sup> Minnesota Department of Education, "Academic Standards (K-12)," accessed January 10, 2017, <http://education.state.mn.us/MDE/fam/stds/index.htm>

<sup>19</sup> Mississippi Department of Education, "Higher Expectations, Higher Achievement," accessed January 10, 2017, <http://www.mde.k12.ms.us/MCCRS>

<sup>20</sup> Missouri Department of Elementary & Secondary Education, "Missouri Learning Standards," accessed January 10, 2017, <https://dese.mo.gov/college-career-readiness/curriculum/missouri-learning-standards>

<sup>21</sup> Nebraska Department of Education, "Welcome to the Content Area Standards Website," accessed January 10, 2017, <https://www.education.ne.gov/AcademicStandards/index.html>

<sup>22</sup> State of New Jersey Department of Education, "New Jersey Student Learning Standards," accessed January 10, 2017, <http://www.state.nj.us/education/cccs/>

<sup>23</sup> New Mexico Public Education Department, "New Mexico Common Core State Standards," accessed January 10, 2017, <http://newmexicocommoncore.org>

<sup>24</sup> New York State Education Department, "Draft Standards for Mathematics," accessed January 11, 2017 <http://www.nysed.gov/teachers/draft-standards-mathematics>

<sup>25</sup> Enrolled House Bill No. 3399, "An Act Relating to schools," accessed January 11, 2017, [http://webserver1.lsb.state.ok.us/cf\\_pdf/2013-14%20ENR/hB/HB3399%20ENR.PDF](http://webserver1.lsb.state.ok.us/cf_pdf/2013-14%20ENR/hB/HB3399%20ENR.PDF)

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<sup>26</sup> KOSU *Crazy Smart Radio*, "State Board of Education Approves New Academic Standards," January 29, 2016, <http://kosu.org/post/state-board-education-approves-new-academic-standards>

<sup>27</sup> Reclaim Oklahoma Parent Empowerment, "A Chronology of the Oklahoma Academic Standards Review Process," March 25, 2016, <http://reclaimoklahomaparentempowerment.blogspot.com/2016/03/a-chronology-of-oklahoma-academic.html?m=1>

<sup>28</sup> *Achieve*, "A Side-by-Side Analysis of the Oklahoma Academic Standards for Mathematics (Third Draft, March, 2016) with the Common Core State Standards for Mathematics," accessed January 11, 2017, [http://www.achieve.org/files/OK\\_CCSS\\_SBS\\_Math\\_K-12\\_3-15-16%20Final.pdf](http://www.achieve.org/files/OK_CCSS_SBS_Math_K-12_3-15-16%20Final.pdf)

<sup>29</sup> Pennsylvania Department of Education, "Mathematics in Pennsylvania," accessed January 11, 2017, <http://www.education.pa.gov/Teachers%20-%20Administrators/Curriculum/Pages/Mathematics.aspx#tab-1>

<sup>30</sup> Tennessee State Board of Education, "Math and English Language Arts," access January 11, 2017, <https://www.tn.gov/sbe/article/math-and-english-language-arts>

<sup>31</sup> Virginia Department of Education, "Standards of Learning (SOL) & Testing," accessed January 12, 2017, <http://www.doe.virginia.gov/testing/index.shtml>

<sup>32</sup> State of Washington Office of Superintendent of Public Instruction, "Mathematics," accessed January 12, 2017, <http://www.k12.wa.us/Mathematics/default.aspx>

<sup>33</sup> California Department of Education, "Mathematics Framework for California Public Schools," 2006, <https://app.box.com/s/xtt5kev5vs1rme9ym0jyh7nmgxqh48kd>

<sup>34</sup> Indiana Department of Education, "Indiana's Academic Standards Mathematics," 2000, <https://app.box.com/s/238h7n70uzig9rx0iyjcw6j7nwojdpeo>

<sup>35</sup> "Washington Exemplary Mathematics Standards: 2008," February 29, 2008, <https://app.box.com/s/69m54dnzuvp0jajv8p1z7vfn7yh4lj5k>

<sup>36</sup> *Common Core State Standards Initiative*, "Branding Guidelines," accessed January 8, 2017, <http://www.corestandards.org/about-the-standards/branding-guidelines/>

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## About the Author

J.R. Wilson has more than 30 years of experience working in public education as an elementary classroom teacher, middle- and high-school math teacher, state department of education curriculum consultant, regional educational service agency staff development coordinator, and elementary principal. He has worked as a team member in writing state science and math standards. He served on the Washington state Where's the Math? Executive Committee. Mr. Wilson participated in the U.S. Coalition for World Class Math review of the *Common Core State Standards Initiative* "College and Career Readiness Standards for Mathematics" draft, coordinated the Coalition's review of the March 10, 2010, draft of the "Common Core State Standards for Mathematics," and participated in the Coalition's review of the final set of math standards.

**Common to the Core States: How Solid Is the Mathematics Core in Each State?**

| <b>State</b>         | <b>Name for State Standards</b>                                 |
|----------------------|---|
| Alabama              | <i>Alabama College and Career Ready Standards</i>               |
| Alaska               | <i>Alaska English/Language Arts and Mathematics Standards</i>   |
| Arizona              | <i>Arizona's College and Career Ready Standards</i>             |
| Arkansas             | <i>Arkansas Academic Standards</i>                              |
| California           | <i>California Common Core State Standards</i>                   |
| Colorado             | <i>Colorado Academic Standards</i>                              |
| Connecticut          | <i>Connecticut Core Standards</i>                               |
| Delaware             | <i>Common Core State Standards</i>                              |
| District Of Columbia | <i>Common Core State Standards</i>                              |
| Florida              | <i>Florida Standards</i>  |
| Georgia              | <i>Georgia Standards of Excellence</i>                          |
| Hawaii               | <i>Common Core State Standards</i>                              |
| Idaho                | <i>Common Core State Standards</i>                              |
| Illinois             | <i>Common Core State Standards</i>                              |
| Indiana              | <i>Indiana Academic Standards</i>                               |
| Iowa                 | <i>Iowa Core</i>  |
| Kansas               | <i>Kansas College and Career Ready Standards</i>                |
| Kentucky             | <i>Kentucky Academic Standards</i>                              |
| Louisiana            | <i>Louisiana Student Standards</i>                              |
| Maine                | <i>Common Core State Standards</i>                              |
| Maryland             | <i>Maryland College and Career Ready Standards</i>              |
| Massachusetts        | <i>Massachusetts Curriculum Framework</i>                       |
| Michigan             | <i>Common Core State Standards</i>                              |
| Minnesota            | <i>Minnesota K-12 Academic Standards</i>                        |
| Mississippi          | <i>Mississippi College and Career Readiness Standards</i>       |
| Missouri             | <i>Missouri Learning Standards</i>                              |
| Montana              | <i>Montana Common Core Standards</i>                            |
| Nebraska             | <i>Nebraska's College and Career Ready Standards</i>            |
| Nevada               | <i>Nevada Academic Content Standards</i>                        |
| New Hampshire        | <i>New Hampshire College and Career Ready Standards</i>         |
| New Jersey           | <i>New Jersey Student Learning Standards</i>                    |
| New Mexico           | <i>New Mexico Common Core State Standards</i>                   |
| New York             | <i>New York State P-12 Common Core Learning Standards</i>       |
| North Carolina       | <i>North Carolina Standard Course of Study K-12 Mathematics</i> |
| North Dakota         | <i>North Dakota Content Standards</i>                           |
| Ohio                 | <i>Ohio Learning Standards</i>                                  |
| Oklahoma             | <i>Oklahoma Academic Standards</i>                              |
| Oregon               | <i>Oregon Common Core State Standards</i>                       |
| Pennsylvania         | <i>Pennsylvania Core</i>  |
| Rhode Island         | <i>Common Core State Standards</i>                              |
| South Carolina       | <i>South Carolina College and Career Ready Standards</i>        |
| South Dakota         | <i>Common Core State Standards</i>                              |
| Tennessee            | <i>Tennessee Academic Standards</i>                             |
| Texas                | <i>Texas Essential Knowledge and Skills</i>                     |
| Utah                 | <i>Utah Core Standards</i>                                      |
| Vermont              | <i>Common Core State Standards</i>                              |
| Virginia             | <i>Standards of Learning</i>                                    |
| Washington           | <i>Common Core State Standards</i>                              |
| West Virginia        | <i>West Virginia College and Career Readiness Standards</i>     |
| Wisconsin            | <i>Wisconsin Common Core Essential Elements</i>                 |
| Wyoming              | <i>Wyoming Content and Performance Standards</i>                |

| State                | Common to the Core States: How Solid Is the Mathematics Core in Each State?<br>URL math standards download  |
|----------------------|---|
| Alabama              | <a href="https://www.alsde.edu/sec/CO5/2015%20Revised%20Alabama%20Mathematics%20Course%20of%20Study.pdf">https://www.alsde.edu/sec/CO5/2015%20Revised%20Alabama%20Mathematics%20Course%20of%20Study.pdf</a>   |
| Alaska               | <a href="https://education.alaska.gov/akstandards/math/akstandards/math_081312.pdf">https://education.alaska.gov/akstandards/math/akstandards/math_081312.pdf</a>   |
| Arizona              | <a href="http://www.azed.gov/standards-practices/k-12-standards-feedback/standards-draft-and-public-comments/">http://www.azed.gov/standards-practices/k-12-standards-feedback/standards-draft-and-public-comments/</a>   |
| Arkansas             | <a href="http://www.arkansased.gov/public/userfiles/Learning_Services/Curriculum%20and%20Instruction/Frameworks/Math/Arkansas_Mathematics_Standards_K_5.pdf">http://www.arkansased.gov/public/userfiles/Learning_Services/Curriculum%20and%20Instruction/Frameworks/Math/Arkansas_Mathematics_Standards_K_5.pdf</a>     |
| California           | <a href="http://www.cde.ca.gov/be/st/ss/documents/ccssmathstandardaug2013.pdf">http://www.cde.ca.gov/be/st/ss/documents/ccssmathstandardaug2013.pdf</a>   |
| Colorado             | <a href="http://www.cde.state.co.us/comath/statestandards">http://www.cde.state.co.us/comath/statestandards</a>   |
| Connecticut          | <a href="http://ctcorestandards.org/?page_id=2">http://ctcorestandards.org/?page_id=2</a>   |
| Delaware             | <a href="http://www.doe.k12.de.us/Page/2504">http://www.doe.k12.de.us/Page/2504</a>   |
| District Of Columbia | <a href="http://dcps.dc.gov/page/elementary-school-academic-standards">http://dcps.dc.gov/page/elementary-school-academic-standards</a>   |
| Florida              | <a href="http://www.fldoe.org/academics/standards/subject-areas/math-science/mathematics">http://www.fldoe.org/academics/standards/subject-areas/math-science/mathematics</a>   |
| Georgia              | <a href="https://www.georgiastandards.org/Georgia-Standards/Documents/Grade-K-5-Mathematics-Standards.pdf">https://www.georgiastandards.org/Georgia-Standards/Documents/Grade-K-5-Mathematics-Standards.pdf</a>   |
| Hawaii               | <a href="http://www.hawaiipublicschools.org/TeachingAndLearning/StudentLearning/CommonCoreStateStandards/Pages/home.aspx">http://www.hawaiipublicschools.org/TeachingAndLearning/StudentLearning/CommonCoreStateStandards/Pages/home.aspx</a>   |
| Idaho                | <a href="http://www.sde.idaho.gov/academic/shared/math/Mathematics-Common-Core-State-Standards-Grades-K-12.pdf">http://www.sde.idaho.gov/academic/shared/math/Mathematics-Common-Core-State-Standards-Grades-K-12.pdf</a>   |
| Illinois             | <a href="https://www.isbe.net/Pages/Math-Learning-Standards.aspx">https://www.isbe.net/Pages/Math-Learning-Standards.aspx</a>   |
| Indiana              | <a href="http://www.doe.in.gov/standards/mathematics">http://www.doe.in.gov/standards/mathematics</a>   |
| Iowa                 | <a href="https://iowacore.gov/sites/default/files/k-12_mathematics_0.pdf">https://iowacore.gov/sites/default/files/k-12_mathematics_0.pdf</a>   |
| Kansas               | <a href="http://community.ksde.org/LinkClick.aspx?fileticket=X3kWvXigRY%3d&amp;tabid=5276&amp;mid=13067">http://community.ksde.org/LinkClick.aspx?fileticket=X3kWvXigRY%3d&amp;tabid=5276&amp;mid=13067</a>   |
| Kentucky             | <a href="http://education.ky.gov/curriculum/standards/Documents/Kentucky_Academic_Standards_Mathematics.pdf">http://education.ky.gov/curriculum/standards/Documents/Kentucky_Academic_Standards_Mathematics.pdf</a>   |
| Louisiana            | <a href="http://www.louisianabelieves.com/docs/default-source/teacher-toolbox-resources/louisiana-student-standards-for-k-12-math.pdf?sfvrsn=20">http://www.louisianabelieves.com/docs/default-source/teacher-toolbox-resources/louisiana-student-standards-for-k-12-math.pdf?sfvrsn=20</a>                             |
| Maine                | <a href="http://www.maine.gov/doe/math/standards/ccssm/index.html">http://www.maine.gov/doe/math/standards/ccssm/index.html</a>   |
| Maryland             | <a href="http://mdk12.msde.maryland.gov/instruction/curriculum/mathematics/index.html">http://mdk12.msde.maryland.gov/instruction/curriculum/mathematics/index.html</a>   |
| Massachusetts        | <a href="http://www.doe.mass.edu/frameworks/math/0311.pdf">http://www.doe.mass.edu/frameworks/math/0311.pdf</a>   |
| Michigan             | <a href="http://www.michigan.gov/documents/mde/K-12_ML_Math_Standards_REV_470033_7.pdf">http://www.michigan.gov/documents/mde/K-12_ML_Math_Standards_REV_470033_7.pdf</a>   |
| Minnesota            | <a href="http://education.state.mn.us/mdeprod/idcplg?IdcService=GET_FILE&amp;dDocName=005247&amp;RevisionSelectionMethod=latestReleased&amp;Rendition=primary">http://education.state.mn.us/mdeprod/idcplg?IdcService=GET_FILE&amp;dDocName=005247&amp;RevisionSelectionMethod=latestReleased&amp;Rendition=primary</a> |
| Mississippi          | <a href="https://districtaccess.mde.k12.ms.us/curriculumandInstruction/Mathematics%20Resources/MS%20CCSSM%20Framework%20Documents/2016-MS-CCRS-Math.pdf">https://districtaccess.mde.k12.ms.us/curriculumandInstruction/Mathematics%20Resources/MS%20CCSSM%20Framework%20Documents/2016-MS-CCRS-Math.pdf</a>             |
| Missouri             | <a href="https://dese.mo.gov/sites/default/files/curr-mls-standards-math-k-5-sboe-2016.pdf">https://dese.mo.gov/sites/default/files/curr-mls-standards-math-k-5-sboe-2016.pdf</a>   |
| Montana              | <a href="http://opi.mt.gov/pdf/CCSSO/11NovMathPractice_ContentGradeLevel.pdf">http://opi.mt.gov/pdf/CCSSO/11NovMathPractice_ContentGradeLevel.pdf</a>   |
| Nebraska             | <a href="https://www.education.ne.gov/math/Math_Standards/Adopted_2015_Math_Standards/2015_Math_Standards_for_Mathematics_Vertical.pdf">https://www.education.ne.gov/math/Math_Standards/Adopted_2015_Math_Standards/2015_Math_Standards_for_Mathematics_Vertical.pdf</a>   |
| Nevada               | <a href="http://www.doe.nv.gov/Standards_Instructional_Support/Nevada_Academic_Standards/Mathematics/">http://www.doe.nv.gov/Standards_Instructional_Support/Nevada_Academic_Standards/Mathematics/</a>   |
| New Hampshire        | <a href="http://education.nh.gov/instruction/curriculum/math/index.htm">http://education.nh.gov/instruction/curriculum/math/index.htm</a>   |
| New Jersey           | <a href="http://www.state.nj.us/education/ccs/2016/math/standards.pdf">http://www.state.nj.us/education/ccs/2016/math/standards.pdf</a>   |
| New Mexico           | <a href="http://newmexicocommoncore.org">http://newmexicocommoncore.org</a>   |
| New York             | <a href="https://www.engageny.org/file/741/download/nysp12cclsmath.pdf">https://www.engageny.org/file/741/download/nysp12cclsmath.pdf</a>   |
| North Carolina       | <a href="http://maccess.ncdpi.wikispaces.net/2017+Mathematics+Standards">http://maccess.ncdpi.wikispaces.net/2017+Mathematics+Standards</a>   |
| North Dakota         | <a href="https://www.nd.gov/dpi/uploads/87/2017MathematicsStandards.pdf">https://www.nd.gov/dpi/uploads/87/2017MathematicsStandards.pdf</a>   |
| Ohio                 | <a href="http://education.ohio.gov/Topics/Learning-in-Ohio/Mathematics/Ohio-s-Learning-Standards-in-Mathematics">http://education.ohio.gov/Topics/Learning-in-Ohio/Mathematics/Ohio-s-Learning-Standards-in-Mathematics</a>   |
| Oklahoma             | <a href="http://sde.ok.gov/sde/sites/ok.gov/sde/files/documents/files/OAS-Math-Final%20Version_3.pdf">http://sde.ok.gov/sde/sites/ok.gov/sde/files/documents/files/OAS-Math-Final%20Version_3.pdf</a>   |
| Oregon               | <a href="http://www.ode.state.or.us/wma/teachlearn/commoncore/ccssmath.pdf">http://www.ode.state.or.us/wma/teachlearn/commoncore/ccssmath.pdf</a>   |
| Pennsylvania         | <a href="http://static.pdesas.org/content/documents/PA%20Core%20Standards%20PreK-12%20March%202014.pdf">http://static.pdesas.org/content/documents/PA%20Core%20Standards%20PreK-12%20March%202014.pdf</a>   |
| Rhode Island         | <a href="http://www.ride.ri.gov/Instruction/Assessment/Mathematics/CommonCoreStateStandardsforMathematics.aspx">http://www.ride.ri.gov/Instruction/Assessment/Mathematics/CommonCoreStateStandardsforMathematics.aspx</a>   |
| South Carolina       | <a href="http://ed.sc.gov/instruction/standards-learning/mathematics/standards/scccr-standards-for-mathematics-final-print-on-one-side/">http://ed.sc.gov/instruction/standards-learning/mathematics/standards/scccr-standards-for-mathematics-final-print-on-one-side/</a>   |
| South Dakota         | <a href="http://www.doe.sd.gov/ContentStandards/">http://www.doe.sd.gov/ContentStandards/</a>   |
| Tennessee            | <a href="https://www.tn.gov/assets/entities/sbe/attachments/4-15-16_V_A_Math_Standards_Attachment.pdf">https://www.tn.gov/assets/entities/sbe/attachments/4-15-16_V_A_Math_Standards_Attachment.pdf</a>   |
| Texas                | <a href="http://fitter.tea.state.tx.us/rules/fac/chapter111/ch111a.pdf">http://fitter.tea.state.tx.us/rules/fac/chapter111/ch111a.pdf</a>   |
| Utah                 | <a href="http://www.schools.utah.gov/CURR/mathelem/Core/ElementaryMathematics.aspx">http://www.schools.utah.gov/CURR/mathelem/Core/ElementaryMathematics.aspx</a>   |
| Vermont              | <a href="http://education.vermont.gov/student-learning/content-areas/mathematics">http://education.vermont.gov/student-learning/content-areas/mathematics</a>   |
| Virginia             | <a href="http://www.doe.virginia.gov/testing/sol/standards_docs/mathematics/2016/stds/k-12-math-sol.pdf">http://www.doe.virginia.gov/testing/sol/standards_docs/mathematics/2016/stds/k-12-math-sol.pdf</a>   |
| Washington           | <a href="http://www.k12.wa.us/Mathematics/Standards.aspx">http://www.k12.wa.us/Mathematics/Standards.aspx</a>   |
| West Virginia        | <a href="http://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=27353&amp;Format=PDF">http://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=27353&amp;Format=PDF</a>   |
| Wisconsin            | <a href="http://dpi.wi.gov/sites/default/files/incc/standards/pdf/common-core-math-standards.pdf">http://dpi.wi.gov/sites/default/files/incc/standards/pdf/common-core-math-standards.pdf</a>   |
| Wyoming              | <a href="https://edu.wyoming.gov/downloads/standards/final-2012-math-standards.pdf">https://edu.wyoming.gov/downloads/standards/final-2012-math-standards.pdf</a>   |
| Massachusetts draft  | <a href="http://www.doe.mass.edu/CandI/StandardsReview/Math-FullDraft.pdf">http://www.doe.mass.edu/CandI/StandardsReview/Math-FullDraft.pdf</a>   |
| New York draft       | <a href="http://www.nysed.gov/teachers/new-york-state-revised-mathematics-learning-standards">http://www.nysed.gov/teachers/new-york-state-revised-mathematics-learning-standards</a>   |