

# Out of Sync

## Many Common Core States Have Yet to Define a Common Core-worthy Diploma

Forty-five states and the District of Columbia have voluntarily adopted rigorous Common Core State Standards for what their K-12 public school students should know and be able to do in mathematics and English Language Arts. Yet most of these states have yet to take a critical step towards making those standards a reality: they do not require high school graduates to complete the math classes that typically cover the content described in the new standards.<sup>1</sup> Until states and districts re-examine their graduation policies, a high school diploma will not necessarily signify college- and career-readiness as envisioned by Common Core.

Change the Equation and the National School Boards Association's Center for Public Education have compared states' high school graduation requirements in math to the Common Core standards to see how well they align. We determined that graduation requirements most likely to be aligned to the Common Core standards must include math in each year of high school and convey substantial content typically taught in Algebra I, Geometry, and Algebra II classes.

*(See our methodology for a complete description of how we determined alignment on Page 4).<sup>2</sup>*

According to our analysis, graduation requirements in only 11 Common Core states meet this definition of alignment, and requirements in 13 are partially aligned.<sup>3</sup> This leaves 22 states that have adopted the Common Core but lack corresponding graduation requirements that match the expectations of new standards.<sup>4</sup> Some Common

Core states with rigorous graduation requirements are rolling them back. Florida recently removed Algebra II from its requirements, and Michigan may follow suit. *(See Map on Page 2)*

It is important to note that our definition of alignment does not tell the whole story. Even states whose graduation requirements appear to reflect the demands of the Common Core may still have much work to do to ensure that their high school course sequence and content is truly aligned to the standards.

Because the Common Core State Standards describe outcomes, it remains up to states and districts to outline the classes and curriculum that best deliver the mathematical content and practices the standards define.

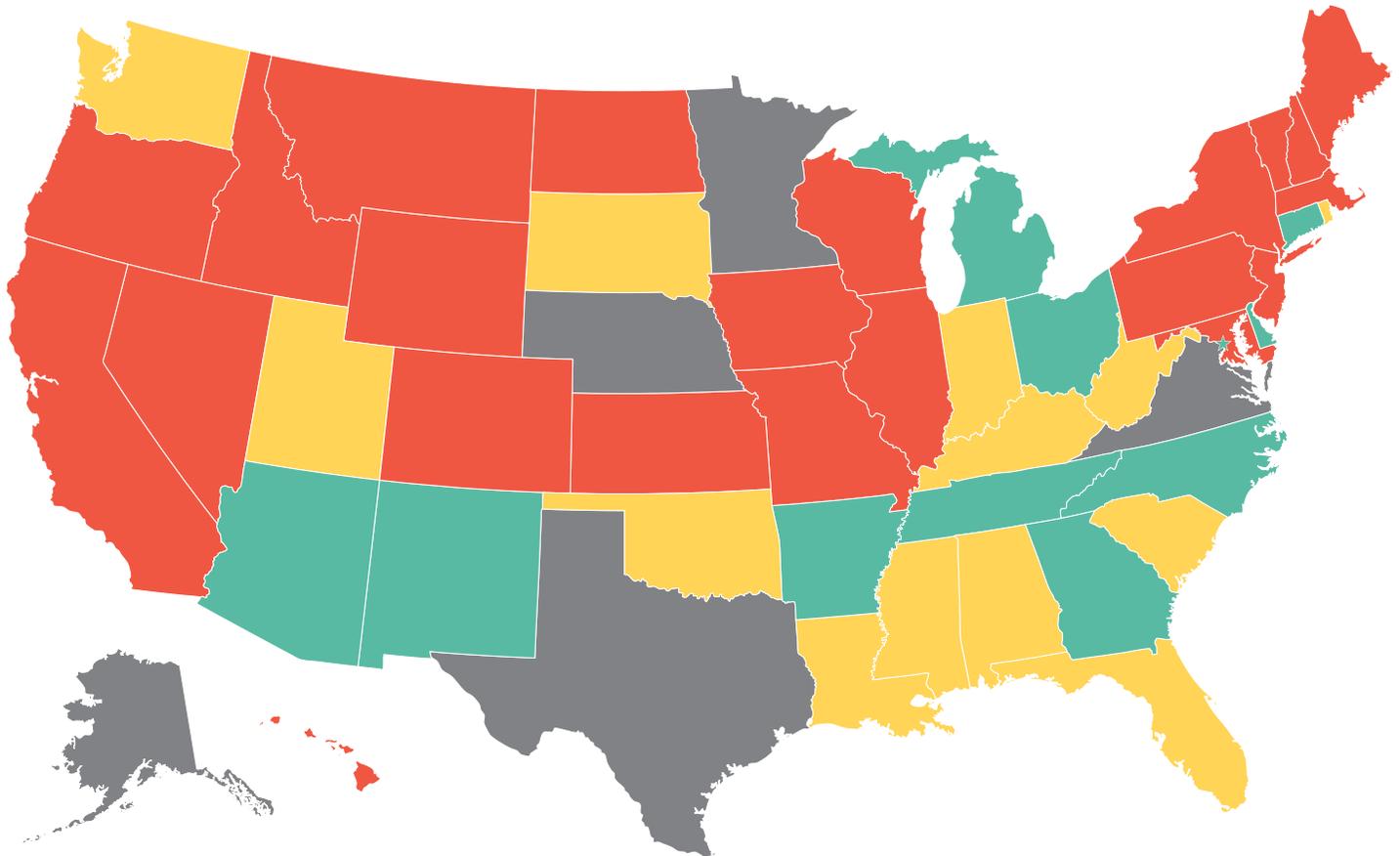
The only way that students will meet the Common Core Standards, of course, is to ensure that the necessary material is taught. Indeed, the "traditional" course pathway — Algebra I, Geometry, Algebra II, and further mathematical coursework—might neglect critical Common Core content or mathematical practices if the courses are not re-examined and aligned to the new demands and teachers are prepared to teach the content. States and districts whose requirements stop before Algebra II are even less likely to expose all their high school students to the full range of Common Core material.

---

*"This leaves 22 states that have adopted the Common Core but lack corresponding graduation requirements that match the expectations of new standards."*

## MAP

# Alignment of State Graduation Requirements and Common Core State Standards in Math



as of June 5, 2013

■ Fully aligned

Four years of math including a math sequence through Algebra II/Integrated Math III plus one more

■ Partially aligned

Three years of math through Algebra II/IM III or 4 years of math without Algebra II/IM III

■ Not aligned

Three years or less without Algebra II/IM III

■

Not a Common Core state

We do not mean to suggest that every state should require a course called “Algebra II.” States and districts may decide to organize Common Core content into coherent and rigorous alternative pathways towards high school graduation that do not easily align with traditional course titles. Such pathways would

include much of the content taught in the most rigorous Algebra II classes as called for in the new standards. When well designed, such pathways might in fact better align with the goals of Common Core than would a poorly designed sequence leading to Algebra II and beyond. Yet few states have clearly defined such alternatives thus far.

**CHART**

# Alignment of State Graduation Requirements and Common Core State Standards in Math

Aligned	Partially Aligned	Not Aligned	Not a Common Core State
Arizona Arkansas Connecticut Delaware District of Columbia Georgia Michigan New Mexico North Carolina Ohio Tennessee	Alabama Florida Indiana Kentucky Louisiana Mississippi Oklahoma Rhode Island South Carolina South Dakota Utah Washington West Virginia	California Colorado Hawaii Idaho Illinois Iowa Kansas Maine Maryland Massachusetts Missouri Montana Nevada New Hampshire New Jersey New York North Dakota Oregon Pennsylvania Vermont Wisconsin Wyoming	Alaska Minnesota <i>(math only)</i> Nebraska Texas Virginia

as of June 5, 2013

- **Fully aligned** Four years of math including a math sequence through Algebra II/Integrated Math III plus one more
- **Partially aligned** Three years of math through Algebra II/IM III or 4 years of math without Algebra II/IM III
- **Not aligned** Three years or less without Algebra II/IM III
- Not a Common Core state

Neither the Common Core standards nor high school graduation requirements are federally mandated, nor should they be. States should continue to determine how best to bring their students to proficiency, and ultimately to a high school diploma. But states and districts can send an important message to communities that they

are serious about the higher bar set by the new standards. Ambitious graduation requirements will provide a vital foundation for state and local efforts to ensure that every student develops the knowledge and skills defined in the Common Core and thereby show their commitment to prepare all students for college and careers.

**Methodology:** According to the Common Core State Standards' Mathematics [Appendix A](#), the "pathways assume mathematics in each year of high school and lead directly to preparedness for college and career readiness (page 3)." For our analysis, we considered graduation requirements in math to be aligned if they call for math in each year of high school, including Algebra I, geometry and Algebra II. The Common Core authors suggest two curricular pathways through high school mathematics that incorporate all of the high school benchmarks:

- the traditional pathway: Algebra I, Geometry, Algebra II, plus further mathematical or technical coursework; or
- the integrated pathway: Integrated Math I, Integrated Math II, Integrated Math III, plus further mathematical or technical coursework.

States and districts may design other course sequences that align with these standards. However, any pathway would have to include substantial content traditionally taught in Algebra I, geometry, Algebra II, and statistics and probability courses.

States' graduation requirements were first collected by the American Institutes for Research as part of Change the Equation's 2012 Vital Signs reports on STEM learning. Change the Equation and the Center for Public Education confirmed and updated these requirements through information provided on the websites of the state departments of education.

States that do not define graduation requirements at the state level were considered "not aligned." However, it is worth noting that Massachusetts and West Virginia recommend that districts adopt a curriculum that is aligned, though districts are not bound to follow the states' recommendations.

Finally, several states have a "default curriculum" that is aligned with Common Core, meaning that students are automatically enrolled in a course program that leads to college- and career-readiness. Students and parents are able to "opt out" of the higher level curriculum. For our purposes, we credited these states with having aligned graduation requirements.

For a complete description of each state's high school graduation requirements, see "Detail on Mathematics graduation requirements from public high schools by state."

## Sources

- 1 Mathematics makes the best point of comparison, because course titles in math are a better proxy for the level of content addressed than they are in English language arts, which often bear more generic course titles like "English 9" or "English 10."
  - 2 An appendix to the Common Core State Standards describes two possible pathways students can follow to master the mathematics content and practices in the standards, both of which include substantial content typically taught in Algebra II courses. The first, or "traditional," pathway includes Algebra I, geometry, Algebra II and further mathematical or technical coursework, with probability and statistics included in each course. The second, or "integrated," pathway "consists of a sequence of three courses, each of which includes number, algebra, geometry, probability and statistics," leading to further mathematical or technical coursework. Both pathways include substantial Algebra II content.
  - 3 Partial alignment means the state requires three credits in math through Algebra II, or four credits without Algebra II.
  - 4 Some states, like Massachusetts and Colorado, do not specify graduation requirements at the state level. Colorado does not currently specify graduation requirements but is likely to do so before the end of 2013.
  - 5 Of the states that specify course requirements in math, only three do not use traditional course titles: Kansas, Nebraska, and Wisconsin. None of those states align with Common Core. Other states, such as North Carolina and Washington State, follow the lead of Common Core's authors in specifying an "integrated" pathway in addition to a traditional pathway.
- MAP Common Core State Standards Mathematics Appendix A and State Departments of Education. Analysis by the Center for Public Education and Change the Equation, May 2013.

The Center for Public Education is a national resource for credible and practical information about public education and its importance to the well-being of our nation. The Center provides up-to-date research, data, and analysis on current education issues and explores ways to improve student achievement and engage public support for public schools. The Center is an initiative of the National School Boards Association. [www.centerforpubliceducation.org](http://www.centerforpubliceducation.org)

About Change the Equation Change the Equation is a nonprofit, nonpartisan, CEO-led initiative that is mobilizing the business community to improve the quality of STEM learning in the United States. CTEq's coalition of members strives to sustain a national movement to improve PreK-12 STEM learning by leveraging and expanding its work focusing on three goals: improving philanthropy, inspiring youth and advocating for change. [www.changetheequation.org](http://www.changetheequation.org)

