

DESIGNING COHERENT MATH INSTRUCTION

PURPOSE	DESCRIPTION	LINK
Build Knowledge	<b>The Coherence Map (2015 October Webinar):</b> The Coherence Map is an interactive tool that allows teachers to see the connections between math standards within and across grades. You may have seen the previous static version (often referred to as the Zimba Wiring Diagram), but the digital tool will wow you.	<a href="http://achievethecore.org/page/2797/the-coherence-map-2015-oct-webinar">http://achievethecore.org/page/2797/the-coherence-map-2015-oct-webinar</a>
	<b>Supporting ALL Learners in Working with Grade-Level Mathematics (March 2017 Webinar):</b> This webinar explores how to use the vertical and horizontal coherence of the math standards to address students' unfinished learning within grade-level contexts. See how you might use the Coherence Map and rich math tasks with multiple entry points to explicitly plan to address the needs of all students in your classroom.	<a href="http://achievethecore.org/page/2978/supporting-all-learners-in-working-with-grade-level-mathematics-march-2017">http://achievethecore.org/page/2978/supporting-all-learners-in-working-with-grade-level-mathematics-march-2017</a>
	<b>The Structure is the Standards:</b> An essay by CCSSM lead writers Phil Daro, William McCallum, and Jason Zimba that describes the importance of the structure of the standards and cautions against fragmenting the standards or taking them out of context.	<a href="http://achievethecore.org/page/845/the-structure-is-the-standards">http://achievethecore.org/page/845/the-structure-is-the-standards</a>
	<b>Aligned &lt; Creating a Coherent Math Curriculum:</b> This blog post discusses how the Coherence Map can help you uncover gaps in understanding and find resources to supplement your instructional materials.	<a href="http://achievethecore.org/aligned/creating-a-coherent-math-curriculum/">http://achievethecore.org/aligned/creating-a-coherent-math-curriculum/</a>
	<b>Aligned &lt; Navigating the Spiral in Mathematics Textbooks:</b> A classroom teacher and curriculum coordinator describe how they used the spiral design of their textbook to help them focus on creating coherent instruction.	<a href="http://achievethecore.org/aligned/navigating-the-spiral-in-mathematics-textbooks/">http://achievethecore.org/aligned/navigating-the-spiral-in-mathematics-textbooks/</a>
	<b>Aligned &lt; Forming a United Whole – The Coherence Map:</b> A K-12 STEM District Supervisor explains how he used the Coherence Map to improve his district's math curriculum.	<a href="http://achievethecore.org/aligned/forming-a-united-whole-the-coherence-map/">http://achievethecore.org/aligned/forming-a-united-whole-the-coherence-map/</a>
	<b>Aligned &lt; Unfinished Learning in Math: How Do You Address It?</b> A high school math teacher explains how you can use the Coherence Map to identify and address unfinished learning needs efficiently so that students can engage with grade-level mathematics.	<a href="https://achievethecore.org/aligned/unfinished-learning-in-math-how-do-you-address-it/">https://achievethecore.org/aligned/unfinished-learning-in-math-how-do-you-address-it/</a>
Share with Groups	<b>Coherence Card Activity from the Deep Dive into the Mathematics Shifts:</b> Use the Coherence Activity: Uncovering Progressions and Themes from the Deep Dive into the Math Shifts Professional Development to support a stronger understanding of coherence.	<a href="http://achievethecore.org/page/400/deep-dive-into-the-math-shifts">http://achievethecore.org/page/400/deep-dive-into-the-math-shifts</a>
	<b>Lesson Planning Tool:</b> This tool provides guiding questions and supports to help teachers create lessons that align to the Shifts required by the Common Core. It includes a module dedicated to creating coherent connections within a lesson.	<a href="http://achievethecore.org/lesson-planning-tool/">http://achievethecore.org/lesson-planning-tool/</a>
Try in the Classroom	<b>Coherence Map:</b> Standards relate to one another, both within and across grades. The Coherence Map is an interactive website that illustrates the coherent structure of the Common Core State Standards for Mathematics K-8, with related tasks, assessment items, and other supportive material.	<a href="http://achievethecore.org/coherence-map/">http://achievethecore.org/coherence-map/</a>

## CREATING FOCUS IN THE MATH CLASSROOM

PURPOSE	DESCRIPTION	LINK
Build Knowledge	<p><b>Mathematics: Focus by Grade Level:</b> The standards call for a greater focus in mathematics. Rather than racing to cover topics in a mile-wide, inch-deep curriculum, the standards require us to significantly narrow and deepen the way time and energy is spent in the math classroom. These documents identify the Major Work that students need in each grade to gain strong foundations: solid conceptual understanding, a high degree of procedural skill and fluency, and the ability to apply the math they know to solve problems inside and outside the math classroom.</p>	<a href="http://achievethecore.org/category/774/mathematics-focus-by-grade-level">http://achievethecore.org/category/774/mathematics-focus-by-grade-level</a>
	<p><b>Aligned &lt; Everyday Math: Small Routines Build Bigger Understanding:</b> A Kindergarten teacher dives into <i>Everyday Math</i> and finds ways to make minor routines into Major Work of the Grade practice.</p>	<a href="http://achievethecore.org/aligned/everyday-math-small-routines-build-bigger-understanding/">http://achievethecore.org/aligned/everyday-math-small-routines-build-bigger-understanding/</a>
	<p><b>Observations on CCSSM Standards for Mathematical Content: What Content Is Visibly Emphasized?:</b> This document shows how the concept of focus in mathematics was built into the Common Core State Standards. It shows different ways you can look at the Standards to see how an emphasis on the Major Work of the Grade is integral to the structure of the Standards themselves.</p>	<a href="http://achievethecore.org/page/1220/observations-on-ccssm-standards-for-mathematical-content-what-content-is-visibly-emphasized">http://achievethecore.org/page/1220/observations-on-ccssm-standards-for-mathematical-content-what-content-is-visibly-emphasized</a>
	<p><b>Aligned &lt; Putting Focus into Practice: The Case of Word Problems in Grades K–2:</b> Standards co-author Jason Zimba explains how word problems can build understanding of addition and subtraction.</p>	<a href="http://achievethecore.org/aligned/putting-focus-into-practice-the-case-of-word-problems-in-grades-k-2/">http://achievethecore.org/aligned/putting-focus-into-practice-the-case-of-word-problems-in-grades-k-2/</a>
Share with Groups	<p><b>Focus Activity from the Introduction to the Math Shifts:</b> This activity allows participants to practice identifying the Major Work of the Grade.</p>	<a href="http://achievethecore.org/page/399/introduction-to-the-math-shifts">http://achievethecore.org/page/399/introduction-to-the-math-shifts</a>
	<p><b>Module 101 from the Introduction to the Criteria &amp; Metrics of the IMET: Mathematics Professional Development:</b> Participants explore the topic of focus through examples and non-examples.</p>	<a href="http://achievethecore.org/page/2773/4-introduction-to-the-criteria-metrics-of-the-imet-mathematics-professional-development">http://achievethecore.org/page/2773/4-introduction-to-the-criteria-metrics-of-the-imet-mathematics-professional-development</a>
	<p><b>Lesson Planning Tool:</b> This tool provides guiding questions and supports to help teachers create lessons that align to the Shifts required by the Common Core. It includes a module dedicated to examining the mathematics of the lesson.</p>	<a href="http://achievethecore.org/lesson-planning-tool/">http://achievethecore.org/lesson-planning-tool/</a>
Try in the Classroom	<p><b>Mathematics Lessons:</b> All lessons on AchievetheCore focus on standards that are part of the Major Work of the Grade.</p>	<a href="http://achievethecore.org/category/854/mathematics-lessons">http://achievethecore.org/category/854/mathematics-lessons</a>
	<p><b>Mathematics Tasks:</b> All tasks on AchievetheCore focus on standards that are part of the Major Work of the Grade.</p>	<a href="http://achievethecore.org/category/416/mathematics-tasks">http://achievethecore.org/category/416/mathematics-tasks</a>
	<p><b>Mini-Assessments:</b> All mini-assessments on AchievetheCore focus on standards that are part of the Major Work of the Grade.</p>	<a href="http://achievethecore.org/category/1020/mathematics-assessments">http://achievethecore.org/category/1020/mathematics-assessments</a>

## ADDRESSING THE ELEMENTS OF RIGOR IN YOUR CLASSROOM

PURPOSE	DESCRIPTION	LINK
Build Knowledge	<b>Rigor in Math: Why Rigor Doesn't Mean Harder (2016 March Webinar):</b> The Common Core Shift of rigor doesn't just mean "harder" or "trickier" but rather a balance of conceptual understanding, procedural skill and fluency, and application in math instruction.	<a href="http://achievethecore.org/page/2835/rigor-in-math-why-rigor-doesn-t-mean-harder-2016-march-webinar">http://achievethecore.org/page/2835/rigor-in-math-why-rigor-doesn-t-mean-harder-2016-march-webinar</a>
	<b>Aligned &lt; Demonstrating Conceptual Understanding of Mathematics Using Technology:</b> A teacher discusses how to use free recording software to capture students' solution methods and help teachers reflect on their instruction.	<a href="http://achievethecore.org/aligned/demonstrating-conceptual-understanding-of-mathematics-using-technology/">http://achievethecore.org/aligned/demonstrating-conceptual-understanding-of-mathematics-using-technology/</a>
	<b>Math Fluency Across the Grades (June 2017 Webinar):</b> This webinar addresses the importance of developing math fluency and offers strategies for building fluency skills.	<a href="https://achievethecore.org/page/3113/math-fluency-across-the-grades-2017-june-webinar">https://achievethecore.org/page/3113/math-fluency-across-the-grades-2017-june-webinar</a>
Share with Groups	<b>Rigor Activity from the Deep Dive into the Math Shifts:</b> In this activity, participants will analyze sample problems.	<a href="http://achievethecore.org/page/400/deep-dive-into-the-math-shifts">http://achievethecore.org/page/400/deep-dive-into-the-math-shifts</a>
	<b>Mathematics Shifts in Assessment:</b> Presentation to illustrate what the math Shifts look like in CCSS-aligned assessment. See examples of test questions and learn about what's different with CCSS assessment -- and why. Specifically review slides 29–38 to center your study on rigor.	<a href="http://achievethecore.org/page/2855/mathematics-shifts-in-assessment">http://achievethecore.org/page/2855/mathematics-shifts-in-assessment</a>
	<b>Module 102 from the Introduction to the Criteria &amp; Metrics of the IMET: Mathematics Professional Development:</b> Participants explore the aspects of rigor through examples and non-examples.	<a href="http://achievethecore.org/page/2773/4-introduction-to-the-criteria-metrics-of-the-imet-mathematics-professional-development">http://achievethecore.org/page/2773/4-introduction-to-the-criteria-metrics-of-the-imet-mathematics-professional-development</a>
Try in the Classroom	<b>Mathematics Lessons:</b> All lessons on AchievetheCore address the appropriate aspect of rigor for the given standard.	<a href="http://achievethecore.org/category/854/mathematics-lessons">http://achievethecore.org/category/854/mathematics-lessons</a>
	<b>Mathematics Tasks:</b> All tasks on AchievetheCore address the appropriate aspect of rigor for the given standard.	<a href="http://achievethecore.org/category/416/mathematics-tasks">http://achievethecore.org/category/416/mathematics-tasks</a>
	<b>Mini-Assessments:</b> All mini-assessments on AchievetheCore address the appropriate aspect of rigor for the given standard.	<a href="http://achievethecore.org/category/1020/mathematics-assessments">http://achievethecore.org/category/1020/mathematics-assessments</a>
	<b>Fluency Resources for Grade-Level Routines (K–5):</b> These quick fluency activities support students' progress toward grade-level fluency expectations. They are intentionally short so that they can be easily incorporated into any time during the school day.	<a href="https://achievethecore.org/page/2948/fluency-resources-for-grade-level-routines">https://achievethecore.org/page/2948/fluency-resources-for-grade-level-routines</a>

## WORKING WITH IMPERFECT MATERIALS

PURPOSE	DESCRIPTION	LINK
Build Knowledge	<b>Understanding and Using Imperfect Curricular Resources (2016 August Webinar):</b> The lack of aligned instructional materials is a consistent struggle for teachers implementing college- and career-ready standards. Although more closely aligned materials are becoming available, many teachers are working with imperfect materials. This webinar explores resources to support your work when your curricular resources are not as aligned as you are!	<a href="http://achievethecore.org/page/2883/understanding-and-using-imperfect-curricular-resources-2016-august-webinar">http://achievethecore.org/page/2883/understanding-and-using-imperfect-curricular-resources-2016-august-webinar</a>
	<b>Aligned &lt; Top Five Ways to Make the Most of Your Math Materials:</b> If you're not satisfied with the quality and CCSS-alignment of your existing math materials, here are five tips to improve them. [You can find a PD bundle of <i>Aligned</i> posts on this topic on Pinterest: <a href="https://www.pinterest.com/achievethecore/adaptation-resources/">https://www.pinterest.com/achievethecore/adaptation-resources/</a> ]	<a href="http://achievethecore.org/aligned/top-five-ways-to-make-the-most-of-your-math-materials/">http://achievethecore.org/aligned/top-five-ways-to-make-the-most-of-your-math-materials/</a>
	<b>Aligned &lt; Using an EdReports Review to Improve My Math Curriculum:</b> A 5th grade teacher explains how she made small adjustments to improve the <i>Everyday Math</i> curriculum after identifying its weaknesses.	<a href="http://achievethecore.org/aligned/using-an-edreports-review-to-improve-my-math-curriculum/">http://achievethecore.org/aligned/using-an-edreports-review-to-improve-my-math-curriculum/</a>
	<b>Aligned &lt; Improve Your Materials:</b> This section of <i>Aligned</i> is dedicated to supplementing and adapting mathematics materials to improve alignment to college- and career-ready standards. [You can find a PD bundle of <i>Aligned</i> posts on this topic on Pinterest: <a href="https://www.pinterest.com/achievethecore/adaptation-resources/">https://www.pinterest.com/achievethecore/adaptation-resources/</a> ]	<a href="http://achievethecore.org/aligned/category/improve-your-materials/?tag=mathematics">http://achievethecore.org/aligned/category/improve-your-materials/?tag=mathematics</a>
Share with Groups	<b>GO Math! K-5 Guidance Documents:</b> These documents provide guidance for implementing <i>GO Math!</i> K-5 in ways that best align to college- and career-ready standards.	<a href="http://achievethecore.org/page/2853/go-math-k-5-guidance-documents">http://achievethecore.org/page/2853/go-math-k-5-guidance-documents</a>
	<b>Lesson Planning Tool:</b> This tool provides guiding questions and supports to help teachers create lessons that align to the Shifts required by the Common Core. It can be used to modify lessons to increase alignment.	<a href="http://achievethecore.org/lesson-planning-tool/">http://achievethecore.org/lesson-planning-tool/</a>
Try in the Classroom	<b>Mathematics Lessons:</b> Lessons on AchievetheCore can be used to supplement a math curriculum.	<a href="http://achievethecore.org/category/854/mathematics-lessons">http://achievethecore.org/category/854/mathematics-lessons</a>
	<b>Mathematics Tasks:</b> Tasks on AchievetheCore can be used to supplement a math curriculum.	<a href="http://achievethecore.org/category/416/mathematics-tasks">http://achievethecore.org/category/416/mathematics-tasks</a>
	<b>Mini-Assessments:</b> Mini-assessments on AchievetheCore can be used to supplement a math curriculum.	<a href="http://achievethecore.org/category/1020/mathematics-assessments">http://achievethecore.org/category/1020/mathematics-assessments</a>
	<b>Coherence Map:</b> Standards relate to one another, both within and across grades. The Coherence Map is an interactive website that illustrates the coherent structure of the Common Core State Standards for Mathematics K–8, with related tasks, assessment items, and other supportive material that can be used to supplement incomplete materials.	<a href="http://achievethecore.org/coherence-map/">http://achievethecore.org/coherence-map/</a>

## INTEGRATING THE STANDARDS INTO YOUR PLC

PURPOSE	DESCRIPTION	LINK
Build Knowledge	<b>Building a Deeper Understanding of the Math Standards in PLCs (2016 September Webinar):</b> When math teachers collaborate in a PLC, they often focus on planning and instruction. This webinar explores ways in which math content can be incorporated into a PLC and lead to deeper teacher understanding and increased student achievement in math.	<a href="http://achievethecore.org/page/2890/building-a-deeper-understanding-of-the-math-standards-in-plcs-2016-september-webinar">http://achievethecore.org/page/2890/building-a-deeper-understanding-of-the-math-standards-in-plcs-2016-september-webinar</a>
	<b>Aligned &lt; Designing Shifts-Aligned Interventions in the Math Classroom:</b> Avoid common pitfalls when it comes to supporting students with unfinished math learning	<a href="https://achievethecore.org/aligned/designing-shifts-aligned-interventions-in-the-math-classroom/">https://achievethecore.org/aligned/designing-shifts-aligned-interventions-in-the-math-classroom/</a>
	<b>Aligned &lt; What Really Counts When We Teach:</b> This <i>Aligned</i> blog post talks about the importance of discipline-specific feedback for teachers.	<a href="http://achievethecore.org/aligned/what-really-counts-when-we-teach/">http://achievethecore.org/aligned/what-really-counts-when-we-teach/</a>
	<b>Aligned &lt; Using Mini-Assessments in a Professional Learning Setting:</b> A math coach describes how mini-assessments can be used to support professional learning for educators.	<a href="https://achievethecore.org/aligned/using-mini-assessments-in-a-professional-learning-setting/">https://achievethecore.org/aligned/using-mini-assessments-in-a-professional-learning-setting/</a>
	<b>Mathematics Instructional Practice Guide: Coaching Tool:</b> This module focuses on using the Instructional Practice Guide: Coaching Tool to build understanding and experience with Common Core State Standards (CCSS)-aligned instruction. Within the module, there are activities and discussions based on the Core Actions that will prepare participants to use the IPG.	<a href="http://achievethecore.org/page/990/mathematics-instructional-practice-guide-coaching-tool">http://achievethecore.org/page/990/mathematics-instructional-practice-guide-coaching-tool</a>
Share with Groups	<b>Common Core Knowledge and Practice Survey:</b> This is a tool for educators to reflect on their instructional practice and understanding of the CCSS. Designed for use in a PLC setting within a school, the survey is meant to spark conversation, identify areas for growth, and offer concrete ways for teams of teachers to continue to align their practice to the Shifts.	<a href="http://achievethecore.org/page/1104/common-core-knowledge-and-practice-survey">http://achievethecore.org/page/1104/common-core-knowledge-and-practice-survey</a>
	<b>Instructional Practice Toolkit:</b> This professional learning module supports understanding of planning and instruction aligned to college and career readiness standards for mathematics through the observation of a lesson and analysis of a lesson plan and student work samples.	<a href="http://achievethecore.org/category/1193/instructional-practice-toolkit-and-classroom-videos">http://achievethecore.org/category/1193/instructional-practice-toolkit-and-classroom-videos</a>
	<b>Supplemental Lesson Videos:</b> These full-length lesson videos include lesson plans and student work samples, and may be used to supplement the content found in the Instructional Practice Toolkit.	<a href="http://achievethecore.org/category/1196/supplemental-lesson-videos?filter_cat=1197&amp;sort=name">http://achievethecore.org/category/1196/supplemental-lesson-videos?filter_cat=1197&amp;sort=name</a>
Try in the Classroom	<b>Mathematics Lessons:</b> All lessons on AchievetheCore address the grade-level standards.	<a href="http://achievethecore.org/category/854/mathematics-lessons">http://achievethecore.org/category/854/mathematics-lessons</a>
	<b>Mathematics Tasks:</b> All tasks on AchievetheCore address the grade-level standards.	<a href="http://achievethecore.org/category/416/mathematics-tasks">http://achievethecore.org/category/416/mathematics-tasks</a>

	<b>Mini-Assessments:</b> All mini-assessments on AchievetheCore address the grade-level standards.	<a href="http://achievethecore.org/category/1020/mathematics-assessments">http://achievethecore.org/category/1020/mathematics-assessments</a>
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