

USER'S GUIDE: INTRODUCTION TO THE MATH SHIFTS FOR THE COMMON CORE STATE STANDARDS

Common Core Shifts for Math

1. **Focus** strongly where the Standards focus
2. **Coherence:** Think across grades and link to major topics within grades
3. **Rigor:** In major topics, pursue **conceptual understanding**, procedural skill and **fluency**, and **application** with equal intensity

The Introduction to the Math Shifts Module is a 1–4 hour module provides participants with an introduction to the key shifts required by the Common Core State Standards (CCSS) for Mathematics.

What's In This Module?

1. User's Guide
2. PowerPoint Presentation with embedded Core Video (46 slides, with User's notes).
Please note PPT may take approximately 5 minutes to download.
3. PowerPoint Presentation with embedded video for share-out (46 slides, does not include User's notes).
Please note PPT may take approximately 5 minutes to download.
4. PowerPoint Presentation *without* embedded video (46 slides, with User's notes)
5. PowerPoint Presentation *without* embedded video for share-out (46 slides, does not include User's notes).
6. 1 Hands-on Activity
 - *Practicing with the Shifts: The Common Core State Standards in Mathematics*
 - *Practicing with the Shifts: Answer Document*
7. 2 Handouts
 - *Key Shifts of the Common Core State Standards in Mathematics*
 - *Processing the Shifts*
8. 1 Discussion Topic
9. Related Research/Readings (4 articles/related readings + Discussion Questions)
 - *Common Core State Standards for Mathematics (required for the Hands-on Activity)*
 - [Publishers' Criteria for Mathematics](#)
 - *Phoenix Rising: Bringing the Common Core State Mathematics Standards to Life* by Hung-Hsi Wu
 - *New Twist on an Old Standard* by Jason Zimba
 - *Discussion Questions for Additional Readings*
10. Video Resources
11. Web Resources

Using This Module

You are encouraged to customize any or all portions of this module to meet the needs of your audience. These modules are intended to fit into a variety of different professional development settings; below are suggestions for implementation depending on the time available. All times are suggested and be expanded to incorporate more discussion as needed. Any portions of this module may be modified, reproduced and disseminated without prior permission.

If you have 1 hour...	If you have 2 hours...	If you have 4 hours...
1. Share the PowerPoint presentation (1 hour) without activities	1. Share the PowerPoint presentation (1 hour)	1. Share the PowerPoint presentation (1 hour)
2. Assign Handouts as a take home activity (On Your Own)	2. Lead 3 embedded Hands-On activities without discussion topics (20 mins per activity)	2. Lead 3 embedded Hands-On activities including discussion questions (30 mins per activity)
3. Use remaining module components (Hands-On Activity, Discussion Topics, Related Reading, Additional Videos & Web Resources) as time permits throughout the year (i.e.: in professional learning communities)	3. Use remaining module components (Discussion Topics, Related Reading, Additional Videos & Web Resources) as time permits throughout the year (i.e.: in professional learning communities)	3. Lead conversation around Discussion Topics (30 mins)
		4. Share Additional Videos and/or Related Readings and facilitate associated discussions (45 mins – 1 hour)

Suggested Module Delivery

1. **Share the PowerPoint Presentation “Common Core State Standards for Mathematics: Key Shifts” including three “Practicing with the Shifts” activities (2.5 hours)**

The presentation provides participants with a comprehensive overview of the three key shifts required by the Common Core State Standards for Mathematics. Embedded in the presentation are videos of lead writers of the Standards discussing the key shifts of focus, coherence, and rigor. There are three embedded activities that will strengthen the participants understanding of the shifts. Allow for time after each activity for discussion.

- **Shift One Activity: Focus Strongly Where the Standards Focus: Engaging with the shift: What do you think belongs in the major work of each grade?**
Participants will examine three topics for grades Kindergarten through Algebra 2 and determine which two of the three given topics are major areas of focus for that grade or course. It is encouraged that participants attempt this activity first without consulting the Standards or Content Emphases Charts to allow for thoughtful engagement and discussion. *Note: the topic that is not the major work of that grade is also not a topic required by the Standards at all for that grade. Share this hint with the participants if necessary.*
 - **Shift Two Activity: Coherence: Think across grades; link to major topics within grades: Engaging with the shift: Investigate coherence in the Standards with respect to fractions.** Participants will examine the standards that relate to multiplication and division of fractions across grades to see the coherence and progression of the Standards. Participants will need access to the entire CCSSM for this activity. *All participants regardless of grade level can benefit from a study of this topic.*
 - **Shift Three Activity: Rigor: In major topics, pursue conceptual understanding, procedural skill and fluency and application with equal intensity: Engaging with the shift: Rigor.** Participants will examine grade 3 and/or 6 to find the standards which specifically set expectations for each component of rigor for that grade. *Note: fluency standards clearly state “fluently” in the standards, conceptual understanding standards often use the terms “understand” and “recognize” and application standards typically state “apply” or “solve.” Share this hint with the participants, if necessary.*
2. **Lead conversation around the Discussion Topic: “Processing the Shifts” (30 min)**
*The discussion is designed to provide participants with an opportunity to reflect upon each of the key shifts, and its implications for instruction. Participants will read the shifts from **The Key Shifts in the Common Core State Standards in Mathematics** handout, and record their thoughts on the **Processing the Shifts** handout.*

3. **Share articles for post-reading**

The three articles included in Related Readings/Research can be used in professional learning communities (PLCs) or as post-reading for this professional development session. These readings are shared to support teachers’ understandings of the intellectual and academic implications of the standards. The articles recommended for this module are:

Publishers’ Criteria for Mathematics: This [document](#) is meant to guide purchasing and reviewing decisions, and establish quality criteria for materials used in the classroom. In addition, the Publishers’ Criteria can be a guide to review current text books, pacing guides and curriculum maps for alignment to CCSSM.

Hung Hsi Wu. “Phoenix Rising: Bringing the Common Core State Mathematics Standards to Life.” Fall 2011. American Educator: 3-13. Print. This [article](#) discusses the challenges and opportunities of implementing the Common Core State Standards for Mathematics.

Zimba, Jason. *New Twist on an Old Standard*. This [essay](#) discusses how unpacking the language of individual math standards can illuminate where the Standards shift from traditional approaches.

4. Share Video Resources for post-viewing

Additional Video Resources: The video resources included below have been created by the Hunt Institute and feature William McCallum and Jason Zimba, two of the lead writers of the Common Core State Standards. These videos can be used before, during, or after the presentation. The four chosen videos discuss both the overview structure of the Standards and detailed explanations about the shifts.

- The Mathematics Standards: Key Changes and Their Evidence
<http://www.youtube.com/watch?v=BNP5MdDDFPY&list=UUF0pa3nE3aZaFbMT8pqM5PA&index=6&feature=plcp>
- The Mathematics Standards and the Shifts They Require
http://www.youtube.com/watch?v=5pBOnvzC_Yw&list=UUF0pa3nE3aZaFbMT8pqM5PA&index=9&feature=plcp
- Mathematical Practices, Focus and Coherence in the Classroom
<http://www.youtube.com/watch?v=9pKcO9E4Flw&list=UUF0pa3nE3aZaFbMT8pqM5PA&index=10&feature=plcp>
- Helping Teachers: Coherence and Focus
<http://www.youtube.com/watch?v=gNug277I95Q&list=UUF0pa3nE3aZaFbMT8pqM5PA&index=10&feature=plcp>

Links to full videos that are featured in the Power Point Presentation

- Slide 2: The Mathematics Standards: How They Were Developed and Who Was Involved. Produced by The Hunt Institute.
<http://www.youtube.com/watch?v=dnjbwJdcPjE>
- Slide 8 & 26: From the Page to the Classroom: Implementing the Common Core State Standards Mathematics. Produced by Council of the Great City Schools.
<http://vimeo.com/44524812>
- Slide 13: David Coleman speaking on focus in the Common Core State Standards. Produced by Engage NY. <http://vimeo.com/27066753>
- Slide 18: Guiding Principles for Math: Focus and Coherence. Produced by The Hunt Institute.

<http://www.youtube.com/watch?v=83leur9qy5k&list=UUF0pa3nE3aZafBMT8pqM5PA&index=7&feature=plcp>

- Slide 29: Phil Daro speaking on conceptual understanding required in the Common Core State Standards. <http://vimeo.com/30924981>
- Slide 43: Common Core Classroom Project. Produced by America Achieves. <http://commoncore.americaachieves.org/>

5. Share Web Resources

- www.achievethecore.org

This site is assembled by Student Achievement Partners to provide free, high-quality resources to educators now doing the hard work of implementing these higher standards.

- <http://illustrativemathematics.org>

“Illustrative Mathematics provides guidance to states, assessment consortia, testing companies, and curriculum developers by illustrating the range and types of mathematical work that students experience in a faithful implementation of the Common Core State Standards, and by publishing other tools that support implementation of the standards.”

- <http://pta.org/parents/content.cfm?ItemNumber=2583&RDtoken=51120&userID>

The PTA’s Parents’ Guide to Student Success (in English and Spanish) was developed in response to the Common Core State Standards. The Guide includes key items that children should be learning and activities that parents can do at home to support their child’s learning.

- <http://commoncoretools.me/>

News about tools that are being developed to support implementation of the Common Core State Standards for Mathematics.

- <http://www.corestandards.org/>

The website that hosts the complete CCSS documents as well as a collection of resources.

- <http://parconline.org/>

The website of the PARCC (Partnership for Assessment of Readiness for College and Career) Consortium.

- <http://www.parconline.org/samples/item-task-prototypes>: Direct link to PARCC’s sample items and task prototypes.

- <http://www.parcconline.org/parcc-model-content-frameworks>: *The Model Content Frameworks are voluntary resources offered by PARCC to help curriculum developers and teachers as they work to implement the standards in their states and districts.*
- <http://www.smarterbalanced.org/>

The website of the Smarter Balanced Assessment Consortium.

- <http://www.smarterbalanced.org/sample-items-and-performance-tasks/>: *Direct link to SBAC's sample items and performance tasks.*
- <http://www.smarterbalanced.org/wordpress/wp-content/uploads/2011/12/Math-Content-Specifications.pdf> : *The Math Content Specifications provide insight into the SBAC assessment targets.*

Background on the Modules and the Common Core State Standards

These modules have been designed for educators to use to support the implementation of the Common Core State Standards. The Common Core State Standards were designed explicitly as a staircase in K-12 to college and career readiness. Many U.S. students—even those who pass their high school courses and their high school exit exams—still face remediation when they get to college because they are not prepared for entry-level coursework. A 2008 study by ACT showed that only 1 in 10 8th graders are on target to be ready for college-level work by the time they graduate from high school, and only 35 percent of U.S. 12th graders scored at or above the “proficient” level on the NAEP reading test in 2005. Furthermore, research shows that remediation is a trap from which many students don’t escape; the overwhelming majority of students who take remedial courses never complete college. The Common Core State Standards form a staircase to prepare students to be successful in college and their chosen career. If students successfully climb the staircase from kindergarten to 12th grade, they will then be truly ready for the demands that follow.

Please submit any feedback on this module to modulefeedback@studentsachieve.net.



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