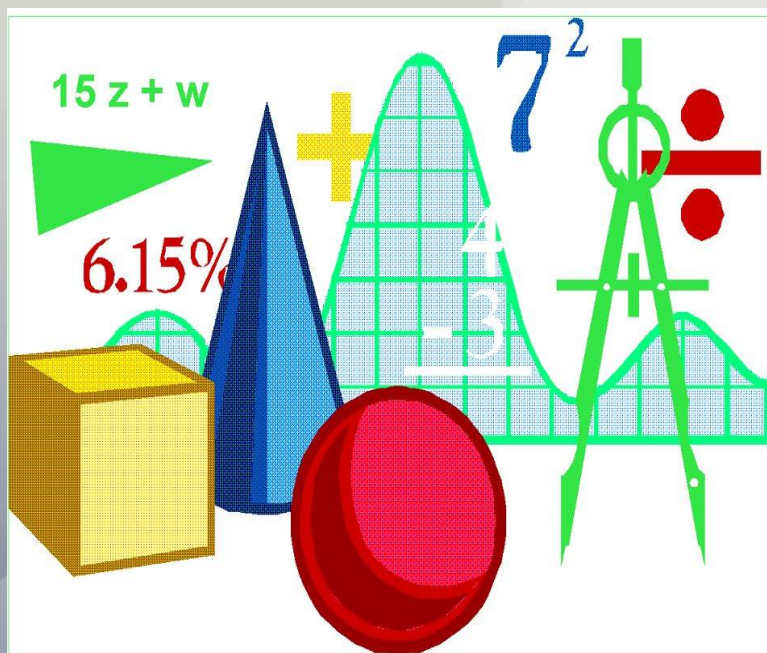


Grades 3-8

Implementing the Mathematics Common
Core State Standards



A Teacher's Guide to the PARCC Model Content Frameworks

Mathematics

Model Content Frameworks

www.parcconline.org

What are the Model Content Frameworks?

The Model Content Frameworks are offered by PARCC to assist state and local curriculum directors, teachers and administrators in the transition to the Common Core State Standards (CCSS) and to help inform curriculum, instruction and assessment. Partnership for the Assessment of Readiness for College and Careers (PARCC), is a consortium of 23 states working together to develop next generation assessments. The final version of the Model Content Frameworks (MCF) was released in August 2012. The purpose of the MCF is to support implementation of CCSS, as well as to inform development of item specifications. The MCF can assist in evaluating resources and provide awareness of the necessary balance of tasks concerning conceptual understanding, procedural skill, fluency, application and problem solving, as defined in the standards. The MCF does not provide a scope and sequence to the courses, but does define key advances and dependencies where one concept leads to another concept within a grade level. The MCF serves as a bridge between the Common Core State Standards and the PARCC assessments. They were created to provide a frame for the developers of the PARCC assessments.

What are the five claims?

The PARCC assessments are based on five claims to measure the knowledge, skills and understandings essential to achieving college and career readiness.

- ❖ Students solve problems involving the major content for their grade level with connections to practices.
- ❖ Students solve problems involving the additional and supporting content for their grade level with connections to practices.
- ❖ Students express mathematical reasoning by constructing mathematical arguments and critiques.
- ❖ Students solve real world problems engaging particularly in the modeling practice.
- ❖ Students demonstrate fluency in areas set forth by the Standards for Content.

Where to Start?

The Model Content Frameworks provide the following for each grade 3-8

- ❖ **Key advances from the previous grade**
 - Highlights grade-to-grade steps in the progression of knowledge and skill
- ❖ **Fluency expectations or examples of culminating standards**
 - Highlights standards that set expectations for fluency and culminating masteries.
 - Fluency is an outcome of a progression of learning and thoughtful practice and does not come at the expense of understanding
 - Whenever the word fluently appears in a content standard, the word means quickly and accurate, to work with flow. Fluent isn't halting, stumbling or reversing oneself.

- ❖ **Major within-grade dependencies**
 - Highlights content that depends conceptually or logically upon other content within the same grade.
- ❖ **Opportunities for connections among standards, clusters or domains**
 - Highlights opportunities to connect content in assessment, curriculum and instruction.
 - Educators should avoid using the standards as a disparate checklist.
- ❖ **Opportunities for in-depth focus**
 - Highlights individual standards that play a key role in the grade level.
- ❖ **Opportunities for connecting mathematical content and mathematical practice**
 - Highlights opportunities to connect content and practice within the context of working a problem. Separating the practices from the content is not what the standards require.
 - The Standards for Mathematical Practice should be embedded in classroom instruction, discussions, and activities.
 - Students need the opportunity to experience designed standards-based mathematical tasks that vary in difficulty, context and type.
 - The practice standards interact and overlap with each other. Like the content standards, the practice standards should not be used as a checklist, but placed where organic connections can be made between the content and practices.
- ❖ **Content emphases by cluster**
 - The chart at the end of each grade level description lists each of the clusters and an emphasis to encourage focus.
 - Green indicates the **major** work in the grade.
 - Blue indicates **supporting** content.
 - Yellow denotes **additional** content.
 - **Major** content identifies where the majority of instructional time and focus should be. At least 70% of the assessment will focus on the major content clusters.
 - **Supporting** standards are designed to strengthen the areas of major emphasis. Connections of supporting to the major clusters are provided.
 - **Additional** are those standards that do not connect tightly or explicitly to the major work.

How do I use the Model Content Frameworks?

- ❖ Use the **major**, **supporting** and **additional** clusters to inform instructional decisions on time and resources.
- ❖ Use the **supporting** clusters and Standards for Mathematical Practice to highlight the focus on the **major** work through sense-making, reasoning, critiquing, modeling, etc.
- ❖ Evaluate instructional materials and professional development ideas based on the **major**, **supporting** and **additional** clusters.
- ❖ **Do not** simply sort clusters from major to supporting and teach them in that order. Coherence is one of the key shifts of the CCSSM.
- ❖ **Do** refer to the progression documents for more information regarding sequence of instruction. <http://ime.math.arizona.edu/progressions/>

- ❖ Use in conjunction with the CCSSM. Despite the fact that only the clusters are listed in the MCF, the individual wording of each content standard is important.
<http://www.corestandards.org/the-standards>
- ❖ Don't use the MCF or the CCSSM to do cross-walk exercises. The analysis of curricular materials is more than just topic-matching. Each standard is very specific and needs to be addressed with precision.

What should I know about focus and coherence?

The standards are based on focus and coherence. Focus allows time for deep rich discussions and interactions, so students have sufficient time to think, practice and integrate new ideas into their growing knowledge structure. Coherence requires connections both in grade and across grade level progressions. Coherence also needs to occur between the content and practice standards. Focus and coherence recognize that the standards are not a checklist, nor should they be fragmented to meet mastery.

- ❖ In K-5, the **focus is on arithmetic** using the four operations of addition, subtraction, multiplication and division. This focus progresses from whole numbers to fractions and decimals, always with a balance of concepts, skills and problem solving. Measurement and geometry are used as an application of the arithmetic the students are learning.
- ❖ The standards **focus on crucial material** so that students can have more time to discuss, reflect upon and practice.
- ❖ A number of individual content standards use the word “**understand**” in connection with important mathematical concepts. The CCSSM states “There is a world of difference between a student who can summon a mnemonic device and a student who can explain where the mnemonic comes from.

PARCC's recommended list of resources:

<http://ime.math.arizona.edu/progressions/>

<http://illustrativemathematics.org>

<http://commoncoretools.wordpress.com>

<http://www.achieve.org/files/TriState-Mathematics-Quality-RubricFINAL-May2012.pdf>

<http://www.achieve.org/achieving-common-core>

Standards for Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.