

CCSS Fraction Module 1: Aligning the Fraction Content Standards to Instruction

Facilitator's Notes

Goal:

To develop a common understanding of the major shifts in instructional focus in the CCSS Number and Operation – Fractions domain.

Distribute to Participants:

- Common Core State Standards for Mathematics
 - Gr. 3 <http://www.corestandards.org/Math/Content/3/NF>
 - Gr. 4 <http://www.corestandards.org/Math/Content/4/NF>
 - Gr. 5 <http://www.corestandards.org/Math/Content/5/NF>
- Similarities and Differences Chart handout

Post for Participants:

- Statement of purpose from the CCSS document
 - <http://www.corestandards.org/Math/Content/introduction/how-to-read-the-grade-level-standards>
- Focused Reading Notation:

+	This is new content for me	✓	We are already teaching this	?	I don't understand
---	----------------------------	---	------------------------------	---	--------------------

Supplementary Materials:

- [Grade Level Notes Page](#)
 - Summarizes the key points of the Introduction, Overview, and Standards at each grade level. This is intended as a resource for the facilitator but can be shared with participants after the completion of Step 8 if the group at large is comprised of a single grade level.
- [Personal Action Plan Template handout](#)
 - An optional template that can be distributed to each participant to facilitate personal reflection and planning with respect to fraction instruction based on the CCSS. It can be used as a supplementary closing activity for each of the six CCSS Fraction Modules. There are two versions of the template.
 - Initial Template – to be used after a participant completes his/her first module
 - Follow-Up Template – to be used after each subsequent module completed by a participant

Directions:

1. Organize groups according to grade level.
2. Post and read the statement of purpose from page 5 of the CCSS document:
“These Standards are not intended to be new names for old ways of doing business. They are a call to take the next step. It is time for states to work together to build on lessons learned from two decades of standards based reforms. It is time to recognize that standards are not just promises to our children, but promises we intend to keep.” Ask participants to turn and talk to a neighbor about their reaction to this statement.
3. Reconvene as a whole group and conduct a discussion centered on the questions: *“So what? What does this mean for mathematics instruction in our classrooms?”*

4. Direct participants to locate the introduction for their grade level in their CCSS document. Ask participants to find and highlight the information they come across about fraction instruction. Introduction pages at each grade level are:
 - Grade 3 - page 21
 - Grade 4 - page 27
 - Grade 5 - page 33
5. Instruct participants to turn to the next page in their document. Explain that this page is an overview of the domains and clusters for their grade level. Note the following for participants:
 - There are no standards on this page.
 - The Standards for Mathematical Practice are on the right hand side of the page.
 - This may be a helpful document to share with parents because it provides a quick overview of what their children will be learning for the year.Once again, ask participants to find and highlight the information they see about fraction instruction.
6. Invite participants to locate and read through the fraction standards for their grade level. Using the **Focused Reading Notation**, direct participants to code the text, being sure to concentrate on the following:
 - content
 - concepts
 - skills
 - visual representations
7. Using their **Focused Reading Notation** notes, participants will then work in grade level groups to complete the [Similarities and Differences Chart](#) for fraction instruction. As you circulate, be sure that groups have reacted to the following:
 - Grade 3: Unit fractions and number line use
 - Grade 4: Simplifying fractions, the fundamental properties of equivalence, and composing/decomposing fractions
 - Grade 5: Least common denominators and scaling
8. Invite each group to share out their findings with the large group.
9. Encourage the large group to engage in conversation about the findings at all grade levels and any questions which arose. Be sure that groups share out their thinking about the topics listed in step 7 as well as what they noticed about the types of visual representations being called for at their grade level.
10. Close by having participants share out one aspect of their fraction instruction that will be changing and one aspect that will be staying the same and/or asking participants to complete a [Personal Action Template](#).

Activities and Tools to Extend Your Study:

1. **Applications to Other Domains:**
 - a. Remind participants that one of the guiding principles in the design of the CCSS is that of coherence, making content connections within and across grade levels. Tell them that this applies to fractions. Fraction instruction is embedded in standards that fall into other domains.
 - b. Ask participants to look through the other domains for their grade level in search of additional standards related to fraction instruction.
 - c. Encourage participants to chart these standards and share them out with the other grade level groups.

- d. Close by encouraging participants to look back through their fraction standards and think about where these additional standards would best fit in their curriculum.
- e. Examples of additional standards that participants will find are as follows:
 - i. 3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show data by making a line plot, where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters.
 - ii. 3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.
 - iii. 4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
 - iv. 4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots.
 - v. 4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:
 - a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles.
 - vi. 5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots.