## Breaking Down a Mathematics Standard

KAS: KY.3.OA.8

**What is the domain/conceptual category/big idea?** Operations and Algebraic Thinking

**Standards for Mathematical Practice**

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

**Cluster: What is the broader understanding that the standard plays a role in building?** Solve problems involving the four operations and explain patterns in arithmetic

### Standards

- Identify the target of the standard:
  - o conceptual understanding
  - o procedural skill/fluency
  - ✓ application

Consider how the target of the standard will have an impact on instruction and assessment. (For more information, refer to p. 7, 10 and 15 of *KAS for Mathematics.*)

Use tables from appendix A Table 1 & 2 on pages 254 and 255 of the KAS for Mathematics.* In table 2 the compare situation problems are not expected until Grade 4!

- What key mathematics should students know and be able to do?

Students will need to be very well versed in the different types of word problems like: unknown product, group size unknown, number of groups unknown, utilizing a letter for the unknown.

### Clarifications

- What are the specific representations/strategies that will need to be considered when planning instruction? It is important for students to reason and think...what do they notice and what do they wonder. Maybe students use a bar model, a set model, an area model or a number line, what is important is that they can make sense of the model they use to assess the reasonableness.
- What are the possible misconceptions that will need to be addressed during instruction? Some students will need additional purposeful questions to help them get started. These questions can help determine what to do to solve, but never to reach a solution.

Coherence: Previous Grade → Current Standard → Upcoming Grade

- How does this standard build off of prior learning? Grade 2 KY.2.OA.1 only uses addition and subtraction, although students need to be familiar with problem types from Table 1 in Appendix A.
- How does this standard support future learning? Grade 4 KY.4.OA.3 has students solving multistep problems so it can be more than 1 or 2 steps.
- How does this standard connect to other standards (or even other clusters or domains)? KY.3.OA.8 makes connections with domains NBT & MD.

### Attending to the Standards for Mathematical Practice

- How are students engaging in the mathematical practices as they learn this content? (For more information, refer to p. 12-15 of *KAS for Mathematics.*)

MP.1 When students are given a non-straightforward story situation, they have to decide on ways to make sense of the problem.

-MP.4 Students will make sense of a situation and therefore will solve the problem using a model. One student might decide to use a bar diagram, where another writes an equation.