

Breaking Down a Mathematics Standard \*Note: Grade 4 expectations in this domain KAS: KY.4.NF.1 are limited to fractions w/ denominators 2, 3, 4, 5, 6, 8, 10, 12, 100

What is the domain/conceptual category/big idea? Numbers & Operations - Fractions

Standards for Mathematical Practice

- MP.1. Make sense of problems and persevere in solving them.
- MP.2. Reason abstractly and quantitatively.
- MP.3. Construct viable arguments and critique the reasoning of others.
- MP.4. Model with mathematics.

- MP.5. Use appropriate tools strategically.
- MP.6. Attend to precision.
- MP.7. Look for and make use of structure.
- MP.8. Look for and express regularity in repeated reasoning.

Cluster: What is the broader understanding that the standard plays a role in building? Extend understanding of fraction equivalencies

Standards	Clarifications
<ul style="list-style-type: none"> <li>• Identify the target of the standard:                             <ul style="list-style-type: none"> <li>✓ conceptual understanding</li> <li>○ procedural skill/fluency</li> <li>○ application</li> </ul> </li> </ul> <p>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.) <u>Students should be able to make sense of why a mathematical idea is important and the kinds of contexts in which it is useful. Students are also able to connect prior knowledge to new ideas &amp; concepts.</u></p> <ul style="list-style-type: none"> <li>• What key mathematics should students know and be able to do?                             <ul style="list-style-type: none"> <li>• equivalent fractions</li> </ul> </li> </ul> <div style="text-align: center;"> <p><math>\frac{1}{2} = \frac{2}{4}</math></p> </div>	<ul style="list-style-type: none"> <li>• What are the specific representations/strategies that will need to be considered when planning instruction?                             <ul style="list-style-type: none"> <li>• <u>Students draw visual fraction models to subdivide the pieces into smaller equal sized pieces.</u></li> </ul> </li> <li>• What are the possible misconceptions that will need to be addressed during instruction? <u>If students are taught a trick like the butterfly method they will not understand the why &amp; how equivalent fractions work.</u></li> </ul> <p>Coherence: Previous Grade → Current Standard → Upcoming Grade</p> <ul style="list-style-type: none"> <li>• How does this standard build off of prior learning? <u>Grade 3 KY.3.NF.3 equivalent fractions</u></li> <li>• How does this standard support future learning? <u>Grade 5 KY.5.NF.1 adding &amp; subtracting fractions w/ unlike denominators.</u></li> <li>• How does this standard connect to other standards (or even other clusters or domains)? <u>Same cluster: KY.4.NF.2 Compare fractions. Connect to KY.4.MD.2 solve problems involving fractions.</u></li> </ul>

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.4 - Students have the opportunity to draw their own visual fraction model to show fraction equivalencies
  - MP.7 Look for and make use of structure, students can explain how  $\frac{3}{4}$  is equivalent to  $\frac{9}{12}$ .
  - MP.8 Look for repeated reasoning, students are able to show the relationship between the numerator and denominator.