NWEA Assessment Item Illustrating 4.NF.A.2

Domain: Number and Operations—Fractions

4.NF.A: Extend understanding of fraction equivalence and ordering.

Calculator Availability: No

Move the fractions so that they are in order from <u>least</u> to <u>greatest</u>.

least [ ] [ ] [ ] [ ] greatest

$\frac{3}{8}$ $\frac{5}{6}$ $\frac{11}{12}$ $\frac{1}{2}$

Alignment: 4.NF.A.2: Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

To order fractions with different numerators and different denominators correctly, students must understand fraction part-to-whole relationships, fraction equivalence, and benchmark fractions. In this item, three-eighths and one-half were specifically chosen because three-eighths is close to one-half. If students understand equivalent fractions, they can reason that three-eighths is less than four-eighths. Five-sixths and eleven-twelfths are both close to a whole. If students understand that one-twelfth is smaller than one-sixth, they will realize that eleven-twelfths is closer to one than five-sixths is.

Coherence: Students began comparing and ordering fractions with either the same numerator or the same denominator in grade 3.[3.NF.A.3d] The fraction number sense that students develop by ordering and comparing fractions will serve them in grade 5, when they will learn to add fractions with unlike denominators.[5.NF.A] It also provides a basis for comparing and ordering decimals in grade 5.[5.NBT.A.1, 5.NBT.A.3]

Rigor: This item attends to conceptual understanding. Reasoning about the sizes of fractions and then ordering or comparing them is a grade-level concept for grade 4.

Answer Key:

Move the fractions so that they are in order from <u>least</u> to <u>greatest</u>.

least [$\frac{3}{8}$] [$\frac{1}{2}$] [$\frac{5}{6}$] [$\frac{11}{12}$] greatest

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