**Vertical Progression: Fraction Sense**

| **Grade 3** | **Grade 4** | **Grade 5** |
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| **3.2 The student will**a) name and write fractions and mixed numbers represented by a model;b) represent fractions and mixed numbers, with models and symbols; andc) compare fractions having like and unlike denominators, using words and symbols (>, <, =, or ≠), with models.***Essential Knowledge and Skills:*** * Name and write fractions (proper and improper) and mixed numbers with denominators of 12 or less in symbols represented by concrete and/or pictorial models. (a)
* Represent a given fraction (proper or improper) and mixed numbers, using concrete or pictorial set, area/region, length/measurement models and symbols. (b)
* Identify a fraction represented by a model as the sum of unit fractions. (b)
* Using a model of a fraction greater than one, count the fractional parts to name and write it as an improper fraction and as a mixed number (e.g., $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$, $\frac{5}{4}$ = 1$\frac{1}{4}$, or 2$\frac{1}{3}$ = $\frac{7}{3}$ ). (b)
* Compare a model of a fraction, less than or equal to one, to the benchmarks of 0, $\frac{1}{2}$, and 1. (c)
* Compare proper fractions using the terms *greater than, less than, equal to, or not equal to* and the symbols (<, >, =, and ≠). Comparisons are made between fractions with both like and unlike denominators, with concrete or pictorial models. (c)
 | **4.2 The student will**a) compare and order fractions and mixed numbers, with and without models;\*b) represent equivalent fractions;\* andc) identify the division statement that represents a fraction, with models and in context.\*On the state assessment, items measuring this objective are assessed without the use of a calculator.***Essential Knowledge and Skills:*** * Compare and order no more than four fractions having like and unlike denominators of 12 or less, using concrete and pictorial models. (a)
* Use benchmarks (e.g., 0, $\frac{1}{2}$ or 1) to compare and order no more than four fractions having unlike denominators of 12 or less. (a)
* Compare and order no more than four fractions with like denominators of 12 or less by comparing number of parts (numerators) (e.g., $\frac{1}{5}$ < $\frac{3}{5}$). (a)
* Compare and order no more than four fractions with like numerators and unlike denominators of 12 or less by comparing the size of the parts (e.g., $\frac{3}{9}$ < $\frac{3}{5}$). (a)
* Compare and order no more than four fractions (proper or improper), and/or mixed numbers, having denominators of 12 or less. (a)
* Use the symbols >, <, =, and ≠ to compare fractions (proper or improper) and/or mixed numbers having denominators of 12 or less. (a)
* Represent equivalent fractions through twelfths, using region/area models, set models, and measurement/length models. (b)
* Identify the division statement that represents a fraction with models and in context (e.g., $\frac{3}{5}$ means the same as 3 divided by 5 or $\frac{3}{5}$ represents the amount of muffin each of five children will receive when sharing 3 muffins equally). (c)
 | **5.2 The student will**a) represent and identify equivalencies among fractions and decimals, with and without models; \* andb) compare and order fractions, mixed numbers, and/or decimals, in a given set, from least to greatest and greatest to least.\*\*On the state assessment, items measuring this objective are assessed without the use of a calculator.***Essential Knowledge and Skills:*** * Represent fractions with denominators that are thirds, eighths, and factors of 100 in their equivalent decimal form with concrete or pictorial models. (a)
* Represent decimals in their equivalent fraction form (thirds, eighths, and factors of 100) with concrete or pictorial models. (a)
* Identify equivalent relationships between decimals and fractions with denominators that are thirds, eighths, and factors of 100 in their equivalent decimal form without models. (a)
* Compare and order from least to greatest and greatest to least a given set of no more than four decimals, fractions (proper or improper), and/or mixed numbers with denominators of 12 or less. (b)
* Use the symbols >, <, =, and ≠ to compare decimals through thousandths, fractions (proper or improper fractions), and/or mixed numbers, having denominators of 12 or less. (b)
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Resource: VDOE, 2016 *Mathematics Curriculum Frameworks*