**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; and  c) 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., , , , , = 1, or 2 = ). (b) * Compare a model of a fraction, less than or equal to one, to the benchmarks of 0, , 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;\* and  c) 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, 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., < ). (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., < ). (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., means the same as 3 divided by 5 or 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; \* and  b) 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) |

Resource: VDOE, 2016 *Mathematics Curriculum Frameworks*