

Unit Auditing Tool

Domain: Number and Operations—Fractions

Cluster: Develop understanding of fractions as numbers.

Standards:

- [NY-3.NF.1](#)
 - 3.NF.A.1 Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.
- [NY-3.NF.2a, 2b](#)
 - 3.NF.A.2 Understand a fraction as a number on the number line; represent fractions on a number line.
 - 3.NF.A.2a Represent a fraction $1/b$ on a number line by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.
 - 3.NF.A.2b Represent a fraction on a number line by marking off lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
- [NY-3.NF.3a, 3b, 3c, 3d](#)
 - 3.NF.A.3a Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
 - 3.NF.A.3b Recognize and generate equivalent fractions. Explain why the fractions are equivalent.
 - 3.NF.A.3c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
 - 3.NF.A.3d Compare two fractions with the same numerator or the same denominator, by reasoning about their size. Recognize that valid comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

Next Generation Changes for this cluster:

- **NY-3.NF (ALL)** Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.
- **NY-3.NF.3** Took out “special cases”, using denominator limitations 2,3,4,6 and 8, students need to explain the equivalence of fractions and compare fractions by reasoning about their size.

State Test Note: *This Domain/Cluster will represent 18% to 29% of the 2023 state test (about a fourth of the test).*

Concept/Big Idea: Number, Equivalence

NUMBERS: The set of real numbers is infinite, and each real number can be associated with a unique point on the number line. (pg. 16)

EQUIVALENCE: Any number, measure, numerical expression, algebraic expression, or equation can be represented in an infinite number of ways that have the same value. (pg. 18)

Concept/Skill (What can students do and demonstrate?)	Example	Activities
Specify and partition a whole into equal parts, identifying and counting unit fractions using concrete models (without fraction symbols). Vocabulary: whole, partition , half, fourth, eighth, third, sixth, equal-sized parts	Cut paper shapes into four different equal parts and identify the parts as fourths.	IM: Module 5-Lesson 1-Center-Card sort Partition EM: Module 5 Lesson 1&2  K-5 3rd-Gd-Math-Centers-Multipl... 3.NF.1: Making Fraction Strips 3.NF.1: Cuisenaire Fractions ENV: Topic 12, Lesson 1 : tangrams Tangrams exploration
Specify and partition a whole into equal parts, identifying and counting unit fractions by drawing pictorial area models (without fraction symbols). Vocabulary: one-half, one-fourth, one-eighth, one-third, one-sixth	Draw shapes like rectangles and divide them into three equal parts and identify the parts as thirds.	IM: Gr. 3, Unit 5, Lesson 2 - Warm Up- Partition the Strips EM: Module 5 Lesson 5 3.NF.1: My Fraction Bar Riddle 3.NF.1: Fraction Posters 3.NF.1: Name that fraction Tangrams exploration Center Equipartitioning
Represent and identify fractional parts of different wholes (without fraction symbols). Vocabulary: same-sized whole	Partition two different sized rectangles into fourths, and note that a fourth of the smaller rectangle is smaller than the fourth of the larger rectangle.	EM: Module 5 Lesson 11 3.NF.3d: Compare fractions of a whole 3.NF.3d: Compare fractions of a whole V2 3.NF.3d: Who ate more IM: Gr. 3, Unit - Bring in a mini Hershey Bar and cut it into fourths, then use a regular size hershey bar and cut it into fourths. Then they will see that a fourth of one thing is not the same as a half of another.
Partition a whole into equal parts and identify the unit fractions numerically. Vocabulary: unit fraction, numerator, denominator	Label each section of a rectangle divided into six equal parts as $\frac{1}{6}$.	Guess My Fraction Shapes Fractions EVN : Topic 12, Lesson 3
Build non-unit fractions less than one	Shade two out of three equal parts of a	Routine: Skip count (and build) by unit

whole from unit fractions. Vocabulary: same-sized whole	rectangle and identify it as $\frac{2}{3}$.	fractions. IM: Gr3 unit 5 L3 Students use visuals of same sized whole to identify non-unit fractions. Card game to match fraction with visual. Center: Equipartitioning
Identify and represent shaded and unshaded parts of one whole as fractions. Vocabulary: portion	Shade three out of eight equal parts of a circle and identify the shaded part and the unshaded parts.	IM: Gr. 3, Unit 5, lesson3
Build and write fractions greater than one whole using unit fractions. Vocabulary: fraction greater than 1	Use the fourths from two fraction circle sets to show that $\frac{4}{4} = 1$ whole, and $\frac{5}{4}$, $\frac{6}{4}$ etc. are greater than 1 whole.	IM: Gr. 3, Unit 5 EVN: Topic 12, Lesson 5
Compare unit fractions by reasoning about their size using models and/or manipulatives. Vocabulary: compare	Order a set of fraction manipulatives from smallest to largest to notice that $\frac{1}{8} < \frac{1}{6} < \frac{1}{4}$ etc.	ENV: Topic 13, Lesson 1 Fraction Sort
Compare fractions with the same numerator using models and/or manipulatives. Vocabulary:	Use a set of fraction manipulatives to model the comparison of fractions with the same numerator, for example $\frac{3}{4} > \frac{3}{6}$.	ENV: Topic 13 ,Lesson 4
Place fractions on a number line with endpoints 0 and 1. Vocabulary: number line	Have students use fraction strips and/or folded paper to build various fraction number lines from 0 to 1 (e.g., fourths, sixths, eighths).	ENV: Topic 13, Lesson 2 Game: Where do I Belong? Students form a number line using fractions from greatest to least ie; fourths, sixths, eighths. Roll the fraction
Place fractions on a number line with other endpoints (e.g., 0 and 2).	Have students use fraction strips and/or folded paper to build various fraction number lines from 0 to 2 and beyond (e.g., fourths, sixths, eighths).	IM Math Gr. 3 Unit 5 Lesson 9: Great for after students have accessed fractions greater than 1. Activity: Which One Doesn't Belong? Many Number Lines. Closer to..using Dominoes
Recognize that fractional parts of the same sized whole with different units can be equivalent (without fraction symbols). Vocabulary: equivalent (same size, different units)	Cut out the same sized whole into halves and fourths in order to demonstrate that one-half is equivalent (same size) to two-fourths.	Gr. 3, Unit 5 Lesson 10: Warm Up: Equivalent to $\frac{1}{2}$. Great for identifying $\frac{1}{2}$ with that same shape that can be represented in different ways.
Recognize and show that equivalent fractions have the same size, though not necessarily the same shape	Have students create different representations of fourths on geoboards or geoboard dot paper.	IM: Gr 3 Unit 5 L10 "If you were given two fractions, how could you determine whether they are equivalent?" Geo Board

		
Recognize and show that equivalent fractions refer to the same point on the number line.	Use fraction strips to create a set of five parallel number lines (halves, thirds, fourths, sixths, and eighths) to show equivalence of different fractions.	Cuisenaire rods
Recognize and represent that whole numbers can be shown as fractional amounts.	See above. Be sure to include the whole numbers $2/2$, $3/3$, $4/4$, $6/6$, and $8/8$ on the number lines.	
Recognize and generate equivalent fractions by reasoning about how units are partitioned.	One-half can be partitioned into fourths. Fourths can be partitioned into eighths.	Feed the Dog Fractions

Resources:

 [3rd-Gd-Math-Centers-Multiple-User-License.pdf](#)