



MOHAWK

Local School District

Preparing today's students for tomorrow

Mohawk Local Schools Grade 4 Math

Quarter 3 Curriculum Guide

Mathematical Practices

1. Make Sense of Problems and Persevere in Solving them
2. Reasoning Abstractly & Quantitatively
3. Construct Viable Arguments and Critique the Reasoning of Others
4. Model with Mathematics
5. Use Appropriate Tools Strategically
6. Attend to Precision
7. Look for and Make use of Structure
8. Look for and Express Regularity in Repeated Reasoning

Critical Areas of Focus Being Addressed:

- Multiplication and Division
- Fractions
- Geometry

Content Statements Addressed and Whether they are Knowledge, Reasoning, Performance Skill, or Product:

(DOK1) (DOK2) (DOK3)
(DOK4)

Underpinning Targets Corresponding with Standards and Whether they are Knowledge, Reasoning, Performance Skill, or Product: "I can.....", "Students Will Be Able To....."

4.NF.3.a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. (DOK2)

-Accumulating unit fractions ($1/b$) results in a fraction (a/b), where a is greater than 1. From the Introduction: Students extend previous understandings about how fractions are built from unit fractions, composing (joining) fractions from unit fractions, and decomposing (separating) fractions into unit fractions.
-Using fraction models, reason that addition of fractions is joining parts that are referring to the same whole.
-Using fraction models, reason that subtraction of fractions is separating parts that are referring to the same whole.

4.NF.3.d Solve word problems involving addition and subtraction of fractions referring

-Add and subtract fractions with like denominators.

<p>to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem. (DOK3)</p>	<p>-Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, by using visual fraction models and equations to represent the problem.</p>
<p>4.NF.3.c Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fractions, and/or by using properties of operations and the relationship between addition and subtraction. (DOK2)</p>	<p>-Add and subtract mixed numbers with like denominators by using properties of operations and the relationship between addition and subtraction. -Replace mixed numbers with equivalent fractions, using visual fraction models. -Replace improper fractions with a mixed number, using visual fraction models. -Add and subtract mixed numbers by replacing each mixed number with an equivalent fraction.</p>
<p>4.NF.3.d Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. (DOK2)</p>	<p>-Add and subtract fractions with like denominators. -Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, by using visual fraction models and equations to represent the problem.</p>
<p>4.NF.4.a Understand a fraction a/b as a multiple of $1/b$. (DOK2)</p>	<p>-Represent a fraction a/b as a multiple of $1/b$ (unit fractions). For example, represent $5/4$ as an accumulation of five $1/4$'s. From the Introduction: Students extend previous understandings about how fractions are built from unit fractions, using the meaning of fractions and the meaning of multiplication to multiply a fraction by a whole number. -Apply multiplication of whole numbers to multiplication of a fraction by a whole number using visual fraction models. (For example, just as students know that four 3's can be represented by 4×3, students know that five $1/4$'s is $5 \times 1/4$ which is $5/4$.)</p>
<p>4.NF.4.b Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. (DOK2)</p>	<p>-From the Introduction: Extend previous understandings about how fractions are built from unit fractions, composing fractions from unit fractions, decomposing fractions into unit fractions, and using the meaning of fractions and the meaning of multiplication to multiply by a whole number. -Explain that a multiple of a/b is a multiple of $1/b$ (unit fraction) using a visual fraction</p>

	<p>model.</p> <ul style="list-style-type: none"> -Multiply a fraction by a whole number by using the idea that a/b is a multiple of $1/b$. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$ recognizing this product as $(6/5)$.
<p>4.NF.4.c Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. (DOK2)</p>	<ul style="list-style-type: none"> -Multiply a fraction by a whole number. -Use fraction models and equations to represent the problem. -Solve word problems involving multiplication of a fraction by a whole number.
<p>4.NF.6 Use decimal notation for fractions with denominators 10 or 100. (DOK2)</p>	<ul style="list-style-type: none"> -Explain the values of digits in the decimal places. -Read and write decimals through hundredths. -Rename fractions with 10 and 100 in the denominator as decimals. -Recognize multiple representations of fractions with denominators 10 or 100. -Represent fractions with denominators 10 or 100 with multiple representations and decimal notation. -Explain how decimals and fractions relate.
<p>4.NF.5 Express a fraction with a denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. (DOK2)</p>	<ul style="list-style-type: none"> -Rename and recognize a fraction with a denominator of 10 as a fraction with a denominator of 100. -Recognize that two fractions with unlike denominators can be equivalent. -Use knowledge of renaming tenths to hundredths to add two fractions with denominators 10 and 100.
<p>4.NF.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of the comparisons with the symbols $>$, $=$, $<$, and justify the conclusions, e.g., by using a visual model. (DOK2)</p>	<ul style="list-style-type: none"> -Recognize that comparisons are valid only when the two decimals refer to the same whole. -Compare two decimals to hundredths by reasoning about their size. -Record the results of comparisons with the symbols $>$, $=$, or $<$. -Justify the conclusions using visual models and other methods.
<p>4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb., oz., l ml; hr., min., sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. (DOK2)</p>	<ul style="list-style-type: none"> -Know relative size of measurement units (km, m; kg, g; lb, oz; L, mL; hrs, min, sec) -Compare the different units within the same system of measurement (e.g. 1 ft = 12 in; 1 lb = 16 oz) -Convert larger units of measurement within the same system to smaller units and record

	conversions in a 2-column table.
4.MD.2 Use operations to solve word problems involving distances, intervals of time, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams. (DOK2)	<ul style="list-style-type: none"> -Add, subtract, multiply, and divide fractions and decimals. - Express measurements given in a larger unit in terms of a smaller unit. -Solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money. -Solve word problems involving measurement that include simple fractions or decimals. -Solve word problems that require expressing measurements given in a larger unit in terms of a smaller unit.-Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. (DOK2)	<ul style="list-style-type: none"> -Know that the formula for the perimeter of a rectangle is $2L + 2W$ or $L+L+W+W$. -Know that the formula for the area of a rectangle is $L \times W$. -Apply the formula for perimeter of a rectangle to solve real world and mathematical problems. -Apply the formula for area of a rectangle to solve real world and mathematical problems. -Solve area and perimeter problems in which there is an unknown factor (n).
4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. (DOK3)	<ul style="list-style-type: none"> -Add and subtract fractions. -Analyze and interpret a line plot to solve problems involving addition and subtraction of fractions. -Create a line plot to display a data set of measurements given in fractions of a unit.