

Number and Operations- Fractions: Grade 5

Stage 1 Desired Results

ESTABLISHED GOALS:

Competencies:

- ***Students will demonstrate the ability to solve arithmetic and algebraic problems by utilizing effective strategies and applying properties of operations to rational numbers.***
- ***Students will demonstrate the ability to model real world problems by building and analyzing the appropriate expression, equation, or function.***

Content Standards:

- 5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
- 5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
- 5.NF.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers,
- 5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- 5.NF.5 Interpret multiplication as scaling (resizing).
- 5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
- 5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
- MP1 Make sense of problems and persevere in solving them.
- MP2 Reason abstractly and quantitatively.
- MP4 Model with mathematics.
- MP7 Look for and make use of structure.

Transfer

*Students will be able to independently use their learning to **express quantities, measurements, and number relations in different ways, with precision.***

Meaning

ENDURING UNDERSTANDINGS

Students will understand that...

- fractions and decimals allow for quantities to be expressed with greater precision than with just whole numbers.
- attending to precise detail increases reliability of mathematical results and minimizes miscommunication of mathematical explanations.

ESSENTIAL QUESTIONS

- ***Can there ever be a part without a whole?***

Acquisition

Students will know...

- that fractions (a/b) can be interpreted as the division of the numerator by the denominator ($a \div b$).
- that multiplying by a fraction results in a scaling of the original.

Students will be skilled at...

- adding and subtracting fractions with unlike denominators (including mixed numbers) using equivalent fractions.
- solving word problems using the addition and subtraction of equivalent fractions using unlike denominators.
- using benchmark fractions and number sense to mentally estimate and assess the reasonableness of answers to problems involving operations with fractions.
- solving word problems involving the division of integers that result in fraction and mixed number answers.
- multiplying fractions.
- solving word problems involving the multiplication of fractions and mixed numbers.
- dividing unit fractions by whole numbers and vice versa.
- explaining the size of a product in comparison to its factors (fraction of a fraction).

vocabulary:

mixed numbers, equivalent fractions, benchmark fractions, mixed number, scaling, factor, unit fraction

<i>Content Area Literacy Standards</i>	<i>21st Century Skills</i>
not applicable	• <i>reason effectively</i> • <i>solve problems</i> • <i>communicate clearly</i>

Stage 2 - Evidence	
<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	PERFORMANCE TASK(S):
	OTHER EVIDENCE: STAR math assessment

Stage 3 – Learning Plan	
<i>Summary of Key Learning Events and Instruction</i>	
<i>Language Arts Integration</i>	<i>Mathematics Integration</i>
• 1.OA.1 Use	• 1.OA.1 Use
<i>Technology Integration</i>	<i>District Materials</i>
• 1.OA.1 Use	