



Fifth Grade Math Unit 2

Stage 1- Desired Results

Unit Focus Standards

Module 4	5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. A. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for $(\frac{1}{3}) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $\frac{1}{3} \div 4 = (1/12)$ because $(1/12) \times 4 = \frac{1}{3}$.
Module 5	5. MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole number products as volumes, e.g., to represent the associative property of multiplication. b. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems. c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

ESSENTIAL QUESTIONS

Module 4: What makes a computational strategy effective and efficient?

Module 5: What mathematical connections are made with volume?

ENDURING UNDERSTANDINGS:

- Volume is connected to the operations of multiplication and addition.
- Multiplication is scaling (resizing) an object or number.
- Strategies used with whole numbers with the operations can also be used with fractions and decimals.
- Multiplying or dividing by a power of ten shifts the value of the digits of a whole number or decimal.

Stage 2: Assessments

[Fact Fluency Assessment](#)

Assessment 1: [Multiplicative Comparison Assessment](#)

Assessment 2: [Multiple Group Assessment](#)

Stage 3- Learning Activities

[Daily Number Work](#)

[5th Grade Number Choice Progression](#)

Module 4: Building the Operations with Whole Numbers, Fractions, & Decimals

Formative Assessments for Module 4:

- [Reasoning with Division/Area Model](#)
- [Division with Fractions](#)
- [Critiquing the Reasoning of Others/Division](#)
- [Using Exponents](#)
- [Multiplying as Scaling](#)

GoFormative Assessments (Enter code after logging in to assign to students.)	EDCITE Assessments
Unit Developed • Multiplicative Comparison 1 https://app.formative.com/assign/PAHMFQ • Multiplicative Comparison 2 https://app.formative.com/assign/JL9ALK • Fraction Multiplication https://app.formative.com/assign/NXQVNT	• Constructed Response 1 (Analysis of Mistakes- Decimals) • Constructed Response 3 (Fraction Relationships/Open Number Sentences) • Open Number Sentences CR (fractions) • SDALE 5th CR Open Number Sentences 2 (Patterns of zeros/Justification) • SDALE Fraction Amounts 2 • SDALE 5th Fractions on a Number Line 1 • Creating an Argument -Multiplication of Fractions/Comparisons/Creating Arguments ○ Creating an Argument (Paper copy)

Learning Goal	Lesson	Supports
	MUoS Lesson: Using the Standard Algorithm Recording	
	MUoS Lesson: Properties of Multiplication using the Patterns of Zero	
LESSON 1: Students will multiply numbers and solve with various strategies based on place value.	Lesson: Patterns of Zero • Student Page Daily Number Work: Open Number Sentence	 Exponent Practice
	MUoS Lesson: Decomposing Fractions with Flexibility	
Lesson 2: Students will use multiplicative comparison and solve using various strategies.	MUoS Lesson: Multiplicative Comparison Daily Number Work: Fact Fluency Work	

LESSON 3: Students will use multiplicative comparison and solve using various strategies.	Lesson: Multiplicative Comparison with a Fractional Amount • Student Page Daily Number Work: Open Number Sentences	 Exit Ticket
LESSON 4: Students will use multiplicative comparison and solve using various strategies.	Lesson: Critiquing the Reasoning with Comparisons • Student Page Daily Number Work: Equation Work	
LESSON 5: Students will divide numbers and solve with various strategies based on place value. Students may be able to begin to see the relationship between multiplication and division.	Lesson: Multiplicative Comparison • Student Page Daily Number Work: 20 lines	 Exit Ticket
LESSON 6: Students will solve a multiplicative comparison (set size unknown) problem with a fractional amount.	Lesson: Multiplicative Comparison • Student Page Daily Number Work: Base Ten Riddles	 Exit Ticket
LESSON 7: Students will divide numbers and solve with various strategies based on place value.	Lesson: Multiplicative Compare with Decimals • Student Page Daily Number Work: Open Number Sentences	
	MUoS Lesson: Dividing Using Tenths	
LESSON 8: Students will divide using fractions and solve using various strategies.	Lesson: Measurement Division with Tenths • Student Page Daily Number Work: Greater than/ less than one half	 Exit Ticket
LESSON 9: Students will create whole units using tenths.	Lesson: Measurement Division with Tenths in Decimals • Student Page Daily Number Work: Decimal Decomposition	 Exit Ticket
	MUoS Lesson: Multiple Group Problem with Notation	
LESSON 10: Students will use what they know about fractions to divide.	Lesson: Multiple Group Division • Student Page Daily Number Work: Decompose Fractions	 Exit Ticket
	MUoS Lesson: Division of Unit Fraction by a Whole	

	Number	
LESSON 11: Students will use fractional amounts to solve 2-step word problems.	Lesson: Student Page Daily Number Work: Count Around $\frac{1}{4}$	
LESSON 12: Students will use division of fractions/decimals to solve a multistep problem.	Lesson: Two-Step Problem with Fractions/Decimals Student Page Daily Number Work: Decimal in Between	
Lesson 13: Students will use multiplication to scale objects.	Lesson: Multiplication as Scaling Student Page Daily Number Work: Comparing Decimals	 Finding Area
Lesson 14: Students will use multiplication with scaling to change the dimensions of objects.	Lesson: Multiplication as Scaling 2 Student Page Daily Number Work: Online Equation Work	 Scaling Area
Lesson 15: Students will use multiplicative comparison strategies to problem solve.	Lesson: Multiplicative Comparison with Fractions Student Page Daily Number Work: Fraction Line 'EM UP!	 Exit Ticket
Lesson 16: Students will use multiplicative strategies to divide.	Lesson: Multiplicative Comparison with Division Student Page Daily Number Work: Decimal Place Value (Online)	 Exit Ticket Multiplication with Powers of Ten
Lesson 17: Students will use strategies to divide fractions.	Lesson: Equal Share Problem Student Page Daily Number Work: Fraction Monkeys (Online)	 Whole Number x Fraction Practice
Lesson 18: Students will use division strategies to solve problems.	Lesson: Multiple Group Division Student Page Daily Number Work: Fractions on a Number Line	 Fill in the Missing Equation
Lesson 19: Students will use standard algorithms based on place value to solve problems.	Lesson: Multiplication with Whole Numbers (3 digit x 2 digit) Student Page	 Multiplication Practice 2

	Daily Number Work: How Close to 100?	
Lesson 20: Students will use Multiplicative Comparison strategies to solve problems.	Lesson: Multiplicative Comparison Practice • Student Page Daily Number Work: Greater Than/Less Than One-Half	
Module 5: Building Concepts of Volume		
Formative Assessments for Module 5: • Area Formative Assessment • Area Reasoning 1 • Area Reasoning/Error Analysis • Reasoning with Fractional Unit Measurements • Relating Volume to Multiplication and Addition (apply the formula $V = l \times w \times h$) • Relating Volume to Multiplication and Addition (adding the volumes of the non-overlapping parts) • Volume of Rectangular Prisms		
Learning Goal	Lesson	Supports
LESSON 1: Students will explore area in order to build volume.	Lesson: Area Review Lesson Daily Number Work: Fractional parts of the same unit can be additively combined.	 Exit Ticket
	Introduction to Volume/ Building the Volume Formula	
Lesson 2: Students will build volume with cubes.	Lesson: Building Volume • Student Page Daily Number Work: Number Puzzles • Number Puzzles	 Volume Practice with Cubes
Lesson 3: Students will relate area to volume, and predict surface area. (2 Days)	Lesson: Area, Volume, and Surface Area	
LESSON 4: Students will explore surface area and volume.	Lesson: Predicting Surface Area and Volume Daily Number Work: Area Comparison	 Volume of Figures
LESSON 5: Students will understand the concept of volume in relation to the formula.	Lesson: Applying the Formula • Student Page Daily Number Work: Math Cards	 Exit Ticket
LESSON 6: Students will be able to find	Lesson: Volume-Breaking Apart Composite Solids • Student Page	

volumes of solid figures composed of two non-overlapping right rectangular prisms.	Daily Number Work: How Close to 100	Determining Volume
LESSON 7: Students will use the Associative property of Multiplication to determine volume. (2 days)	Lesson: Using the Associative Property of Multiplication with Volume • Student Page Daily Number Work: Speed Grid	 Volume of Rectangular Prisms Associative Property Practice
LESSON 8: Students will use what they know about volume to find an unknown edge length.	Lesson: Area Review Lesson • Student Page Daily Number Work: Comparing Decimals Practice	 Volume Practice