



Fourth Grade Math Unit 3

Stage 1- Desired Results

Unit Focus Standards

Module 8: Angles and Shapes	4.MD.C.7
Module 9: Operations and Comparisons with Fractions and Decimals	4.NF.B.3 4.NF.B.4 4.NF.C.7
Module 10: Measurement and Conversions of Volume	4.MD.A.1 4.MD.A.2
Module 11: Applying and Justifying Properties of Operations	4.NBT.B.5 4.NBT.B.6

ESSENTIAL QUESTIONS

- How does my understanding of angles of measure and shapes help me solve problems?
- How does my understanding of relationships between numbers and the operations with whole numbers help me to understand fractions and decimal operations?
- How does my understanding of relationships and the operations help me understand and solve problems with measurement?

ENDURING UNDERSTANDINGS:

- Place value can be used to add, subtract, multiply and divide.
- Strategic decomposition helps to solve problems more purposefully.
- Division merely re-measures the length.
- Fractional value is based on the size of the unit partition.
- Fractions with denominators of 10 and 100 can be notated as a decimal.
- Angles measures are additive.
- Shapes can be defined by types of angles and lines.
- Volume is a measure of capacity.

Stage 2: Assessments

Assessment 1: Fact Fluency Assessment (Assessment Calendar)
Assessment 2: Multiple Group Multiplication Assessment
Assessment 3: Multi-Step Fraction Assessment

Stage 3- Learning Activities

Daily Number Work		4th Grade Number Choice Progression
Module 8: Angles and Shapes		
Learning Goal	Lesson	Supports
LESSON 1: (2 days) Students use circular protractors and rulers to construct regular polygons to investigate the total turn, interior angle, and exterior angle.	Lesson 1: Rich Lehrer Angle Lesson 4 Daily Number Work: What Fraction of a Circle Did I Turn?	
LESSON 2: Students will gain experience identifying, drawing, naming and measuring angles, and developing an understanding of the additive structure of angles.	Lesson 2: How Many Degrees? Student Page Daily Number Work: Illustrative Mathematics: Measuring Angles	 Edcite: Obtuse and Acute Angle Sort
LESSON 3: Students will gain experience identifying, drawing, naming and measuring lines and angles, developing an understanding of the additive structure of angles.	Lesson 3: Lines and Angles Student Page Daily Number Work: Predicting Angle Measures	 Properties of Two Dimensional (2D) Objects Scavenger Hunt
LESSON 4: Students will identify and describe characteristics of geometric figures, compare the properties of geometric figures.	Lesson 4: Shapes Daily Number Work: Quadrilateral Criteria	 Right Triangles on a Geoboard
LESSON 5 : Students will gain experience folding paper shapes on the line of symmetry.	Lesson 5: Lines of Symmetry Introduction Daily Number Work: Quadrilateral Criteria	 Symmetrical Letters
LESSON 6: Students identify lines of symmetry and congruent figures.	Lesson 6: Lines of Symmetry Daily Number Work: More Than One Line of Symmetry	

LESSON 7: Students will identify lines, angles and geometric figures in a work of art and create their own artwork using those concepts.	Lesson 7: Geometric Art Task Daily Number Work: Angles in Quadrilaterals	 Identify Quadrilaterals Interactive
Lesson 8: Students will classify triangles and quadrilaterals.	Lesson 8: Classifying Shapes Daily Number Work: • Identify Quadrilaterals Interactive	 ACT Aspire Prep Items Geometry

Module 9: Operations and Comparisons with Fractions and Decimals

Formative Assessments: These assessments are meant to be formative assessments and are not the required Stage 2 assessments. They are included to as an additional resource to be used at the teacher's discretion.

[ACT Aspire Test Prep Base Ten- Foundations for Decimal Fractions](#)

[ACT Aspire Test Prep Adding an](#)

[ACT Aspire Test Prep Multiple Groups Practiced Subtracting Fractions](#)

[ACT Aspire type-Assessment Fraction](#)

[ACT Aspire Test Prep Visual Model of Decimal Fractions](#)

Probes and Guides from Cheryl Tobey

- [Is 1/4 of the Whole Shaded? Probes and Guide](#)
 - [Is 1/4 of the Whole Shaded? paper copy](#)
- [How Much is Shaded? Variation paper copy](#)

Learning Goal	Lesson	Supports
LESSON 1: Students will make wholes from unit fractions.	MUoS Lesson: Making Wholes from Fractions	
LESSON 2: Students will use what they know about multiplication to solve problems with multiplication of fractions.	Lesson: MUoS Lesson: Using Decomposing to Make Wholes and Parts	 ACT Aspire Test Prep Multiple Groups Practice  Exit Ticket
LESSON 3: Students will make decimals with fractions.	Lesson: MUoS Lesson: Making Decimal Fractions	
LESSON 4: Students will use what they know about partitioning into equal shares to name shares	Lesson: Equal Share to Create Decimal Fractions • Student page	 ACT Aspire Test Prep Base Ten- Foundations

according to the size of the partitions to explore decimal fractions.	Daily Number Work: • Greater Than/Less Than One-Half	for Decimal Fractions  Exit Ticket
LESSON 5: Students will expand understanding of the Base 10 system by solving problems with decimal fractions	Lesson: MUoS Lesson: Who Gets More? Comparing Fractional Amounts • Student page	 Decimals Tenths Practice Interactive  Exit Ticket
LESSON 6: Students will use subtraction to solve problems.	MUoS Lesson: Subtracting Fractions	
LESSON 7: Students will apply strategies used in whole numbers operations (i.e. – decomposing numbers, relationship between addition and subtraction, and properties of operations) to solve addition and subtractions of fractions.	Lesson: MUoS Lesson: Adding and Subtracting Tenths • Student Page Daily Number Work: • Making 22 Seventeenths in Different Ways	 ACT Aspire Test Prep Adding and Subtracting Fractions
LESSON 8: Students will apply strategies used in whole numbers operations (i.e. – decomposing numbers, relationship between addition and subtraction, and properties of operations) to solve addition and subtractions of fractions of a set.	Lesson: Adding and Subtracting Fractions of a Set • Student Page Daily Number Work: • I Have... Who Has...? Fraction Game	 Naming Fractions of a Set  Exit Ticket
LESSON 9: Students will apply strategies used in whole numbers operations (i.e. – decomposing numbers, relationship between addition and subtraction, and properties of operations) to solve addition and subtractions of fractions.	Lesson: More Adding and Subtracting Fractions • Student Page Daily Number Work: • Comparing Sums Of Unit Fractions	 ACT Aspire type Adding and Subtracting Fractions Practice
LESSON 10: Students will apply strategies used in whole numbers operations (i.e. – decomposing numbers, relationship between addition and subtraction, and properties of operations) to solve arithmetic with fractions	Lesson: Adding and Subtracting Fractions with Line Plots • Student Page Daily Number Work: • Number Talk • Fractions Cards Decomposing and Writing	 Fraction Operations with Line Plots  Exit Ticket

on a line plot.	Equations	
LESSON 11: Students will apply strategies used in whole numbers operations (i.e. – decomposing numbers, relationship between addition and subtraction, and properties of operations) to solve arithmetic with fractions on a line plot.	Lesson: Problem Solving with Line Plots • Student Page Daily Number Work: • Creating Line Plots	 Fraction Operations with Line Plots 2  Exit Ticket
Module 10: Measurement and Conversions of Volume		
Learning Goal	Lesson	Supports
LESSON 1: Students will understanding the size of measurement units of capacity as foundational to solve word problems involving measurements.	Lesson 1: Liquid Capacity- Milliliters Daily Number Work: • Number Talk	 Measurement Games
LESSON 2: Students will understanding the size of measurement units of capacity as foundational to solve word problems involving measurements.	Lesson 2: Liquid Capacity- Liters Daily Number Work: • Number Talk	 Measurement Games
LESSON 3: Students will understanding the size of measurement units of capacity as foundational to solve word problems involving measurements.	Lesson 3: Converting Milliliters to Liters Daily Number Work: • Conversion Anchor Chart	 Measurement Games
LESSON 4: Students will understanding the size of measurement units of capacity as foundational to solve word problems involving measurements.	Lesson 4: Investigating Customary Units of Capacity Daily Number Work: • Number Talk	 Measurement Games
LESSON 5: Students will understanding the size of measurement units of capacity as foundational to solve word problems involving measurements.	Lesson 5: Converting Gallons, Quarts, Pints, Cups, & Ounces Daily Number Work: • Number Talk	 Measurement Games

Module 11: Applying and Justifying Properties of Operations

These assessments are meant to be formative assessments and are not the required Stage 2 assessments. They are included to as an additional resource to be used at the teacher's discretion.

- [ACT Aspire Prep Generate and Analyze Patterns Practice](#)
- [ACT Aspire Prep Practice](#)
- [Reasoning with Estimation](#)
- [Released Items Multiplication & Division with Justification](#)

Formative Assessments from Unit 2:

- [Factor Pairs](#)
- [Battista Addition/Subtraction Assessment with Guide](#)
- [Traditional Recording System](#)
- [Justification with Multiplication- Edcite](#)

Probes and Guides from Cheryl Tobey

- [Tobey What's Your Subtraction Strategy? Probes and Guide](#)
 - [Tobey What's Your Multiplication Strategy Probes and Guide](#)

Review from Unit 1 (You may choose to readminister these assessments for students who were unable to master in previous unit.)

- [Mentally Add and Subtract](#)
- [Mentally Adding Tens and Ones](#)

LESSON 1: Students use the structure within mathematics (place value, relationships, and properties of operations) in order to solve problem involving measurement and conversions of measurements.	Lesson: Multi-Step Multi-Digit Problem with Measure (liters) • Student page Daily Number Work: • Math Cards: <i>Fluency Practice</i>	 Multiplication and Division Word Problems  Exit Ticket
LESSON 2: Students use the structure within mathematics (place value, relationships, and properties of operations) in order to solve problem involving measurement and conversions of measurements.	Lesson: Multi-Step Multi-Digit Problems with Measures (quarts & ounces) • Student Sheet Daily Number Work: • Math Cards: <i>Fluency Practice</i>	 Exit Ticket:
LESSON 3: Students use the structure within mathematics (place value, relationships, and properties of operations) in order to solve problem involving measurement and conversions of measurements.	Lesson: Multi-Step Multi-Digit Problems with Measures (centimeters & millimeters) • Student Sheet Daily Number Work: • Number Talk Partial Quotients	 Converting millimeters to centimeters  Exit Ticket:

LESSON 4: Students use the structure within mathematics (place value, relationships, and properties of operations) in order to solve problem involving measurement and conversions of measurements.	Lesson: Multi-Step Multi-Digit Problems with Measures (liters and milliliters) • Student Sheet Daily Number Work: • Number Talks	 Converting liters to milliliters
LESSON 5: Students use the structure within mathematics (place value, relationships, and properties of operations) in order to solve problem involving measurement and conversions of measurements.	Lesson: Multi-Step Multi-Digit Problems with Time • Student page Daily Number Work: • Conversions of Time	 Converting Measures of Time
LESSON 6: Students will recognize that in a multi-digit number, a digit in one place represents ten times what it represents in the place to its right.	Lesson: Multiplication to Build Place Value Generalizations • Student Sheet Daily Number Work: • Numeric Patterns	 Rounding to the Nearest Hundred  Exit Ticket
LESSON 7: Students will use decomposition to divide.	Lesson: MUoS Lesson: Partial Product Division	
LESSON 8: Student will use four operations to solve multi-step problems with multiplicative comparisons.	Lesson: Partial Quotients in Partitive Division and Partial Products in Multiplicative Comparison • Student Sheet Daily Number Work: • Representing the Language of Multiplicative Comparison	 Partial Quotients in Partitive Division
LESSON 9: Student will use four operations to solve multi-step problems with multiplicative comparisons.	Lesson: More Multi-Step Measurement Division and Multiplicative Comparison • Student Page Daily Number Work: • Write a multiplicative comparison story	
LESSON 10: Students will apply properties of operations and reference properties being used in their work.	Lesson: Multi-step Join Change Unknown & Partitive Division • Student Sheet Daily Number Work:	 ACT Aspire Prep Practice

	● Number Talk	
LESSON 11: Students will identify and generate patterns and rules of patterns.	Lesson: Generate and Analyze Patterns Daily Number Work: ● Triangular Numbers	 ACT Aspire Prep Generate and Analyze Patterns Practice