Course Name Grade 5 Math

Approved: August 26, 2024

Unit Title Unit 1 Whole Number Operations and Applications: Volume, Multiplication, and Division

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards

CC.2.4: Measurement, Data and Probability

CC.2.4.5.A.5

Apply concepts of volume to solve problems and relate volume to multiplication and to addition.

CC.2.1: Numbers and Operations

CC.2.1.5.B.2

Extend an understanding of operations with whole numbers to perform operations including decimals.

Transfer

Students will be able to independently use their learning to...

- ❑ work with volume using unit cubes and formulas, and I can multiply and divide multi-digit numbers.

Meaning

UNDERSTANDINGS

Students will understand that...

- ❑ Volume is the amount of space inside a three-dimensional figure. The number of unit cubes that fit inside a figure determines its volume.
- ❑ Students can use what they know about finding the area of rectangles as the first step in calculating the volume of rectangular prisms.
- ❑ Students can use place value, area models, and other strategies to multiply multi-digit numbers and divide by two-digit divisors.

ESSENTIAL QUESTIONS

Students will keep considering...

- ❑ what it means for a question to be statistical.
- ❑ the distribution of a data set and the frequency of data.
- ❑ how to summarize data by giving the number of data values and the range of the data.

	Acquisition	
	Students will know... ❑ I understand concepts of volume. ❑ I understand operations with whole numbers.	*Students will be skilled at...* ❑ I can apply concepts of volume to solve problems and relate volume to multiplication and to addition. ❑ I can convert like measurement units within a given measurement system. ❑ I can solve problems using simple conversions (may include multistep, real-world problems). ❑ I can extend an understanding of operations with whole numbers to perform operations including decimals. ❑ I can perform operations with multi-digit whole numbers and with decimals to hundredths. ❑ I can use whole numbers and decimals to compute accurately (straight computation or word problems)

EAST PENN SCHOOL DISTRICT

Course Name Grade 5 Math

Unit Title Unit 2 Decimals and Fractions: Place Value, Addition, and Subtraction

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards

CC.2.1: Numbers and Operations

CC.2.1.5.B.1
Apply place value to show an understanding of operations and rounding as they pertain to whole numbers and decimals.

CC.2.1.5.B.2
Extend an understanding of operations with whole numbers to perform operations including decimals.

CC.2.1.5.C.1
Use the understanding of equivalency to add and subtract fractions.

Transfer

Students will be able to independently use their learning to...

- ❑ use powers of 10, read, write, compare, and round decimals.

Meaning

UNDERSTANDINGS

Students will understand that...

- ❑ Place value in decimals follows the same base-ten patterns as whole numbers. Knowing about place value will help students understand how many times more or less one decimal place is than another and will help them read, write , and round decimals.
- ❑ Students can use what they know about patterns when multiplying by 10 to understand multiplying and dividing by powers of 10.

ESSENTIAL QUESTIONS

Students will keep considering...

- ❑ how to divide fractions or mixed numbers by fractions.
- ❑ how to explain the meaning of quotients when dividing fractions or mixed numbers.
- ❑ how to solve word problems that involve dividing fractions or mixed numbers.

	❑ Knowing about adding and subtracting whole numbers will help students add and subtract decimals. ❑ Students can use what they know about equivalent fractions with unlike denominators.	
	Acquisition	
	Students will know... ❑ I understand the place-value system. ❑ I demonstrate understanding of place-value of whole numbers and decimals, and compare quantities or magnitudes of numbers. ❑ I understand equivalency.	*Students will be skilled at...* ❑ I can apply place value to show an understanding of operations and rounding as they pertain to whole numbers and decimals. ❑ I can extend an understanding of operations with whole numbers to perform operations including decimals. ❑ I can perform operations with multi-digit whole numbers and with decimals to hundredths. ❑ I can use whole numbers and decimals to compute accurately (straight computation or word problems) ❑ I can use the understanding of equivalency to add and subtract fractions. ❑ I can use equivalent fractions as a strategy to add and subtract fractions.

		❑ I can solve addition and subtraction problems involving fractions (straight computation or word problems).

EAST PENN SCHOOL DISTRICT

Course Name Grade 5 Math

Unit Title Unit 3 More Decimals and Fractions: Multiplication and Division

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards

CC.2.1: Numbers and Operations

CC.2.1.5.B.2
Extend an understanding of operations with whole numbers to perform operations including decimals.

CC.2.1.5.C.2
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Transfer

Students will be able to independently use their learning to...

- ❑ work with decimals, fractions, and mixed numbers, both in multiplication and division, using visual models and equations to solve real-world problems.

Meaning

UNDERSTANDINGS

Students will understand that...

- ❑ Students can use what they know about multiplying whole numbers to help them multiply decimals and fractions.
- ❑ Students can think of fractions as division expressions in which the numerator is divided by the denominator.
- ❑ Reasoning about the size of the factors helps students reason about the size of a product: how does a factor

ESSENTIAL QUESTIONS

Students will keep considering...

- ❑ How do you multiply a decimal by a whole number?
- ❑ What is the best way to explain the strategy used to multiply a decimal by a whole number ?
- ❑ How do you use estimation to check that a product is reasonable?
- ❑ how best to multiply decimals
- ❑ How do you explain the strategy used to multiply decimals?
- ❑ How do you use estimation to check that a product is reasonable?
- ❑ How do you divide a whole

	greater or less than 1 affect a product? ❑ Students can use relationships between multiplication and division to help them divide whole numbers by unit fractions and unit fractions by whole numbers.	number by a decimal (and the inverse as well)? ❑ Are fractions a form of division? ❑ What does multiplying by fractions mean? ❑ How can you use models to multiply whole numbers and fractions? ❑ How can you use the multiplication of fractions to help to find the area of an object? ❑ How is multiplication scaling? ❑ How can you use models to divide fractions?
	Acquisition	
	Students will know... ❑ I understand operations with whole numbers, fractions and decimals.	*Students will be skilled at...* ❑ I can estimate products of whole numbers and decimals to hundredths. ❑ I can multiply decimals to hundredths by whole numbers. ❑ I can explain how I multiply decimals to hundredths by whole numbers. ❑ I can estimate products of decimals and determine if the product is greater or less than one of its factors. ❑ I can multiply decimals to hundredths, including products to thousandths. ❑ I can explain how I multiply decimals. ❑ I can divide decimals to hundredths.

		❑ I can explain how I divide decimals to hundredths. ❑ I can use visual fraction models to show a fraction as division. ❑ I can solve word problems where I divide whole numbers and the answer is a fraction or mixed number. ❑ I can understand that a fraction represents division, where the numerator is divided by the denominator. ❑ I can understand what it means to multiply by a fraction. ❑ I can use visual fraction models to multiply a whole number by a fraction. ❑ I can use visual fraction models to multiply a fraction by a fraction. ❑ I can find the area of rectangles with fractional side lengths by tiling with unit fraction rectangles. ❑ I can find the area of rectangles with fractional side lengths by multiplying the side lengths. ❑ I can show that the number of same-size rectangles that tile a rectangle with fractional side lengths is the same as the product of the side lengths. ❑ I can understand a multiplication expression as a

		quantity and a resizing or scaling factor. ❑ I can recognize that multiplying a whole number or fraction by a number greater than 1 gives a product greater than the original number, and multiplying by a number less than 1 gives a product less than the original number. ❑ I can reason about the size of a product when a number is multiplied by 1, by a factor greater than 1, and by a factor less than 1, without calculating. ❑ I can represent real-world problems involving multiplication of fractions and mixed numbers using visual models and equations. ❑ I can solve real-world problems involving multiplication of fractions and mixed numbers using visual models and equations. ❑ I can identify situations that involve dividing a unit fraction by a whole number. ❑ I can identify situations that involve dividing a whole number by a unit fraction. ❑ I can use a visual fraction model to find the quotient of a unit fraction divided by a whole

		number or the quotient of a whole number divided by a unit fraction. ❑ I can write a multiplication equation for a given division equation involving a unit fraction and a whole number. ❑ I can represent and solve real-world problems involving division of unit fractions by whole numbers using visual fraction models and equations. ❑ I can represent and solve real-world problems involving division of whole numbers by unit fractions using visual fraction models and equations. ❑ I can use the inverse relationship between multiplication and division to write a related multiplication equation for a given division equation involving a unit fraction and a whole number.

EAST PENN SCHOOL DISTRICT

Course Name Grade 5 Math

Unit Title Unit 4 Measurement, Data, and Geometry: Converting Units, Using Data, and Classifying Figures

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards

CC.2.3: Geometry

CC.2.3.5.A.2

Classify two-dimensional figures into categories based on an understanding of their properties.

CC.2.4: Measurement, Data and Probability

CC.2.4.5.A.1

Solve problems using conversions within a given measurement system.

CC.2.4.5.A.2

Represent and interpret data using appropriate scale.

CC.2.4.5.A.4

Solve problems involving

Transfer

Students will be able to independently use their learning to use

- ❑ *measurement conversions, data representation, and classification of shapes to solve real-world problems and explain my solutions clearly.*

Meaning

UNDERSTANDINGS

Students will understand that...

- ❑ Students can use division to convert from smaller to larger units of measurement within the same measurement system.
- ❑ Students can use their understanding of operations on fractions to solve problems about data presented in line plots.
- ❑ Students can classify two-dimensional figures into categories and subcategories based on their properties.

ESSENTIAL QUESTIONS

Students will keep considering...

- ❑ What are the most effective ways to classify and group two-dimensional figures?
- ❑ What are basic and effective ways to group and analyze data?
- ❑ What are standard units of length and capacity?
- ❑ What are metric units of length and capacity?
- ❑ What are the most effective strategies for converting these units to smaller or larger units of representation?

	Acquisition	
computation of fractions using information provided in a line plot.	*Students will know...* ❑ I understand the properties of two-dimensional figures. ❑ I understand how to interpret data and organize it. ❑ I understand how to identify two-dimensional figures. ❑ I understand how to convert both standard and metric units.	*Students will be skilled at...* ❑ I can convert from a larger unit of measurement to a smaller unit within the same measurement system. ❑ I can convert from a smaller unit of measurement to a larger unit within the same measurement system. ❑ I can convert units of measurement within a system to solve problems with multiple steps. ❑ I can solve multi-step problems that involve converting measurements to a specified unit. ❑ I can solve multi-step problems that involve writing two measurements given in different units in the same unit. ❑ I can create a line plot to display measurement data given in fractions with different denominators. ❑ I can use a line plot to solve problems about measurement data given in fractions with different denominators. ❑ I can recognize that two-dimensional figures can be grouped based on their characteristics.

		❑ I can understand that when one category of figures is a subset of another, figures in the subset share all the characteristics of figures in the broader category. ❑ I can explain how Venn diagrams and tree diagrams show relationships between different categories of polygons. ❑ I can classify two-dimensional figures using Venn diagrams or tree diagrams based on their properties. ❑ I can draw and use Venn diagrams and tree diagrams to illustrate relationships between categories of two-dimensional figures. ❑ I can solve problems involving computation of fractions using information provided in a line plot. ❑ I can classify two-dimensional figures into categories based on an understanding of their properties. ❑ I can use basic properties to classify two-dimensional figures.

EAST PENN SCHOOL DISTRICT

Course Name Grade 5 Math

Unit Title Unit 5 Algebraic Thinking and the Coordinate Plane: Expressions, Graphing Points, Patterns and Relationships

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards

CC.2.2: Algebraic Concepts

CC.2.2.5.A.1
Interpret and evaluate numerical expressions using order of operations.

CC.2.2.5.A.4
Analyze patterns and relationships using two rules.

CC.2.3: Geometry

CC.2.3.5.A.1
Graph points in the first quadrant on the coordinate plane and interpret these points when solving real world and mathematical problems.

Transfer

Students will be able to independently use their learning to...

- ❏ work with expressions, understand the coordinate plane, and solve problems using coordinates.

Meaning

UNDERSTANDINGS

Students will understand that...

- ❏ Grouping symbols such as braces, brackets, and parentheses, show the order in which parts of an expression should be evaluated. Knowing how to use grouping symbols and the order of operations will allow students to correctly evaluate, write, and interpret expressions.
- ❏ The coordinate plane is a two-dimensional space formed by two perpendicular number lines. Knowing about the coordinate plane will help

ESSENTIAL QUESTIONS

Students will keep considering...

- ❏ how to evaluate expressions that have grouping symbols
- ❏ how to write a numerical expression to represent a word phrase
- ❏ explain the meaning of numerical expressions

	students graph and interpret points to solve real-world and mathematical problems.	
	Acquisition	
	Students will know... ❑ I understand how to use algebraic thinking and the coordinate plane: expressions, graphing, points, patterns and relationships.	*Students will be skilled at...* ❑ I can interpret and evaluate numerical expressions using order of operations. ❑ I can write and interpret numerical expressions. ❑ I can analyze and complete calculations by applying the order of operations. ❑ I can analyze patterns and relationships using two rules. ❑ I can create, extend, and analyze patterns. ❑ I can graph points in the first quadrant on the coordinate plane and interpret these points when solving real world and mathematical problems. ❑ I can identify parts of a coordinate grid and describe or interpret points given an ordered pair.