Curriculum Map: 5th Grade Math 2019

Course: MATH 5 Sub-topic: General

Grade(s): None specified

Course Description:

Students at this level will exhibit the following:

Make sense of problems and persevere in solving them

- Solve problems by applying their understanding of operations with whole numbers, decimals, and fractions including mixed numbers
- Solve problems related to volume and measurement conversions
- Seek the meaning of a problem and look for efficient ways to represent and solve it
- Check their thinking by asking themselves, "What is the most efficient way to solve the problem?", "Does this make sense?", and "Can I solve the problem in a different way?"

Reason abstractly and quantitatively

- Recognize that a number represents a specific quantity
- Connect quantities to written symbols and create a logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities
- Extend this understanding from whole numbers to their work with fractions and decimals
- Write simple expressions that record calculations with numbers and represent or round numbers using place value concepts

Construct viable arguments and critique the reasoning of others

- Construct arguments using concrete referents, such as objects, pictures and drawings
- Explain calculations based upon models and properties of operations and rules that generate patterns
- Demonstrate and explain the relationship between volume and multiplication
- Refine their mathematical communication skills as they participate in mathematical discussions involving questions like, "How did you get that?" and "Why is this true?"
- Explain their thinking to others and respond to others' thinking

Model with mathematics

- Experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, making a chart, list or graph, creating equations, etc.
- Need opportunities to connect the different representations and explain the connections. Use all of these representations as needed
- Evaluate the results in the context of the situation and whether the results make sense
- Evaluate the utility of models to determine which models are most useful and efficient to solve problems

Use appropriate tools strategically

- Consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful
- Use unit cubes to fill a rectangular prism and then use a ruler to measure the dimensions
- Use graph paper to accurately create graphs
- Solve problems or make predictions from real world data

Attend to precision

- Continue to refine their mathematical communication skills by using clear and precise language in their discussions with others and in their own reasoning
- Use appropriate terminology when referring to expressions, fractions, geometric figures, and coordinate grids
- Specify units of measure and state the meaning of the symbols they choose. For instance, when figuring out the volume of a rectangular prism they record their answers in cubic units

Look for and make use of structure

- Look closely to discover a pattern or structure
- Use properties of operations as strategies to add, subtract, multiply and divide with whole numbers, fractions, and decimals
- Examine numerical patterns and relate them to a rule or a graphical representation

Look for and express regularity in repeated reasoning

- Use repeated reasoning to understand algorithms and make generalizations about patterns
- Connect place value and their prior work with operations to understand algorithms to fluently multiply multi-digit numbers
- Perform all operations with decimals to hundredths
- Explore operations with fractions with visual models and begin to formulate generalizations

Unit: Place Value and Properties of Operations

Month: September, October, and November (25 Days)

Skills:

1. Demonstrate an understanding of rounding as it pertains to whole numbers and decimals
2. Read, write and compare decimals
3. Use whole numbers and decimals to compute accurately

Essential Questions:

1. How is mathematics used to quantify, compare, represent, and model numbers?
2. How can mathematics support effective communication?
3. How are relationships represented mathematically?
4. What does it mean to estimate or analyze numerical quantities?
5. When is it appropriate to estimate versus calculate?
6. What makes a tool and/or strategy appropriate for a given task?
7. How can patterns be used to describe relationships in mathematical situations?

Content:

1. Mathematical relationships among numbers can be represented, compared, and communicated.
2. Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.
3. Numerical quantities, calculations and measurements can be estimated or analyzed by using appropriate strategies and tools.
4. Patterns exhibit relationships that can be extended, described and generalized.

Vocabulary:

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.1.5.B.1 (Advanced)	Apply place-value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.
CC.2.1.5.B.2 (Advanced)	Extend an understanding of operations with whole numbers to perform operations including decimals.

STATE: PA Core Anchors and Eligible Content (2014)

M05.A-T.1.1.1 (Advanced)	Demonstrate an understanding that in a multi-digit number, a digit in one place represents 1/10 of what it represents in the place to its left. Example: Recognize that in the number 770, the 7 in the tens place is 1/10 the 7 in the hundreds place. Alternate Eligible Content Code M05AT1.1.1a: Identify place value in a 3-digit number using models
M05.A-T.1.1.2 (Advanced)	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. Example 1: 4 x 102 = 400 Example 2: 0.05 + 103 = 0.00005 Alternate Eligible Content Code M05AT1.1.2a: Identify a pattern and change in place value when a number up to 99 is multiplied by powers of 10
M05.A-T.1.1.3 (Advanced)	Read and write decimals to thousandths using base-ten numerals, word form, and expanded form. Example: 347.392 = 300 + 40 + 7 + 0.3 + 0.09 + 0.002 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (0.1) + 9 × (0.01) + 2 × (0.001)
M05.A-T.1.1.4 (Advanced)	Compare two decimals to thousandths based on meanings of the digits in each place using >, =, and < symbols. Alternate Eligible Content Code M05AT1.1.4a: Compare two numbers up to the hundredths place
M05.A-T.1.1.5 (Advanced)	Round decimals to any place (limit rounding to ones, tenths, hundredths, or thousandths place). Alternate Eligible Content Code M05AT1.1.5a: Round a decimal from the tenths place to the nearest whole number
M05.A-T.2.1.1 (Advanced)	Multiply multi-digit whole numbers (not to exceed three-digit by three-digit). Alternate Eligible Content Code M05AT2.1.1a: Multiply single-digit whole numbers
M05.A-T.2.1.2 (Advanced)	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors. Alternate Eligible Content Code M05AT2.1.2a: Illustrate the concept of division using fair and equal shares
M05.A-T.2.1.3 (Advanced)	Add, subtract, multiply, and divide decimals to hundredths (no divisors with decimals). Alternate Eligible Content Code M05AT2.1.3a: Add or

subtract decimals to the tenths place

(* standards consolidated from Topic level)

Topic: Lesson 1- Place Value and Patterns (C)

Core Lesson Description:	Place Value and Patterns
Core Lesson Student Learning Objectives:	Students will be able to recognize the 10 to 1 relationship among place-value positions.
Core Lesson Essential Questions:	How can you describe the relationship between two place-value positions? (C)
Core Lesson Materials:	Go Math Chapter 1 Lesson 1
Core Lesson Key Terminology & Definitions:	Multiply Place Value

STANDARDS

STATE: PA Core Standards (2014)

CC.2.1.5.B.1 (Advanced)	Apply place-value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.
CC.2.1.5.B.2 (Advanced)	Extend an understanding of operations with whole numbers to perform operations including decimals.

STATE: PA Core Anchors and Eligible Content (2014)

M05.A-T.1.1.1 (Advanced)	Demonstrate an understanding that in a multi-digit number, a digit in one place represents 1/10 of what it represents in the place to its left. Example: Recognize that in the number 770, the 7 in the tens place is 1/10 the 7 in the hundreds place. Alternate Eligible Content Code M05AT1.1.1a: Identify place value in a 3-digit number using models
M05.A-T.1.1.2 (Advanced)	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. Example 1: 4 x 102 = 400 Example 2: 0.05 + 103 = 0.00005 Alternate Eligible Content Code M05AT1.1.2a: Identify a pattern and change in place value when a number up to 99 is multiplied by powers of 10
M05.A-T.1.1.3 (Advanced)	Read and write decimals to thousandths using base-ten numerals, word form, and expanded form. Example: 347.392 = 300 + 40 + 7 + 0.3 + 0.09 + 0.002 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (0.1) + 9 × (0.01) + 2 × (0.001)
M05.A-T.1.1.4 (Advanced)	Compare two decimals to thousandths based on meanings of the digits in each place using >, =, and < symbols. Alternate Eligible Content Code M05AT1.1.4a: Compare two numbers up to the hundredths place
M05.A-T.1.1.5 (Advanced)	Round decimals to any place (limit rounding to ones, tenths, hundredths, or thousandths place). Alternate Eligible Content Code M05AT1.1.5a: Round a decimal from the tenths place to the nearest whole number
M05.A-T.2.1.1 (Advanced)	Multiply multi-digit whole numbers (not to exceed three-digit by three-digit). Alternate Eligible Content Code M05AT2.1.1a: Multiply single-digit whole numbers
M05.A-T.2.1.2 (Advanced)	Find whole-number quotients of whole numbers with up to four-digit dividends and

	two-digit divisors. Alternate Eligible Content Code M05AT2.1.2a: Illustrate the concept of division using fair and equal shares
M05.A-T.2.1.3 (Advanced)	Add, subtract, multiply, and divide decimals to hundredths (no divisors with decimals). Alternate Eligible Content Code M05AT2.1.3a: Add or subtract decimals to the tenths place

Topic: Lesson 2- Place Value of Whole Numbers (E)

Core Lesson Description:	Place Value of Whole Numbers
Core Lesson Student Learning Objectives:	Students will be able to read and write whole numbers through hundred millions.
Core Lesson Essential Questions:	How do you read, write, and represent whole numbers through hundred millions? (E)
Core Lesson Materials:	Go Math Chapter 1 Lesson 2
Core Lesson Key Terminology & Definitions:	Period

Topic: Lesson 3- Algebra Properties (E)

Core Lesson Description:	Algebra Properties
Core Lesson Student Learning Objectives:	Students will be able to use properties of operations to solve problems.
Core Lesson Essential Questions:	How can you use properties of operations to solve problems? (E)
Core Lesson Materials:	Go Math Chapter 1 Lesson 3
Core Lesson Key Terminology & Definitions:	Distributive Property Factor Product

Topic: Lesson 4- Powers of 10 and Exponents (E)

Core Lesson Description:	Powers of 10 and Exponents
Core Lesson Student Learning Objectives:	Students will be able to write and evaluate repeated factors in exponent form.
Core Lesson	

Essential Questions:	How can you use an exponent to show powers of 10? (E)
Core Lesson Materials:	Go Math Chapter 1 Lesson 4
Core Lesson Key Terminology & Definitions:	Base Exponent

Topic: Lesson 5- Algebra Multiplication Patterns (C)

Core Lesson Description:	Algebra Multiplication Patterns
Core Lesson Student Learning Objectives:	Students will be able to use a basic fact and a pattern to multiply mentally by multiples of 10, 100, and 1,000.
Core Lesson Essential Questions:	How can you use a basic fact and a pattern to multiply by a 2-digit number? (C)
Core Lesson Materials:	Go Math Chapter 1 Lesson 5

Topic: Lesson 6- Mid-Chapter Checkpoing

Core Lesson Description:	Mid-Chapter Checkpoint
Core Lesson Materials:	Go Math Chapter 1 Mid-Chapter Checkpoint

Topic: Lesson 7- Multiply by 1-Digit Numbers (E)

Core Lesson Description:	Multiply by 1-Digit Numbers
Core Lesson Student Learning Objectives:	Students will be able to multiply by one digit numbers.
Core Lesson Essential Questions:	How do you multiply by 1-digit numbers? (E)
Core Lesson Materials:	Go Math Chapter 1 Lesson 6

Topic: Lesson 8- Multiply by 2-Digit Numbers (E)

Core Lesson Description:	Multiply by 2-Digit Numbers
Core Lesson Student Learning Objectives:	Students will be able to multiply by multi-digit numbers.
Core Lesson Essential Questions:	How do you multiply by a multi-digit numbers? (E)

Core Lesson Materials: Go Math Chapter 1 Lesson 7

Topic: Lesson 27- Thousandths (C)

Core Lesson Description: Thousandths

Core Lesson Student Learning Objectives: Students will be able to model, read, and write decimals to thousandths.

Core Lesson Essential Questions: How can you describe the relationship between two decimal place-value positions? (C)

Core Lesson Materials: Go Math Chapter 3 Lesson 1

Core Lesson Key Terminology & Definitions: Thousandths

Hundredth

Tenth

Place Value

Topic: Lesson 28- Place Value of Decimals (E)

Core Lesson Description: Place Value of Decimals

Core Lesson Student Learning Objectives: Students will be able to read and write decimals through thousandths.

Core Lesson Essential Questions: How do you read, write, and represent decimals through thousandths? (E)

Core Lesson Materials: Go Math Chapter 3 Lesson 2

Topic: Lesson 29- Compare and Order Decimals (E)

Core Lesson Description: Compare and Order Decimals

Core Lesson Student Learning Objectives: Students will be able to compare and order decimals to thousandths using place value.

Core Lesson Essential Questions: How can you use place value to compare and order decimals? (E)

Core Lesson Materials: Go Math Chapter 3 Lesson 3

Topic: Lesson 30- Round Decimal (E)

Core Lesson Description: Round Decimals

Core Lesson Student Learning Objectives: Students will be able to round decimals to any place.

Core Lesson Essential Questions: How can you use place value to round decimals to a given place? (E)

Core Lesson Materials: Go Math Chapter 3 Lesson 4

Core Lesson Key Terminology & Definitions: Round

Topic: Lesson 40- Multiplication Patterns with Decimals (E)

Core Lesson Description: Multiplication Patterns with Decimals

Core Lesson Student Learning Objectives: Students will be able to find patterns in products when multiplying by powers of 10.

Core Lesson Essential Questions: How can patterns help you place the decimal point in a product? (E)

Core Lesson Materials: Go Math Chapter 4 Lesson 1

Core Lesson Key Terminology & Definitions: Decimal

Hundredths

Multiplication

Ones

Patterns

Place Value

Product

Tenths

Thousandths

Topic: Lesson 41- Multiplication with Decimals and Whole Numbers (E)

Core Lesson Description: Multiplication with Decimals and Whole Numbers

Core Lesson Student Learning Objectives: Students will be able to multiply a decimal and a whole number using properties and place value.

Core Lesson Essential Questions: How can you use properties and place value to multiply a decimal and a whole number? (E)

Core Lesson Materials: Go Math Chapter 4 Lesson 3

Topic: Lesson 42- Problem Solving and Multiplying Money (E)

Core Lesson Description: Problem Solving and Multiplying Money

Core Lesson Student Learning Objectives: Students will be able to solve problems using the strategy draw a diagram to multiply money.

Core Lesson Essential Questions: How can the strategy draw a diagram help you solve a decimal multiplication problem? (E)

Core Lesson Materials: Go Math Chapter 4 Lesson 5

Topic: Lesson 43- Mid-Chapter Checkpoint

Core Lesson Description: Chapter 4 Mid-Chapter Checkpoint

Core Lesson Materials: Go Math Chapter 4 Mid-Chapter Checkpoint

Topic: Lesson 44- Multiply Decimals (E)

Core Lesson Description: Multiply Decimals

Core Lesson Student Learning Objectives: Students will be able to place the decimal point in decimal multiplication.

Core Lesson Essential Questions: What strategies can you use to place a decimal point in a product? (E)

Core Lesson Materials: Go Math Chapter 4 Lesson 7

Topic: Lesson 45- Zeros in the Product (E)

Core Lesson Description: Zeros in the Product

Core Lesson Student Learning Objectives: Students will be able to multiply decimals with zeros in the product.

Core Lesson Essential Questions: How do you know you have the correct number of decimal places in your product? (E)

Core Lesson Materials: Go Math Chapter 4 Lesson 8

Topic: Lesson 46 and 47- Chapter Review

Core Lesson Description: Chapter 4 Review Test

Core Lesson Materials: Go Math Chapter 4 Review Test

Topic: Lesson 48- Test

Core Lesson Description: Chapter 4 Test

Core Lesson Materials: Go Math Chapter 4 Test

Topic: Lesson 49- Division Patterns with Decimals (E)

Core Lesson Description: Division Patterns with Decimals

Core Lesson Student Learning Objectives: Students will be able to find patters in quotients when dividing by powers of 10.

Core Lesson Essential Questions: How can patterns help you place the decimal point in a quotient? (E)

Core Lesson Materials: Go Math Chapter 5 Lesson 1

Core Lesson Key Terminology & Definitions:
Decimal
Decimal Point
Dividend
Divisor
Exponent
Quotient

Topic: Lesson 50- Estimate Quotients

Core Lesson Description: Estimate Quotients

Core Lesson Student Learning Objectives: Students will be able to estimate decimal quotients.

Core Lesson Essential Questions: How can you estimate decimal quotients?

Core Lesson Materials: Go Math Chapter 5 Lesson 3

Core Lesson Key Terminology & Definitions:
Compatible Numbers
Estimate

Topic: Lesson 51- Division of Decimals by Whole Numbers (E)

Core Lesson Description:	Division of Decimals by Whole Numbers
Core Lesson Student Learning Objectives:	Students will be able to divide decimals by whole numbers.
Core Lesson Essential Questions:	How can you divide decimals by whole numbers? (E)
Core Lesson Materials:	Go Math Chapter 5 Lesson 4

Topic: Lesson 52- Mid-Chapter Checkpoint

Core Lesson Description:	Chapter 5 Mid-Chapter Checkpoint
Core Lesson Materials:	Go Math Chapter 5 Mid-Chapter Checkpoint

Unit: Numerical Expressions

Month: September (1 Day)

Skills:

1. Write and interpret numerical expressions

Essential Questions:

1. How is mathematics used to quantify, compare, represent, and model numbers?
2. How can mathematics support effective communication?
3. How can expressions, equations, and inequalities be used to quantify, solve, model, and/or analyze mathematical situations?

Content:

1. Mathematical relationships among numbers can be represented, compared, and communicated.
2. Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.

Vocabulary:

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

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

STATE: PA Core Anchors and Eligible Content (2014)

M05.B-O.1.1.1 (Advanced)	Use multiple grouping symbols (parentheses, brackets, or braces) in numerical expressions and evaluate expressions containing these symbols.
M05.B-O.1.1.2 (Advanced)	Write simple expressions that model calculations with numbers and interpret numerical expressions without evaluating them. Example 1: Express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Example 2: Recognize that 3 × (18,932 + 921) is three times as large as 18,932 + 921 without having to calculate the indicated sum or product.

(* standards consolidated from Topic level)

Topic: Lesson 9- Numerical Expressions (E)

Core Lesson Description:	Numerical Expressions
Core Lesson Student Learning Objectives:	Students will be able to write numerical expressions.
Core Lesson Essential Questions:	How can you use a numerical expression to describe a situation? (E)
Core Lesson Materials:	Go Math Chapter 1 Lesson 10
Core Lesson Key Terminology & Definitions:	Numerical Expression

STANDARDS

STATE: PA Core Standards (2014)

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

STATE: PA Core Anchors and Eligible Content (2014)

M05.B-O.1.1.1 (Advanced)	Use multiple grouping symbols (parentheses, brackets, or braces) in numerical expressions and evaluate expressions containing these symbols.
M05.B-O.1.1.2 (Advanced)	Write simple expressions that model calculations with numbers and interpret numerical expressions without evaluating them. Example 1: Express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Example 2: Recognize that 3 × (18,932 + 921) is three times as large as 18,932 + 921 without having to calculate the indicated sum or product.

Unit: Order of Operations

Month: September (5 Days)

Skills:
1. Evaluate expressions using the order of operations

Essential Questions:
1. How is mathematics used to quantify, compare, represent, and model numbers?
2. How can mathematics support effective communication?
3. How can expression, equations, and inequalities be used to quantify, solve, model, and/or analyze mathematical situations?

Content:
1. Mathematical relationships among numbers can be represented, compared, and communicated.
2. Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.

Vocabulary:

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

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

STATE: PA Core Anchors and Eligible Content (2014)

M05.B-O.1.1.1 (Advanced)	Use multiple grouping symbols (parentheses, brackets, or braces) in numerical expressions and evaluate expressions containing these symbols.
M05.B-O.1.1.2 (Advanced)	Write simple expressions that model calculations with numbers and interpret numerical expressions without evaluating them. Example 1: Express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Example 2: Recognize that 3 × (18,932 + 921) is three times as large as 18,932 + 921 without having to calculate the indicated

sum or product.

(* standards consolidated from Topic level)

Topic: Lesson 10- Evaluate Numerical Expressions (E)

Core Lesson Description:	Evaluate Numerical Expressions
Core Lesson Student Learning Objectives:	Students will be able to use the order of operations to evaluate numerical expressions.
Core Lesson Essential Questions:	In what order must operations be evaluated to find the solution to a problem? (E)
Core Lesson Materials:	Go Math Chapter 1 Lesson 11
Core Lesson Key Terminology & Definitions:	Evaluate Order of Operations

STANDARDS

STATE: PA Core Standards (2014)

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

STATE: PA Core Anchors and Eligible Content (2014)

M05.B-O.1.1.1 (Advanced)	Use multiple grouping symbols (parentheses, brackets, or braces) in numerical expressions and evaluate expressions containing these symbols.
M05.B-O.1.1.2 (Advanced)	Write simple expressions that model calculations with numbers and interpret numerical expressions without evaluating them. Example 1: Express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Example 2: Recognize that 3 × (18,932 + 921) is three times as large as 18,932 + 921 without having to calculate the indicated sum or product.

Topic: Lesson 11- Grouping Symbols (I)

Core Lesson Description:	Grouping Symbols
Core Lesson Student Learning Objectives:	Students will be able to evaluate numerical expressions with parentheses, brackets, and braces.
Core Lesson Essential Questions:	In what order must operations be evaluated to find a solution when there are parentheses within parentheses? (I)
Core Lesson Materials:	Go Math Chapter 1 Lesson 12

Topic: Lesson 12 and 13- Chapter Review

Core Lesson Description:	Chapter 1 Review Test

Topic: Lesson 14- Test

Core Lesson Description: Chapter 1 Test

Unit: Decimals

Month: September, October, and November (37 Days)

Skills:
1. Read, write and compare decimals
2. Use whole numbers and decimals to compute accurately

Essential Questions:
1. How is mathematics used to quantify, compare, represent, and model numbers?
2. How can mathematics support effective communication?
3. How are relationships represented mathematically?
4. What does it mean to estimate or analyze numerical quantities?
5. When is it appropriate to estimate versus calculate?

Content:
1. Mathematical relationships among numbers can be represented, compared, and communicated.
2. Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.
3. Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.

Vocabulary:

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

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

STATE: PA Core Anchors and Eligible Content (2014)

M05.A-T.2.1.1	Multiply multi-digit whole numbers (not to exceed three-

(Advanced)	digit by three-digit). Alternate Eligible Content Code M05AT2.1.1a: Multiply single-digit whole numbers
M05.A-T.2.1.2 (Advanced)	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors. Alternate Eligible Content Code M05AT2.1.2a: Illustrate the concept of division using fair and equal shares
M05.A-T.2.1.3 (Advanced)	Add, subtract, multiply, and divide decimals to hundredths (no divisors with decimals). Alternate Eligible Content Code M05AT2.1.3a: Add or subtract decimals to the tenths place

(* standards consolidated from Topic level)

Topic: Lesson 15- Place the First Digit (E)

Core Lesson Description:	Place the first digit
Core Lesson Student Learning Objectives:	Students will be able to place the first digit in the quotient by estimating or using place value.
Core Lesson Essential Questions:	How can you tell where to place the first digit of a quotient without dividing? (E)
Core Lesson Materials:	Go Math Chapter 2 Lesson 1
Core Lesson Key Terminology & Definitions:	Dividend Divisor Quotient Remainder

STANDARDS

STATE: PA Core Standards (2014)

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

STATE: PA Core Anchors and Eligible Content (2014)

M05.A-T.2.1.1 (Advanced)	Multiply multi-digit whole numbers (not to exceed three-digit by three-digit). Alternate Eligible Content Code M05AT2.1.1a: Multiply single-digit whole numbers
M05.A-T.2.1.2 (Advanced)	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors. Alternate Eligible Content Code M05AT2.1.2a: Illustrate the concept of division using fair and equal shares
M05.A-T.2.1.3 (Advanced)	Add, subtract, multiply, and divide decimals to hundredths (no divisors with decimals). Alternate Eligible Content Code M05AT2.1.3a: Add or subtract decimals to the tenths place

Topic: Lesson 16- Divide by 1-Digit Divisors (E)

Core Lesson Description:	Divide by 1-digit divisors
Core Lesson Student Learning Objectives:	Students will be able to divide 3- and 4- digit dividends by 1-digit divisors.
Core Lesson Essential Questions:	How do you solve and check division problems? (E)
Core Lesson Materials:	Go Math Chapter 2 Lesson 2
Core Lesson Key Terminology & Definitions:	Inverse Operations

Topic: Lesson 17- Estimate with a 2-Digit Divisor (E)

Core Lesson Description:	Estimate with 2-digit divisor
Core Lesson Student Learning Objectives:	Students will be able to estimate using compatible numbers.
Core Lesson Essential Questions:	How can you use compatible number to estimate quotients? (E)
Core Lesson Materials:	Go Math Chapter 2 Lesson 5
Core Lesson Key Terminology & Definitions:	Compatible Numbers Estimate

Topic: Lesson 18 and 19- Divide by 2-Digit Divisors (E)

Core Lesson Description:	Divide by 2-digit divisors
Core Lesson Student Learning Objectives:	Students will be able to divide by 2-digit divisors.
Core Lesson Essential Questions:	How can you divide by 2-digit divisors? (E)
Core Lesson Materials:	Go Math Chapter 2 Lesson 6

Topic: Lesson 20- Mid-Chapter Checkpoint

Core Lesson Description:	Chapter 2 Mid-Chapter Checkpoint

Core Lesson Materials: Go Math Chapter 2 Mid-Chapter Checkpoint

Topic: Lesson 21 and 22- Interpret the Remainder (E)

Core Lesson Description: Interpret the Remainder

Core Lesson Student Learning Objectives: Students will be able to solve a division problem and decide when to write a remainder as a fraction.

Core Lesson Essential Questions: When solving a division problem, when do you write the remainder as a fraction? (E)

Core Lesson Materials: Go Math Chapter 2 Lesson 7

Topic: Lesson 23- Problem Solving Division (E)

Core Lesson Description: Problem Solving Division

Core Lesson Student Learning Objectives: Students will be able to solve problems by using the strategy draw a diagram.

Core Lesson Essential Questions: How can the strategy draw a diagram help you solve a division problem? (E)

Core Lesson Materials: Go Math Chapter 2 Lesson 9

Topic: Lesson 24 and 25- Chapter Review

Core Lesson Description: Chapter 2 Review

Core Lesson Materials: Go Math Chapter 2 Review Test

Topic: Lesson 26- Test

Core Lesson Description: Chapter 2 Test

Core Lesson Materials: Go Math Chapter 2 Test

Topic: Lesson 31- Estimate Decimal Sums and Differences (E)

Core Lesson Description: Estimate Decimal Sums and Differences

Core Lesson Student Learning Objectives: Students will be able to make reasonable estimates of decimals sums and differences.

Core Lesson Essential Questions: How can you estimate decimal sums and differences? (E)

Core Lesson Materials: Go Math Chapter 3 Lesson 7

Core Lesson Key Terminology & Definitions: Benchmark

Topic: Lesson 32- Add Decimals (E)

Core Lesson Description: Add Decimals

Core Lesson Student Learning Objectives: Students will be able to add decimals using place value.

Core Lesson Essential Questions: How can place value help you add decimals? (E)

Core Lesson Materials: Go Math Chapter 3 Lesson 8

Topic: Lesson 33- Subtract Decimals (E)

Core Lesson Description: Subtract Decimals

Core Lesson Student Learning Objectives: Students will be able to subtract decimals using place value.

Core Lesson Essential Questions: How can place value help you subtract decimals? (E)

Core Lesson Materials: Go Math Chapter 3 Lesson 9

Topic: Lesson 34- Mid-Chapter Checkpoint

Core Lesson Description: Chapter 3 Mid-Chapter Checkpoint

Core Lesson Materials: Go Math Chapter 3 Mid-Chapter Checkpoint

Topic: Lesson 37 and 38- Chapter Review

Core Lesson Description: Chapter 3 Review Test

Core Lesson Materials: Go Math Chapter 3 Review Test

Topic: Lesson 39- Test

Core Lesson Description: Chapter 3 Test

Core Lesson Materials: Go Math Chapter 3 Test

Topic: Lesson 40- Multiplication Patterns with Decimals (E)

Core Lesson Description: Multiplication Patterns with Decimals

Core Lesson Student Learning Objectives: Students will be able to use a pattern to place the decimal point in a problem.

Core Lesson Essential Questions: How can patterns help you place the decimal point in a problem? (E)

Core Lesson Materials: GO Math Chapter 4 Lesson 1

Topic: Lesson 41- Multiplication with Decimals and Whole Numbers (E)

Core Lesson Description: Multiplication with Decimals and Whole Numbers

Core Lesson Student Learning Objectives: Students will be able to use drawings and place value to multiply a decimal and a whole number.

Core Lesson Essential Questions: How can you use properties and place value to multiply a decimal and a whole number? (E)

Core Lesson Materials: GO Math Chapter 4 Lesson 3

Topic: Lesson 42- Problem Solving and Multiplying Money (E)

Core Lesson Description: Problem Solving and Multiplying Money

Core Lesson Student Learning Objectives: Students will be able to use the strategy draw a diagram to solve a decimal multiplication problem.

Core Lesson Essential Questions: How can the strategy draw a diagram help you solve a decimal multiplication problem? (E)

Core Lesson Materials: GO Math Chapter 4 Lesson 5

Topic: Lesson 43- Mid-Chapter Checkpoint

Core Lesson Description: Chapter 4 Mid-Chapter Checkpoint

Core Lesson Materials: GO Math Chapter 4 Mid-Chapter Checkpoint

Topic: Lesson 44- Multiply Decimals (E)

Core Lesson Description: Multiply Decimals

Core Lesson Student Learning Objectives: Students will be able to place a decimal point in a product.

Core Lesson Essential Questions: What strategies can you use to place a decimal point in a product? (E)

Core Lesson Materials: GO Math Chapter 4 Lesson 7

Topic: Lesson 45- Zeros in the Product (E)

Core Lesson Description: Zeros in the Product

Core Lesson Student Learning Objectives: Students will be able to have the correct number of decimal places in the product.

Core Lesson Essential Questions: How do you know you have the correct number of decimal places in your product? (E)

Core Lesson Materials: Go Math Chapter 4 Lesson 8

Topic: Lesson 46 and 47- Chapter Review

Core Lesson Description: Chapter 4 Review Test

Core Lesson Materials: GO Math Chapter 4 Review Test

Topic: Lesson 48- Test

Core Lesson Description: Chapter 4 Test

Core Lesson Materials: GO Math Chapter 4 Test

Topic: Lesson 49- Division Patterns with Decimals (E)

Core Lesson Description: Division Patterns with Decimals

Core Lesson Student Learning Objectives: Students will be able to use a pattern to help place the decimal point in a quotient.

Core Lesson Essential Questions: How can patterns help you place the decimal point in a quotient? (E)

Core Lesson Materials: GO Math Chapter 5 Lesson 1

Topic: Lesson 50- Estimate Quotients (E)

Core Lesson Description: Estimate Quotients

Core Lesson

Student Learning Objectives: Students will be able to estimate decimal quotients.

Core Lesson Essential Questions: How can you estimate decimal quotients?

Core Lesson Materials: GO Math Chapter 5 Lesson 3

Topic: Lesson 51- Division of Decimals by Whole Numbers (E)

Core Lesson Description: Division of Decimals by Whole Numbers

Core Lesson Student Learning Objectives: Students will be able to divide decimals by whole numbers.

Core Lesson Essential Questions: How can you divide decimals by whole numbers? (E)

Core Lesson Materials: GO Math Chapter 5 Lesson 4

Topic: Lesson 52- Mid-Chapter Checkpoint

Core Lesson Description: Chapter 5 Mid-Chapter Checkpoint

Core Lesson Materials: GO Math Chapter 5 Mid-Chapter Checkpoint

Topic: Lesson 53- Divide Decimals (I)

Core Lesson Description: Divide Decimals

Core Lesson Student Learning Objectives: Students will be able to place the decimal point in decimal division.

Core Lesson Essential Questions: How can you place the decimal point in the quotient? (I)

Core Lesson Materials: Go Math Chapter 5 Lesson 6

Topic: Lesson 54- Write Zeros in the Dividend (I)

Core Lesson Description: Write Zeros in the Dividend

Core Lesson Student Learning Objectives: Students will be able to write a zero in the dividend to find a quotient.

Core Lesson Essential Questions: When do you write a zero in the dividend to find a quotient? (I)

Core Lesson Materials:	Go Math Chapter 5 Lesson 7
Core Lesson Key Terminology & Definitions:	Equivalent Fractions Remainder

Topic: Lesson 55 and 56- Chapter Review

Core Lesson Description:	Chapter 5 Review Test
Core Lesson Materials:	Go Math Chapter 5 Review

Topic: Lesson 57- Test

Core Lesson Description:	Chapter 5 Test
Core Lesson Materials:	Chapter 5 Test

Unit: Fractions

Month: November, December, and January (28 Days)

Skills:

1. Add, subtract, multiply and divide fractions to solve problems
2. Explain operations as they pertain to fractions

Essential Questions:

1. How is mathematics used to quantify, compare, represent, and model numbers?
2. How can mathematics support effective communication?
3. How are relationships represented mathematically?
4. What does it mean to estimate or analyze numerical quantities?
5. What make a tool and/or strategy appropriate for a given task?

Content:

1. Mathematical relationships among numbers can be represented, compared, and communicated.
2. Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.
3. Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.

Vocabulary:

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.1.5.C.1 (Advanced)	Use the understanding of equivalency to add and subtract fractions.
CC.2.1.5.C.2 (Advanced)	Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

STATE: PA Core Anchors and Eligible Content (2014)

M05.A-F.1.1.1 (Advanced)	Add and subtract fractions (including mixed numbers) with unlike denominators. (May include multiple methods and representations.) Example: 2/3 + 5/4 = 8/12 + 15/12 = 23/12 Alternate Eligible Content Code M05AF1.1.1a: Add or subtract proper fractions with common denominators to solve a real-world problem
M05.A-F.2.1.1 (Advanced)	Solve word problems involving division of whole numbers leading to answers in the form of fractions (including mixed numbers).
M05.A-F.2.1.2 (Advanced)	Multiply a fraction (including mixed numbers) by a fraction. Alternate Eligible Content Code M05.AF.2.1.2.a: Multiply a fraction by a whole number less than 10
M05.A-F.2.1.3 (Advanced)	Demonstrate an understanding of multiplication as scaling (resizing). Example 1: Comparing the size of a product to the size of one factor on the basis of the size of the other factor without performing the indicated multiplication. Example 2: Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.
M05.A-F.2.1.4 (Advanced)	Divide unit fractions by whole numbers and whole numbers by unit fractions.

(* standards consolidated from Topic level)

Topic: Lesson 58- Common Denominators (E)

Core Lesson Description: Common Denominators

Core Lesson Student Learning Objectives: Students will be able to find a common denominator or a least common denominator to write equivalent fractions.

Core Lesson

Essential Questions:	How can you add and subtract mixed numbers with unlike denominators? (E)
Core Lesson Materials:	Go Math Chapter 6 Lesson 4
Core Lesson Key Terminology & Definitions:	Common Denominator Common Multiples Equivalent Fractions

STANDARDS

STATE: PA Core Standards (2014)

CC.2.1.5.C.1 (Advanced)	Use the understanding of equivalency to add and subtract fractions.
CC.2.1.5.C.2 (Advanced)	Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

STATE: PA Core Anchors and Eligible Content (2014)

M05.A-F.1.1.1 (Advanced)	Add and subtract fractions (including mixed numbers) with unlike denominators. (May include multiple methods and representations.) Example: 2/3 + 5/4 = 8/12 + 15/12 = 23/12 Alternate Eligible Content Code M05AF1.1.1a: Add or subtract proper fractions with common denominators to solve a real-world problem
M05.A-F.2.1.1 (Advanced)	Solve word problems involving division of whole numbers leading to answers in the form of fractions (including mixed numbers).
M05.A-F.2.1.2 (Advanced)	Multiply a fraction (including mixed numbers) by a fraction. Alternate Eligible Content Code M05.AF.2.1.2.a: Multiply a fraction by a whole number less than 10
M05.A-F.2.1.3 (Advanced)	Demonstrate an understanding of multiplication as scaling (resizing). Example 1: Comparing the size of a product to the size of one factor on the basis of the size of the other factor without performing the indicated multiplication. Example 2: Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.
M05.A-F.2.1.4 (Advanced)	Divide unit fractions by whole numbers and whole numbers by unit fractions.

Topic: Lesson 59- Estimate Fraction Sum and Differences (E)

Core Lesson Description:	Estimate Fraction Sum and Differences
Core Lesson Student Learning Objectives:	Students will be able to make a reasonable estimates of fraction sums and differences.
Core Lesson Essential Questions:	How can you make reasonable estimates of fraction sums and differences? (E)
Core Lesson Materials:	Go Math Chapter 6 lesson 3
Core Lesson Key Terminology & Definitions:	Benchmark

Topic: Lesson 60- Add and Subtract Fractions (E)

Core Lesson Description:	Add and Subtract Fractions
Core Lesson Student Learning Objectives:	Students will be able to use equivalent fractions to add and subtract fractions.
Core Lesson Essential Questions:	How can yo use a common denominator to add and subtract fractions with unlike denominators? (E)
Core Lesson Materials:	Go Math Chapter 6 Lesson 5
Core Lesson Key Terminology & Definitions:	Simplest Form

Topic: Lesson 61- Mid-Chapter Checkpoint

Core Lesson Description:	Chapter 6 Mid-Chapter Checkpoint
Core Lesson Materials:	Go Math Chapter 6 Mid-Chapter Checkpoint

Topic: Lesson 62- Add and Subtract Mixed Numbers (E)

Core Lesson Description:	Add and Subtract Mixed Numbers
Core Lesson Student Learning Objectives:	Students will be able to add and subtract mixed numbers with unlike denominators.
Core Lesson Essential Questions:	How can you add and subtract mixed numbers with unlike denominators? (E)
Core Lesson Materials:	Go Math Chapter 6 Lesson 6
Core Lesson Key Terminology & Definitions:	Mixed Number

Topic: Lesson 63- Subtraction with Renaming (E)

Core Lesson Description:	Subtraction with Renaming
Core Lesson Student Learning Objectives:	Students will be able to rename to find the difference of two mixed numbers.
Core Lesson Essential Questions:	How can you use renaming to find the difference of two mixed numbers? (E)
Core Lesson Materials:	Go Math Chapter 6 Lesson 7

Topic: Lesson 64- Patterns with Fractions (E)

Core Lesson Description:	Patterns with Fractions
Core Lesson Student Learning Objectives:	Students will be able to identify, describe, and create numeric patters with fractions.
Core Lesson Essential Questions:	How can you use addition or subtraction to describe a pattern or create a sequence with fractions? (E)
Core Lesson Materials:	Go Math Chapter 6 Lesson 8
Core Lesson Key Terminology & Definitions:	Benchmark

Topic: Lesson 65 and 66- Chapter Review

Core Lesson Description:	Chapter 6 Review Test

Topic: Lesson 67- Chapter Test

Core Lesson Description:	Chapter 6 Test
Core Lesson Materials:	Go Math Chapter 6 Test

Topic: Lesson 68- Find Parts of a Group (E)

Core Lesson Description:	Find Parts of a Group
Core Lesson Student Learning Objectives:	Students will be able to find the fractional part of a group.
Core Lesson Essential Questions:	How can you find a fractional part of a group? (E)
Core Lesson Materials:	Go Math Chapter 7 Lesson 1
Core Lesson Key Terminology & Definitions:	Denominator Numerator Product

Topic: Lesson 69- Fraction and Whole Number Multiplication (E)

Core Lesson Description:	Fraction and Whole Number Multiplication
Core Lesson Student Learning Objectives:	Students will be able to multiply fractions and whole numbers.

Core Lesson Essential Questions: How can you find the product of a fraction and a whole number without using a model? (E)

Core Lesson Materials: Chapter 7 Lesson 3

Topic: Lesson 70- Compare Fraction Factors and Products (E)

Core Lesson Description: Compare Fractions Factors and Products

Core Lesson Student Learning Objectives: Students will be able to relate the size of the product compared to the size of one factor when multiplying fractions.

Core Lesson Essential Questions: How does the size of the product compare to the size of one factor when multiplying fractions? (E)

Core Lesson Materials: Go Math Chapter 7 Lesson 5

Topic: Lesson 71- Fraction Multiplication (E)

Core Lesson Description: Fraction Multiplication

Core Lesson Student Learning Objectives: Students will be able to multiply fractions.

Core Lesson Essential Questions: How do you multiply fractions? (E)

Core Lesson Materials: Go Math Chapter 7 Lesson 6

Core Lesson Key Terminology & Definitions: Simplest Form

Topic: Lesson 72- Mid-Chapter Checkpoint

Core Lesson Description: Chapter 7 Mid-Chapter Checkpoint

Core Lesson Materials: Go Math Chapter 7 Mid-Chapter Checkpoint

Topic: Lesson 73- Compare Mixed Numbers Factors and Products (I)

Core Lesson Description: Compare Mixed Numbers Factors and Products

Core Lesson Student Learning Objectives: Students will be able to relate size of the product to the factors when multiplying fractions greater than one.

Core Lesson Essential Questions: How does the size of the product compare to the size of one factor when multiplying fractions greater than one? (I)

Core Lesson Materials: Go Math Chapter 7 Lesson 8

Topic: Lesson 74- Multiply Mixed Numbers (E)

Core Lesson Description: Multiply Mixed Numbers

Core Lesson Student Learning Objectives: Students will be able to multiply mixed numbers.

Core Lesson Essential Questions: How do you multiply mixed numbers? (E)

Core Lesson Materials: Go Math Chapter 7 Lesson 9

Core Lesson Key Terminology & Definitions: Mixed Numbers

Topic: Lesson 75- Investigate Area and Mixed Numbers (E)

Core Lesson Description: Investigate Area and Mixed Numbers

Core Lesson Student Learning Objectives: Students will be able to use a models to multiply two mixed numbers and find the area of a rectangle.

Core Lesson Essential Questions: How can you use a unit tile to find the area of a rectangle with fractional side lengths? (E)

Core Lesson Materials: Chapter 7 Lesson 7

Core Lesson Key Terminology & Definitions: Mixed Number

Topic: Lesson 76 and 77- Chapter Review

Core Lesson Description: Chapter 7 Review

Core Lesson Materials: Go Math Chapter 7 Review Test

Topic: Lesson 78- Chapter Test

Core Lesson Description: Chapter 7 Test

Core Lesson Materials: Go Math Chapter 7 Test

Topic: Lesson 79- Connecting Fractions to Division (E)

Core Lesson Description: Connecting Fractions to Division

Core Lesson Student Learning Objectives: Students will be able to interpret a fraction as division and solve whole-number division problems that result in a fraction or mixed number.

Core Lesson Essential Questions: How does a fraction represent division? (E)

Core Lesson Materials: Go Math Chapter 8 Lesson 3

Topic: Lesson 80- Fraction and Whole Number Division (E)

Core Lesson Description: Fraction and Whole Number Division

Core Lesson Student Learning Objectives: Students will be able to divide a whole number by a fraction and divide a fraction by a whole number.

Core Lesson Essential Questions: How can you divide fractions by solving a related multiplication sentence? (E)

Core Lesson Materials: Go Math Chapter 8 Lesson 4

Topic: Lesson 81- Mid-Chapter Checkpoint

Core Lesson Description: Chapter 8 Mid-Chapter Checkpoint

Core Lesson Materials: Go Math Chapter 8 Mid-Chapter Checkpoint

Topic: Lesson 82- Interpret Division with Fractions (E)

Core Lesson Description: Interpret Division with Fractions

Core Lesson Student Learning Objectives: Students will be able to represent division by drawing diagrams and writing story problems and equations.

Core Lesson Essential Questions: How can you use diagrams, equations, and story problems to represent division? (E)

Core Lesson Materials: Go Math Chapter 8 Lesson 5

Core Lesson Key Terminology & Definitions: Equation

Topic: Lesson 83 and 84- Chapter Review

Core Lesson Description: Chapter 8 Review

Core Lesson Materials: Go Math Chapter 8 Test

Topic: Lesson 85- Chapter Test

Core Lesson Description: Chapter 8 Test

Core Lesson Materials: Go Math Chapter 8 Test

Unit: Patterns

Month: October and January (5 Days)

Skills:

1. Generate, analyze and compare patterns

Essential Questions:

1. How can patterns be used to describe relationships in mathematical situations?
2. How can recognizing repetition or regularity assist in solving problems more efficiently?
3. How can data be organized and represented to provide insight in the relationship between quantities?
4. How does the type of data influence the choice of display?
5. How can probability and data analysis be used to make predictions?

Content:

1. Patterns exhibit relationships that can be extended, described, and generalized.
2. Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.
3. Data can be modeled and used to make inferences.

Vocabulary:

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

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

STATE: PA Core Anchors and Eligible Content (2014)

M05.B-O.1.1.2 (Advanced)	Write simple expressions that model calculations with numbers and interpret numerical expressions without evaluating them. Example 1: Express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Example 2: Recognize that 3 × (18,932 + 921) is three times as large as 18,932 + 921 without having to calculate the indicated sum or product.
M05.B-O.2.1.1 (Advanced)	Generate two numerical patterns using two given rules. Example: Given the rule "add 3" and the starting number 0 and given the rule "add 6" and the starting number 0, generate terms in the resulting sequences. Alternate Eligible Content Code M05BO2.1.1a: Identify and extend numeric patterns M05BO2.1.1b: Generate a pattern that follows 1 or more rules provided
M05.B-O.2.1.2 (Advanced)	Identify apparent relationships between corresponding terms of two patterns with the same starting numbers that follow different rules. Example: Given two patterns in which the first pattern follows the rule "add 8" and the second pattern follows the rule "add 2," observe that the terms in the first pattern are 4 times the size of the terms in the second pattern.

(* standards consolidated from Topic level)

Topic: Lesson 35 and 36 Patterns with Decimals (E)

Core Lesson Description:	Patterns with Decimals
Core Lesson Student Learning Objectives:	Students will be able to identify, describe, and create numeric patterns with decimals.
Core Lesson Essential Questions:	How can you use additions or subtraction to describe a pattern or create a sequence with decimals? (E)
Core Lesson Materials:	Go Math Chapter 3 Lesson 10
Core Lesson Key Terminology & Definitions:	Sequence Term

STANDARDS

STATE: PA Core Standards (2014)

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

STATE: PA Core Anchors and Eligible Content (2014)

M05.B-O.1.1.2 (Advanced)	Write simple expressions that model calculations with numbers and interpret numerical expressions without evaluating them. Example 1: Express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Example 2: Recognize that 3 × (18,932 + 921) is three times as large as 18,932 + 921 without having to calculate the indicated sum or product.
M05.B-O.2.1.1 (Advanced)	Generate two numerical patterns using two given rules. Example: Given the rule "add 3" and the starting number 0 and given the rule "add 6" and the starting number 0, generate terms in the resulting sequences. Alternate Eligible Content Code M05BO2.1.1a: Identify and extend numeric patterns M05BO2.1.1b: Generate a pattern that follows 1 or more rules provided

M05.B-O.2.1.2 (Advanced) Identify apparent relationships between corresponding terms of two patterns with the same starting numbers that follow different rules. Example: Given two patterns in which the first pattern follows the rule "add 8" and the second pattern follows the rule "add 2," observe that the terms in the first pattern are 4 times the size of the terms in the second pattern.

Topic: Lesson 91- Numerical Patterns (E)

Core Lesson Description:	Numerical Patterns
Core Lesson Student Learning Objectives:	Students will be able to use two rules to generate a numerical pattern and identify the relationship between the corresponding terms in the patterns.
Core Lesson Essential Questions:	How can you identify a relationship between two numerical patterns? (E)
Core Lesson Materials:	Go Math Chapter 9 lesson 5

Topic: Lesson 92- Problem Solving Find a Rule (E)

Core Lesson Description:	Problem Solving Find a Rule
Core Lesson Student Learning Objectives:	Students will be able to solve problems using the strategy solve a simpler problem.
Core Lesson Essential Questions:	How can you use the strategy solve a simpler problem to help you solve a problem with patterns? (E)
Core Lesson Materials:	Go Math Chapter 9 Lesson 6

Topic: Lesson 93- Graph and Analyze Relationships (E)

Core Lesson Description:	Graph and Analyze Relationships
Core Lesson Student Learning Objectives:	Students will be able to graph the relationship between two numerical patterns on a coordinate grid.
Core Lesson Essential Questions:	How can you write and graph ordered pairs on a coordinate grid using two numerical patterns? (E)
Core Lesson Materials:	Go Math Chapter 9 Lesson 7

Unit: Coordinate Plane

Month: January (2 Days)

Skills:

1. Describe and interpret points given an ordered pair
2. Plot points in quadrant I
3. Describe and interpret points given an ordered pair
4. Identify parts of a coordinate grid

Essential Questions:

1. How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems?
2. How can geometric properties and theorems be used to describe, model, and analyze situations?

Content:

1. Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.

Vocabulary:

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

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

STATE: PA Core Anchors and Eligible Content (2014)

M05.C-G.1.1.1 (Advanced)	Identify parts of the coordinate plane (x-axis, y-axis, and the origin) and the ordered pair (x-coordinate and y-coordinate). Limit the coordinate plane to quadrant I. Alternate Eligible Content Code M05CG1.1.1a: Identify an ordered pair (x,y) in quadrant I
M05.C-G.1.1.2 (Advanced)	Represent real-world and mathematical problems by plotting points in quadrant I of the coordinate plane and interpret coordinate values of points in the context of the situation. Alternate Eligible Content Code M05CG1.1.2a: Graph an ordered pair (x,y) in quadrant I

(* standards consolidated from Topic level)

Topic: Lesson 87- Ordered Pairs (E)

Core Lesson Description:	Ordered Pairs
Core Lesson Student Learning Objectives:	Students will be able to graph and name points on a coordinate grid using ordered pairs.
Core Lesson Essential Questions:	How can you identify and plot points on a coordinate grid? (E)
Core Lesson Materials:	Go Math Chapter 9 Lesson 2
Core Lesson Key Terminology & Definitions:	Ordered Pair Origin X-axis X-coordinate Y-axis Y-coordinate

STANDARDS

STATE: PA Core Standards (2014)

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

STATE: PA Core Anchors and Eligible Content (2014)

M05.C-G.1.1.1 (Advanced)	Identify parts of the coordinate plane (x-axis, y-axis, and the origin) and the ordered pair (x-coordinate and y-coordinate). Limit the coordinate plane to quadrant I. Alternate Eligible Content Code M05CG1.1.1a: Identify an ordered pair (x,y) in quadrant I
M05.C-G.1.1.2 (Advanced)	Represent real-world and mathematical problems by plotting points in quadrant I of the coordinate plane and interpret coordinate values of points in the context of the situation. Alternate Eligible Content Code M05CG1.1.2a: Graph an ordered pair (x,y) in quadrant I

Topic: Lesson 88- Investigate Graph Data (E)

Core Lesson Description:	Investigate Graph Data
Core Lesson Student Learning Objectives:	Students will be able to collect and graph data on a coordinate grid.
Core Lesson Essential Questions:	How can you use a coordinate grid to display data collected in an experiment? (E)
Core Lesson Materials:	Go Math Chapter 9 Lesson 3

Core Lesson Key Terminology & Definitions: Degree Fahrenheit

Unit: Two-Dimensional Figures

Month: February (5 Days)

Skills:

1. Classify two-dimensional figures based on their properties

Essential Questions:

1. How can patterns be used to describe relationships in mathematical situations?
2. How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving?
3. How can geometric properties and theorems be used to describe, model, and analyze situations?

Content:

1. Patterns exhibit relationships that can be extended, described, and generalized.
2. Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.

Vocabulary:

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.3.5.A.2 (Advanced)	Classify two-dimensional figures into categories based on an understanding of their properties.

STATE: PA Core Anchors and Eligible Content (2014)

M05.C-G.2.1.1 (Advanced)	Classify two-dimensional figures in a hierarchy based on properties. Example 1: All polygons have at least three sides, and pentagons are polygons, so all pentagons have at least three sides. Example 2: A rectangle is a

parallelogram, which is a quadrilateral, which is a polygon; so, a rectangle can be classified as a parallelogram, as a quadrilateral, and as a polygon.

Alternate Eligible Content Code M05CG2.1.1a: Identify a two-dimensional figure with specific attributes

(* standards consolidated from Topic level)

Topic: Lesson 108- Polygons (E)

Core Lesson Description: Polygons

Core Lesson Student Learning Objectives: Students will be able to identify and classify polygons.

Core Lesson Essential Questions: How can you identify and classify polygons? (E)

Core Lesson Materials: Go Math Chapter 11 Lesson 1

Core Lesson Key Terminology & Definitions:

Congruent

Heptagon

Nonagon

Polygon

Regular Polygon

Decagon

Hexagon

Octagon

Pentagon

Quadrilateral

STANDARDS

STATE: PA Core Standards (2014)

CC.2.3.5.A.2 (Advanced) Classify two-dimensional figures into categories based on an understanding of their properties.

STATE: PA Core Anchors and Eligible Content (2014)

M05.C-G.2.1.1 (Advanced) Classify two-dimensional figures in a hierarchy based on properties. Example 1: All polygons have at least three sides, and pentagons are polygons, so all pentagons have at least three sides. Example 2: A rectangle is a parallelogram, which is a quadrilateral, which is a polygon; so, a rectangle can be classified as a parallelogram, as a quadrilateral, and as a polygon.

Alternate Eligible Content Code M05CG2.1.1a: Identify a two-dimensional figure with specific attributes

Topic: Lesson 109- Triangles (E)

Core Lesson Description: Triangles

Core Lesson Student Learning Objectives: Students will be able to classify and draw triangles using properties.

Core Lesson Essential Questions: How can you classify triangles? (E)

Core Lesson Materials: Go Math Chapter 11 Lesson 2

Core Lesson Key Terminology & Definitions:
Equilateral Triangle
Isosceles Triangle
Scalene Triangle
Acute Triangle
Obtuse Triangle
Right Triangle

Topic: Lesson 110- Quadrilaterals (E)

Core Lesson Description: Quadrilaterals

Core Lesson Student Learning Objectives: Students will be able to classify and compare quadrilaterals using their properties.

Core Lesson Essential Questions: How can you classify and compare quadrilaterals? (E)

Core Lesson Materials: Go Math Chapter 11 lesson 3

Core Lesson Key Terminology & Definitions:
Parallel Lines
Parallelogram
Perpendicular Lines
Rectangle
Rhombus
Trapezoid

Topic: Lesson 111- Problem Solving Properties of Two Dimensional Figures (I)

Core Lesson Description: Problem Solving Properties of Two Dimensional Figures

Core Lesson Student Learning Objectives: Students will be able to identify, describe, and classify three-dimensional figures.

Core Lesson Essential Questions: How can you identify, describe, and classify three-dimensional figures? (I)

Core Lesson Materials: Go Math Chapter 11 Lesson 4

Core Lesson Key Terminology & Definitions:

Base

Decagonal Prism

Hexagonal Prism

Lateral Face

Octagonal Prism

Pentagonal Prism

Pentagonal Pyramid

Polyhedron

Prism

Pyramid

Topic: Lesson 112- Mid-Chapter Checkpoint

Core Lesson Description: Chapter 11 Mid-Chapter Checkpoint

Core Lesson Materials: Go Math Chapter 11 Mid-Chapter Checkpoint

Unit: Volume and Three-Dimensional Solids

Month: February and March (7 Days)

Skills:

1. Apply concepts of volume to solve problems
2. Relate volume to multiplication and to addition

Essential Questions:

1. How are spatial relationships, including shape and dimension, used to draw, construct, model and represent real situations or solve problems?
2. How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving?
3. How can geometric properties and theorems be used to describe, model, and analyze situations?

Content:

1. Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.

Vocabulary:

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.4.5.A.5 (Advanced)	Apply concepts of volume to solve problems and relate volume to multiplication and to addition.

STATE: PA Core Anchors and Eligible Content (2014)

M05.D-M.3.1.1 (Advanced)	Apply the formulas V = l × w × h and V = B × 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. Formulas will be provided.
M05.D-M.3.1.2	Find volumes of solid figures composed of two non-

(Advanced)	overlapping right rectangular prisms. Alternate Eligible Content Code M05DM3.1.2a: Find volume by using filling or multiplication

(* standards consolidated from Topic level)

Topic: Lesson 113- Unit Cubes and Solid Figures (E)

Core Lesson Description:	Unit Cubes and Solid Figures
Core Lesson Student Learning Objectives:	Students will be able to understand unit cubes and how they can be used to build a solid figure.
Core Lesson Essential Questions:	What is a unit cube and how can you use it to build a solid figure? (E)
Core Lesson Materials:	Go Math Chapter 11 Lesson 5
Core Lesson Key Terminology & Definitions:	Unit Cube

STANDARDS

STATE: PA Core Standards (2014)

CC.2.4.5.A.5 (Advanced)	Apply concepts of volume to solve problems and relate volume to multiplication and to addition.

STATE: PA Core Anchors and Eligible Content (2014)

M05.D-M.3.1.1 (Advanced)	Apply the formulas V = l × w × h and V = B × 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. Formulas will be provided.
M05.D-M.3.1.2 (Advanced)	Find volumes of solid figures composed of two non-overlapping right rectangular prisms. Alternate Eligible Content Code M05DM3.1.2a: Find volume by using filling or multiplication

Topic: Lesson 114- Understand Volume (E)

Core Lesson Description:	Understand Volume
Core Lesson Student Learning Objectives:	Students will be able to count unit cubes that fill a solid figure to find volume.
Core Lesson Essential Questions:	How can you use unit cubes to find the volume of a rectangular prism? (E)
Core Lesson Materials:	Go Math Chapter 11 Lesson 6
Core Lesson Key Terminology & Definitions:	Cubic Unit Volume

Topic: Lesson 116- Volume of Rectangular Prisms (E)

Core Lesson Description:	Volume of Rectangular Prisms
Core Lesson Student Learning Objectives:	Students will be able to find the volume of a rectangular prism.
Core Lesson Essential Questions:	How can you find the volume of a rectangular prism? (E)
Core Lesson Materials:	Go Math Chapter 11 Lesson 8

Topic: Lesson 118- Problem Solving Compare Volumes (E)

Core Lesson Description:	Problem Solving Compare Volumes
Core Lesson Student Learning Objectives:	Students will be able to use the strategy make a table to compare volumes.
Core Lesson Essential Questions:	How can you use the strategy make a table to compare different rectangular prisms with the same volume? (E)
Core Lesson Materials:	Chapter 11 Lesson 10

Topic: Lesson 120 and 121- Chapter Review

Core Lesson Description:	Chapter 11 Review Test
Core Lesson Materials:	Go Math Chapter 11 Review Test

Topic: Lesson 122- Chapter Test

Core Lesson Description:	Chapter 11 Test
Core Lesson Materials:	Go Math Chapter 11 Test

Unit: Measurement

Month: February (11 Days)

Skills:

1. Solve problems using simple conversions

Essential Questions:

1. What does it mean to estimate or analyze numerical quantities?
2. When is it appropriate to estimate versus calculate?
3. What makes a tool and/or strategy appropriate for a given task?
4. Why does "what" we measure influence "how" we measure?
5. In what ways are the mathematical attributes of objects or processes measured, calculated and/or interpreted?
6. How precise do measurements and calculations need to be?

Content:

1. Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.
2. Measurement attributes can be quantified, and estimated using customary and non-customary units of measure.

Vocabulary:

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.4.5.A.1 (Advanced)	Solve problems using conversions within a given measurement system.

STATE: PA Core Anchors and Eligible Content (2014)

M05.D-M.1.1.1 (Advanced)	Convert between different-sized measurement units within a given measurement system. A table of equivalencies will be provided. Example: Convert 5 cm to meters. Alternate Eligible Content Code M05DM1.1.1a: Use a conversion table to identify equivalent standard measurements of length or mass

(* standards consolidated from Topic level)

Topic: Lesson 97- Customary Length (E)

Core Lesson Description: Customary Length

Core Lesson Student Learning Objectives: Students will be able to compare, contrast, and convert customary units of length.

Core Lesson Essential Questions: How can you compare and convert customary units of length? (E)

Core Lesson Materials: Go Math Chapter 10 Lesson 1

Core Lesson Key Terminology & Definitions:
Foot
Inch
Mile
Yard

STANDARDS

STATE: PA Core Standards (2014)

CC.2.4.5.A.1 (Advanced) Solve problems using conversions within a given measurement system.

STATE: PA Core Anchors and Eligible Content (2014)

M05.D-M.1.1.1 (Advanced) Convert between different-sized measurement units within a given measurement system. A table of equivalencies will be provided. Example: Convert 5 cm to meters.

Alternate Eligible Content Code M05DM1.1.1a: Use a conversion table to identify equivalent standard measurements of length or mass

Topic: Lesson 98- Customary Capacity (E)

Core Lesson Description: Customary Capacity

Core Lesson Student Learning Objectives: Students will be able to compare, contrast, and convert customary units of capacity.

Core Lesson Essential Questions: How can you compare and convert customary units of capacity? (E)

Core Lesson Materials: Chapter 10 Lesson 2

Core Lesson Key Terminology & Definitions:
Capacity
Cup
Fluid Ounce
Gallon
Pint
Quart

Topic: Lesson 99- Weight (E)

Core Lesson Description: Weight

Core Lesson Student Learning Objectives: Students will be able to compare, contrast, and convert customary units of weight.

Core Lesson Essential Questions: How can you compare and convert customary units of weight? (E)

Core Lesson Materials: Go Math Chapter 10 Lesson 3

Core Lesson Key Terminology & Definitions: Ounce

Pound

Ton

Weight

Topic: Lesson 100- Multi-Step Measurement Problems (E)

Core Lesson Description: Multi-step Measurement Problems

Core Lesson Student Learning Objectives: Students will be able to convert measurement units to solve multi-step problems.

Core Lesson Essential Questions: How can you solve multi-step problems that include measurement conversions? (E)

Core Lesson Materials: Go Math Chapter 10 Lesson 4

Topic: Lesson 101- Mid-Chapter Checkpoint

Core Lesson Description: Chapter 10 Mid-Chapter Checkpoint

Core Lesson Materials: Go Math Chapter 10 Mid-Chapter Checkpoint

Topic: Lesson 102- Metric Measures (E)

Core Lesson Description: Metric Measures

Core Lesson Student Learning Objectives: Students will be able to compare, contrast, and convert metric units.

Core Lesson Essential Questions: How can you compare and convert metric units? (E)

Core Lesson Materials: Go Math Chapter 10 Lesson 5

Core Lesson Key Terminology & Definitions: Dekameter

Centimeter

Decimeter

Gram

Kilogram

Kilometer

Liter

Mass

Meter

Milligram

Milliliter

Millimeter

Topic: Lesson 103- Problem Solving Customary and Metric Conversions (E)

Core Lesson Description:	Problem Solving Customary and Metric Conversions
Core Lesson Student Learning Objectives:	Students will be able to solve problems about customary and metric conversions using the strategy make a table.
Core Lesson Essential Questions:	How can you use the strategy make a table to help solve problems about customary and metric conversions? (E)
Core Lesson Materials:	Go Math Chapter 10 lesson 6

Topic: Lesson 104- Elapsed Time (I)

Core Lesson Description:	Elapsed Time
Core Lesson Student Learning Objectives:	Students will be able to convert units of time to solve elapsed time problems.
Core Lesson Essential Questions:	How can you solve elapsed time problems by converting units of time? (I)
Core Lesson Materials:	Go Math Chapter 10 Lesson 7
Core Lesson Key Terminology & Definitions:	Elapsed Time

Topic: Lesson 105 and 106- Chapter Review

Core Lesson Description:	Chapter 10 Review
Core Lesson Materials:	Go Math Chapter 10 Review Test

Topic: Lesson 107- Chapter Test

Core Lesson Description: Chapter 10 Test

Core Lesson Materials: Go Math Chapter 10 Test

Unit: Data Displays

Month: January (6 Days)

Skills:
1. Organize and display data in order to answer questions
2. Represent and interpret data using appropriate scale
3. Solve problems involving computation with fractions using information obtained from data displays

Essential Questions:
1. What does it mean to estimate or analyze numerical quantities?
2. What makes a tool and/or strategy appropriate for a given task?
3. How can data be organized and represented to provide insight into the relationship between quantities?
4. How does the type of data influence the choice of display?
5. How can probability and data analysis be used to make predictions?

Content:
1. Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.
2. Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.
3. Data can be modeled and used to make inferences.

Vocabulary:

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.4.5.A.2 (Advanced)	Represent and interpret data using appropriate scale.
CC.2.4.5.A.4 (Advanced)	Solve problems involving computation of fractions using information provided in a line plot.

STATE: PA Core Anchors and Eligible Content (2014)

M05.D-M.2.1.1 (Advanced)	Solve problems involving computation of fractions by using information presented in line plots.
M05.D-M.2.1.2 (Advanced)	Display and interpret data shown in tallies, tables, charts, pictographs, bar graphs, and line graphs, and use a title, appropriate scale, and labels. A grid will be provided to display data on bar graphs or line graphs. Alternate Eligible Content Code M05DM2.1.2a: Interpret one set of data given in 2 different displays

(* standards consolidated from Topic level)

Topic: Lesson 86- Line Plots (E)

Core Lesson Description:	Line Plots
Core Lesson Student Learning Objectives:	Students will be able to make and use line plots with fractions to solve problems.
Core Lesson Essential Questions:	How can a line plot help you find an average with data given in fractions? (E)
Core Lesson Materials:	Go Math Chapter 9 lesson 1
Core Lesson Key Terminology & Definitions:	Data Line Plot

STANDARDS

STATE: PA Core Standards (2014)

CC.2.4.5.A.2 (Advanced)	Represent and interpret data using appropriate scale.
CC.2.4.5.A.4 (Advanced)	Solve problems involving computation of fractions using information provided in a line plot.

STATE: PA Core Anchors and Eligible Content (2014)

M05.D-M.2.1.1 (Advanced)	Solve problems involving computation of fractions by using information presented in line plots.
M05.D-M.2.1.2 (Advanced)	Display and interpret data shown in tallies, tables, charts, pictographs, bar graphs, and line graphs, and use a title, appropriate scale, and labels. A grid will be provided to display data on bar graphs or line graphs. Alternate Eligible Content Code M05DM2.1.2a: Interpret one set of data given in 2 different displays

Topic: Lesson 89- Line Graphs (E)

Core Lesson Description:	Line Graphs
Core Lesson	

Student Learning Objectives:	Students will be able to analyze and display data in a line graph.
Core Lesson Essential Questions:	How can you use a line graph to display and analyze real world data? (E)
Core Lesson Materials:	Go Math Chapter 9 Lesson 4
Core Lesson Key Terminology & Definitions:	Interval Line Graph Scale

Topic: Lesson 90- Mid-Chapter Checkpoint

Core Lesson Description:	Chapter 9 Mid-Chapter Checkpoint
Core Lesson Materials:	Go Math Chapter 9 Mid-Chapter Checkpoint

Topic: Lesson 94 and 95- Chapter Review

Core Lesson Description:	Chapter 9 Review
Core Lesson Materials:	Go Math Chapter 9 Review Test

Topic: Lesson 96- Chapter Test

Core Lesson Description:	Chapter 9 Test
Core Lesson Materials:	Go Math Chapter 9 Test

Unit: Volume Three-Dimensional Solids

Month: March (3 Days)

Skills:
1. Apply concepts of volume to solve problems
2. Relate volume to multiplication and to addition

Essential Questions:
1. What makes a tool and/or strategy appropriate for a given task?
2. In what ways are the mathematical attributes of objects or processes measured, calculated, and/or interpreted?

Content:
1. Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.
2. Measurement attributes can be quantified and estimated using customary and non-customary units of measure.

Vocabulary: Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

Braces

Brackets

Coordinate Plane

Cubic Units

Decimal Place Value (through thousandths)

Measurement Systems

Measurement Units

Numerical Expressions

Order of Operations

Origin

Parentheses

Scaling (resizing)

Unity Fraction

Volume

X-axis

X-coordinate

Y-axis

Y-coordinate

STANDARDS:

STANDARDS

STATE: PA Core Standards (2014)

CC.2.4.5.A.4 (Advanced)	Solve problems involving computation of fractions using information provided in a line plot.
CC.2.4.5.A.5	Apply concepts of volume to solve problems and relate

(Advanced)	volume to multiplication and to addition.
STATE: PA Core Anchors and Eligible Content (2014)	
M05.D-M.2.1.1 (Advanced)	Solve problems involving computation of fractions by using information presented in line plots.
M05.D-M.3.1.1 (Advanced)	Apply the formulas V = l × w × h and V = B × 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. Formulas will be provided.
M05.D-M.3.1.2 (Advanced)	Find volumes of solid figures composed of two non-overlapping right rectangular prisms. Alternate Eligible Content Code M05DM3.1.2a: Find volume by using filling or multiplication

(* standards consolidated from Topic level)

Topic: Lesson 115- Estimate Volume (E)

Core Lesson Description: Estimate Volume

Core Lesson Student Learning Objectives: Students will be able to estimate the volume of a rectangular prism.

Core Lesson Essential Questions: How can you use an everyday object to estimate the volume of a rectangular prism? (E)

Core Lesson Materials: Go Math Chapter 11 Lesson 7

STANDARDS

STATE: PA Core Standards (2014)	
CC.2.4.5.A.4 (Advanced)	Solve problems involving computation of fractions using information provided in a line plot.
CC.2.4.5.A.5 (Advanced)	Apply concepts of volume to solve problems and relate volume to multiplication and to addition.
STATE: PA Core Anchors and Eligible Content (2014)	
M05.D-M.2.1.1 (Advanced)	Solve problems involving computation of fractions by using information presented in line plots.
M05.D-M.3.1.1 (Advanced)	Apply the formulas V = l × w × h and V = B × 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. Formulas will be provided.
M05.D-M.3.1.2 (Advanced)	Find volumes of solid figures composed of two non-overlapping right rectangular prisms. Alternate Eligible Content Code M05DM3.1.2a: Find volume by using filling or multiplication

Topic: Lesson 117- Apply Volume Formulas (E)

Core Lesson Description: Apply Volume Formulas

Core Lesson Student Learning Objectives: Students will be able to use a formula to find the volume of a rectangular prism.

Core Lesson

Essential Questions:	How can you use a formula to find the volume of a rectangular prism? (E)
Core Lesson Materials:	Go Math Chapter 11 Lesson 9

Topic: Lesson 119- Find Volume of Composed Figures (E)

Core Lesson Description:	Find Volume of Composed Figures
Core Lesson Student Learning Objectives:	Students will be able to find the volume of combined rectangular prisms.
Core Lesson Essential Questions:	How can you find the volume of rectangular prisms that are combined? (E)
Core Lesson Materials:	Go Math Chapter 11 Lesson 11