

Curriculum Map: Sixth Grade Math 2022-2023

Course: Math6 Sub-topic: General

Grade(s): 6

Course Description: This is a full-year Math Course that covers PA Common Core Standards for Sixth Grade students. Students will begin the year with Numbers and Operations where they will identify positive and negative numbers as well as prime and composite numbers and use that understanding to compute fractions, decimals, ratios, and percent. Then, students will go into Algebra where they will review expressions and move into solving equations and identifying dependent and independent variables to be able to graph linear equations. Following Algebra, students begin graphing coordinates, identifying area of two-dimensional and three-dimensional figures. Finally, students work on Statistics with Measures of Central Tendency and Measures of Variability to identify when it is appropriate to use the measure of Mean, Median, and Mode to represent entire sets of data.

Course Textbooks, Workbooks, Materials Citations: Text: enVision Mathematics
Publisher: Savvas Learning Company
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Unit: Numbers and Operations

Timeline: Week 1 to 15

Unit Description: Numbers and Operations Unit allows students to apply and extend previous understandings of numbers to the system of rational numbers, develop and apply number theory concepts to find common factors and multiples, multiply and divide decimals and fractions, and understand ratio concepts and use ratio reasoning to solve problems.

Unit Essential Questions: How is mathematics used to quantify, compare, represent and model numbers?
How are relationships represented mathematically?
How can patterns be used to describe relationships in mathematical situations?
What does it mean to estimate or analyze numerical quantities?

Unit Big Ideas: Mathematical relationships among numbers can be represented, compared, and communicated.

Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.

Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.

Patterns exhibit relationships that can be extended, described, and generalized.

Unit Materials: Student Textbook (enVision: Math in Focus Volume 1)

Student Textbook Practice Pages

Student Additional Practice Pages

Teacher Made Worksheets

Teacher Made Notes

Teacher Made Google Forms

Unit Add/ Subtract/Multiply/ Divide Decimals and Fractions:

Assignments:

Add/Subtract/Multiply Decimals

Textbook: Pg. 10-12

Assignments: Practice Page 11-12

Multiply Decimals: Teacher Made Worksheet: Graded/ Additional Practice 1-1

Divide Decimals

Textbook: Pg.15-20

Assignments: Practice page 19-20/ Additional Practice 1-2: Graded

Assessment: Add/Subtract/Multiply/ Divide Decimals

Divide Fractions

Textbook Pg. : 33-50

Assignments: Practice Pages 37-38 (Divide Fractions and Whole Numbers)/ Practice Pages 43-44 (Divide Fractions by Fractions)/ Practice Pages 49-50

Additional Practice 1-4: Graded/ Additional Practice 1-6: Graded

Assessment: Teacher made test (Divide Fractions)

Number Lines/ Integers:

Integers/Opposites/ Number Lines/ Numbers that best represent Expressions

Textbook: Page 70-74

Assignments: Practice Page 73-74/

Teacher Made Packet (Negative Number Lines/Expressions: Graded

Absolute Value

Textbook: 83-86

Assignments: Practice Page 85-86/ Teacher Made worksheet: Graded

Represent Numbers on a Coordinate Plane

Textbook: Pg. 89-94

Assignments: Practice Pages. 93-94/Additional Practice 2-4: Graded/ Teacher Made Coordinate Plane Pkt.: Graded

Find Distance on Coordinate Plane

Textbook: Pg. 99-104

Assignment: Practice Pages 103-104/ Additional Practice 2-5: Graded/ Length of Line Segment Pkt.: Graded

Represent polygons on Coordinate Planes

Textbook: Pg. 105-110

Assignment: Practice Pages 109-110/ Additional Practice 2-6: Graded

Topic 2 Review: Textbook Pages: 111-114

Assessment: Topic Two Test: Teacher Made Test

Prime Factorization/GCF/LCM

Understand and Represent Exponents:

Textbook: Pg. 124-128

Assignments: Teacher made worksheet

Prime Factorization:**Textbook: Page 130**

Assignments: Teacher made worksheets

Common Factors and Multiples:

Textbook: Pg. 130-135

Assignments: Practice pages. 134-135/ Greatest Common Factor Worksheet/Least Common Multiple Worksheet

Order of Operation

Textbook: Pg. 142

Assignment: Teacher made worksheet

Assessment: Teacher made Test

Rates and Ratios**Understand Ratios:**

Textbook: Volume 2: Pg. 268-290

Assignments: Practice Pages. 271-272/ Additional Practice 5-1: Graded/ Practice Pages 277-278/ Additional Practice 5-2/ Practice Pages 283-284/ Additional Practice 5-3/ Practice Pages 289-290/ Additional Practice 5-4

Rates and Unit Rates:

Textbook: 294-338

Assignments: Practice Pages 297-298/ Additional Practice 5-5/ Practice Pages 303-304/ Additional Practice 5-6/Practice Pages 309-310/ Additional Practice 5-7/ Practice Pages 319-320/ Additional Practice 5-8/ Practice Pages 325-326/ Additional Practice 5-9

Assessment: Topic Review: 334-338/ Teacher made test

Percent:

Textbook: Pg. 349-384

Assignment: Practice Pages 351-352, 357-358, 363-364, 371-372, 377-378, 383-384

Additional Practice Pages: 6-1, 6-2, 6-3, 6-4, 6-5, 6-6: Graded

Topic Review: Pg. 389-392: Graded

Assessment: Teacher Made Test

Unit Key Terminology & Definitions:

Absolute value

Composite Number

Distributive property

Exponent

Greatest Common Factor

Integer

Least Common Multiple

Prime Factorization

Reciprocal

Unit Notes: Morning Work/Math Remediation will be used on Google Forms. Review and Remediation questions are loaded onto google forms.

STANDARDS: STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-N.1.1.1](#)
(Advanced)

Interpret and compute quotients of fractions (including mixed numbers), and solve word problems involving division of fractions by fractions. Example 1: Given a story context for $(2/3) \div (3/4)$, explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = (a/b) * (d/c) = ad/bc$.) Example 2: How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi? Example 3: How many $2\ 1/4$ -foot pieces can be cut from a $15\ 1/2$ -foot board?

[M06.A-N.2.1.1](#)
(Advanced)

Solve problems involving operations (+, -, x, and with whole numbers, decimals (through thousandths), straight computation, or word problems.

Alternate Eligible Content Code M06AN2.1.1a: Solve a problem using up to 3-digit whole numbers and any of the four operations

[M06.A-N.2.2.1](#)
(Advanced)

Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12.

Alternate Eligible Content Code M06AN2.2.1a: Identify multiples for numbers 5, 10, 25, or 100

[M06.A-N.2.2.2](#)
(Advanced)

Apply the distributive property to express a sum of two whole numbers, 1 through 100, with a common factor as a multiple of a sum of two whole numbers with no common factor. Example: Express $36 + 8$ as $4(9 + 2)$.

[M06.A-N.3.1.1](#)
(Advanced)

Represent quantities in real-world contexts using positive and negative numbers, explaining the meaning of 0 in each situation (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge).

Alternate Eligible Content Code M06AN3.1.1a: Identify a specific integer in a real-world context

[M06.A-N.3.1.2](#)
(Advanced)

Determine the opposite of a number and recognize that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$; 0 is its own opposite).

Alternate Eligible Content Code M06AN3.1.2a: Identify the opposite of a number on the number line

[M06.A-N.3.1.3](#)
(Advanced)

Locate and plot integers and other rational numbers on a horizontal or vertical number line; locate and plot pairs of integers and other rational numbers on a coordinate plane.

Alternate Eligible Content Code M06AN3.1.3a: Locate positive and negative numbers on the number line

[M06.A-N.3.2.1](#)
(Advanced)

Write, interpret, and explain statements of order for rational numbers in real-world contexts. Example: Write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C .

[M06.A-N.3.2.2](#)
(Advanced)

Interpret the absolute value of a rational number as its distance from 0 on the number line and as a magnitude for a positive or negative quantity in a real-world situation. Example: For an account balance of -30 dollars, write $|-30| = 30$ to describe the size of the debt in dollars, and recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.

[M06.A-N.3.2.3](#)
(Advanced)

Solve real-world and mathematical problems by plotting points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Alternate Eligible Content Code M06AN3.2.3a: Identify points in all four quadrants of the coordinate plane

[M06.A-R.1.1.1](#)
(Advanced)

Use ratio language and notation (such as 3 to 4, 3:4, $3/4$) to describe a ratio relationship between two quantities. Example 1: "The ratio of girls to boys in a math class is 2:3"

because for every 2 girls there are 3 boys." Example 2: "For every five votes candidate A received, candidate B received four votes."

[M06.A-R.1.1.2](#)
(Advanced)

Find the unit rate a/b associated with a ratio $a:b$ (with $b \neq 0$) and use rate language in the context of a ratio relationship. Example 1: "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar." Example 2: "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."

[M06.A-R.1.1.3](#)
(Advanced)

Alternate Eligible Content Code M06AR1.1.2a: Identify the ratio that matches a given statement and/or representation
Construct tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and/or plot the pairs of values on the coordinate plane. Use tables to compare ratios.

[M06.A-R.1.1.4](#)
(Advanced)

Solve unit rate problems including those involving unit pricing and constant speed. Example: If it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

[M06.A-R.1.1.5](#)
(Advanced)

Alternate Eligible Content Code M06AR1.1.4a: Solve a 1-step real-world problem given the unit rate
Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $30/100$ times the quantity); solve problems involving finding the whole, given a part and the percentage.

Alternate Eligible Content Code M06AR1.1.5a: Calculate a percent of a quantity as a rate per 100

(* standards consolidated from Topic level)

Topic: Positive Numbers and the Number Line

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-N.3.1.1 \(Advanced\)](#) Represent quantities in real-world contexts using positive and negative numbers, explaining the meaning of 0 in each situation (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge).

Alternate Eligible Content Code M06AN3.1.1a: Identify a specific integer in a real-world context

[M06.A-N.3.1.3 \(Advanced\)](#) Locate and plot integers and other rational numbers on a horizontal or vertical number line; locate and plot pairs of integers and other rational numbers on a coordinate plane.

Alternate Eligible Content Code M06AN3.1.3a: Locate positive and negative numbers on the number line

[M06.A-N.3.2.1 \(Advanced\)](#) Write, interpret, and explain statements of order for rational numbers in real-world contexts. Example: Write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C .

Topic: Negative Numbers and the Number Line

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-N.3.1.1 \(Advanced\)](#) Represent quantities in real-world contexts using positive and negative numbers, explaining the meaning of 0 in each situation (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge).

Alternate Eligible Content Code M06AN3.1.1a: Identify a specific integer in a real-world context

[M06.A-N.3.1.2 \(Advanced\)](#) Determine the opposite of a number and recognize that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$; 0 is its own opposite).

Alternate Eligible Content Code M06AN3.1.2a: Identify the opposite of a number on

the number line

[M06.A-N.3.1.3 \(Advanced\)](#) Locate and plot integers and other rational numbers on a horizontal or vertical number line; locate and plot pairs of integers and other rational numbers on a coordinate plane.

Alternate Eligible Content Code M06AN3.1.3a: Locate positive and negative numbers on the number line

[M06.A-N.3.2.1 \(Advanced\)](#) Write, interpret, and explain statements of order for rational numbers in real-world contexts. Example: Write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C .

Topic: Absolute Value

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-N.3.2.2 \(Advanced\)](#) Interpret the absolute value of a rational number as its distance from 0 on the number line and as a magnitude for a positive or negative quantity in a real-world situation. Example: For an account balance of - 30 dollars, write $|-30| = 30$ to describe the size of the debt in dollars, and recognize that an account balance less than - 30 dollars represents a debt greater than 30 dollars.

[M06.A-N.3.2.3 \(Advanced\)](#) Solve real-world and mathematical problems by plotting points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Alternate Eligible Content Code M06AN3.2.3a: Identify points in all four quadrants of the coordinate plane

Topic: Common Factors and Multiples

Minutes for Topic: 240

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-N.2.2.1 \(Advanced\)](#) Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12.

Alternate Eligible Content Code M06AN2.2.1a: Identify multiples for numbers 5, 10, 25, or 100

[M06.A-N.2.2.2 \(Advanced\)](#) Apply the distributive property to express a sum of two whole numbers, 1 through 100, with a common factor as a multiple of a sum of two whole numbers with no common factor. Example: Express $36 + 8$ as $4(9 + 2)$.

Topic: Prime Factorization

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-N.2.2.1 \(Advanced\)](#) Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12.

Alternate Eligible Content Code M06AN2.2.1a: Identify multiples for numbers 5, 10, 25, or 100

[M06.A-N.2.2.2 \(Advanced\)](#) Apply the distributive property to express a sum of two whole numbers, 1 through 100, with a common factor as a multiple of a sum of two whole numbers with no common factor. Example: Express $36 + 8$ as $4(9 + 2)$.

Topic: Multiply/Divide Fractions

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-N.1.1.1 \(Advanced\)](#) Interpret and compute quotients of fractions (including mixed numbers), and solve word problems involving division of fractions by fractions. Example 1: Given a story context for $(2/3) \div (3/4)$, explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = (a/b) * (d/c) = ad/bc$.) Example 2: How wide is a

rectangular strip of land with length $\frac{3}{4}$ mi and area $\frac{1}{2}$ square mi? Example 3:
How many $2\frac{1}{4}$ -foot pieces can be cut from a $15\frac{1}{2}$ -foot board?

Topic: Multiply/Divide Decimals

Minutes for Topic: 180

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-N.2.1.1 \(Advanced\)](#) Solve problems involving operations (+, -, x, and with whole numbers, decimals (through thousandths), straight computation, or word problems.

Alternate Eligible Content Code M06AN2.1.1a: Solve a problem using up to 3-digit whole numbers and any of the four operations

Topic: Ratios

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-R.1.1.1 \(Advanced\)](#) Use ratio language and notation (such as 3 to 4, 3:4, $\frac{3}{4}$) to describe a ratio relationship between two quantities. Example 1: "The ratio of girls to boys in a math class is 2:3 because for every 2 girls there are 3 boys." Example 2: "For every five votes candidate A received, candidate B received four votes."

[M06.A-R.1.1.3 \(Advanced\)](#) Construct tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and/or plot the pairs of values on the coordinate plane. Use tables to compare ratios.

Topic: Rates/Unit Rates

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-R.1.1.2 \(Advanced\)](#) Find the unit rate a/b associated with a ratio $a:b$ (with $b \neq 0$) and use rate language in the context of a ratio relationship. Example 1: "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $\frac{3}{4}$ cup of flour for each cup of sugar." Example 2: "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."

Alternate Eligible Content Code M06AR1.1.2a: Identify the ratio that matches a given statement and/or representation

[M06.A-R.1.1.3 \(Advanced\)](#) Construct tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and/or plot the pairs of values on the coordinate plane. Use tables to compare ratios.

[M06.A-R.1.1.4 \(Advanced\)](#) Solve unit rate problems including those involving unit pricing and constant speed. Example: If it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

Alternate Eligible Content Code M06AR1.1.4a: Solve a 1-step real-world problem given the unit rate

Topic: Percent

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-R.1.1.5 \(Advanced\)](#) Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $\frac{30}{100}$ times the quantity); solve problems involving finding the whole, given a part and the percentage.

Alternate Eligible Content Code M06AR1.1.5a: Calculate a percent of a quantity as a rate per 100

Topic: Percent of Quantity/Change

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.A-R.1.1.5 \(Advanced\)](#) Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percentage.

Alternate Eligible Content Code M06AR1.1.5a: Calculate a percent of a quantity as a rate per 100

Unit: Algebraic Concepts

Timeline: Week 16 to 23

Unit Description: In this unit, students will apply and extend previous understandings of arithmetic to algebraic expressions, understand the process of solving a one-variable equation or inequality and apply to real-world and mathematical problems, and represent and analyze quantitative relationships between dependent and independent variables.

Unit Essential Questions:

- How is mathematics used to quantify, compare, represent, and model numbers?
- How are relationships represented mathematically?
- How can mathematics support effective communication?
- How can recognizing repetition or regularity assist in solving problems more efficiently?
- How can expressions, equations and inequalities be used to quantify, solve, model, and/or analyze mathematical situations?
- How can recognizing repetition or regularity assist in solving problems more efficiently?
- How can data be organized and represented to provide insight into the relationship between quantities?

Unit Big Ideas:

- Mathematical relationships among numbers can be represented, compared, and communicated.
- Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.
- Patterns exhibit relationships that can be extended, described, and generalized.
- Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions

Unit Materials: Math in Focus Textbook (Volume A & B)

Reteach and Extra Practice Worksheets

Teacher Made Notes

Teacher Made Google Forms

Unit Assignments: Algebraic Expressions

Textbook: Pg. 221-255

Evaluate and Simplify Expressions:

Assignments:

Reteach 181-184

Extra Practice 70-71

Textbook Pg. 228

Pg.244-245: Even

Extra Practice 72-73

R 187-191

EP 74-76

Expand and Factor Expressions:

Textbook Pg.244-245: Even

EP 77-79: Even

Chapter Review: Pg.254-255 (1-20)

Assessment: Teacher Made Test

Algebraic Equations

Textbook VOLUME B: Pg. 5-37

Solve Single/Multi-Step Equations

Assignments:

Textbook Pg. 12

Dependent/ Independent Teacher Made Packets/Worksheets

Linear Equations:

R16-18

EP4-8

Textbook Pg. 20-21

Inequalities:

R27-32

EP 9-11

Apply Equation Skills:

Pg. 33-34 (1-11)

Chapter Review:Pg. 36-37: Even

Assessment: Teacher Made Test

Unit Key Terminology & Definitions:

Algebraic expressions

Coefficient

Dependent variable

Distributive property

Independent variable

Inequality

Linear Equation

Constant

Term

Equivalent

Unit Notes: Morning Work/Math Remediation will be used on Google Forms. Review and Remediation questions are loaded onto google forms.

STANDARDS: **STANDARDS**
STATE: PA Core Anchors and Eligible Content (2014)

M06.B-E.1.1.1 (Advanced)	Write and evaluate numerical expressions involving whole-number exponents.
M06.B-E.1.1.2 (Advanced)	Write algebraic expressions from verbal descriptions. Example: Express the description "five less than twice a number" as $2y - 5$.
M06.B-E.1.1.3 (Advanced)	Identify parts of an expression using mathematical terms (e.g., sum, term, product, factor, quotient, coefficient, quantity). Example: Describe the expression $2(8 + 7)$ as a product of two factors.
M06.B-E.1.1.4 (Advanced)	Evaluate expressions at specific values of their variables, including expressions that arise from formulas used in real-world problems. Example: Evaluate the expression $b^2 - 5$ when $b = 4$.
M06.B-E.1.1.5 (Advanced)	Apply the properties of operations to generate equivalent expressions. Example 1: Apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$. Example 2: Apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$. Example 3: Apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.
M06.B-E.2.1.1 (Advanced)	Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
M06.B-E.2.1.2 (Advanced)	Write algebraic expressions to represent real-world or mathematical problems.
	Alternate Eligible Content Code M06BE2.1.2a: Select an algebraic expression involving addition or subtraction of whole numbers to solve a 1-step real-world problem
M06.B-E.2.1.3 (Advanced)	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q , and x are all non-negative rational numbers.
	Alternate Eligible Content Code M06BE2.1.3a: Use a 1-step algebraic expression to solve a real-world problem involving addition or subtraction of whole numbers
M06.B-E.2.1.4 (Advanced)	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem and/or represent solutions of such inequalities on number lines.
M06.B-E.3.1.1 (Advanced)	Write an equation to express the relationship between the dependent and independent variables. Example: In a problem involving motion at a constant speed of 65 units, write the equation $d = 65t$ to represent the relationship between distance and time.
	Alternate Eligible Content Code M06BE3.1.1a: Identify the relationship between two variables in an equation
M06.B-E.3.1.2 (Advanced)	Analyze the relationship between the dependent and independent variables using graphs and tables and/or relate these to an equation.

(* standards consolidated from Topic level)

Topic: Simplifying/Evaluating Expressions

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

- [M06.B-E.1.1.2](#) (Advanced) Write algebraic expressions from verbal descriptions. Example: Express the description "five less than twice a number" as $2y - 5$.
- [M06.B-E.1.1.3](#) (Advanced) Identify parts of an expression using mathematical terms (e.g., sum, term, product, factor, quotient, coefficient, quantity). Example: Describe the expression $2(8 + 7)$ as a product of two factors.
- [M06.B-E.2.1.2](#) (Advanced) Write algebraic expressions to represent real-world or mathematical problems.
- Alternate Eligible Content Code M06BE2.1.2a: Select an algebraic expression involving addition or subtraction of whole numbers to solve a 1-step real-world problem

Topic:

Topic: Expanding/Factoring Expressions

Minutes for Topic: 180

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.B-E.1.1.5 \(Advanced\)](#) Apply the properties of operations to generate equivalent expressions. Example 1: Apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$. Example 2: Apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$. Example 3: Apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.

Topic: Dependent/Independent Variables

Minutes for Topic: 180

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.B-E.3.1.1 \(Advanced\)](#) Write an equation to express the relationship between the dependent and independent variables. Example: In a problem involving motion at a constant speed of 65 units, write the equation $d = 65t$ to represent the relationship between distance and time.

Alternate Eligible Content Code M06BE3.1.1a: Identify the relationship between two variables in an equation

[M06.B-E.3.1.2 \(Advanced\)](#) Analyze the relationship between the dependent and independent variables using graphs and tables and/or relate these to an equation.

Topic: Linear Equations

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.B-E.1.1.1 \(Advanced\)](#) Write and evaluate numerical expressions involving whole-number exponents.

[M06.B-E.1.1.4 \(Advanced\)](#) Evaluate expressions at specific values of their variables, including expressions that arise from formulas used in real-world problems. Example: Evaluate the expression $b^2 - 5$ when $b = 4$.

[M06.B-E.2.1.1 \(Advanced\)](#) Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

[M06.B-E.2.1.3 \(Advanced\)](#) Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q , and x are all non-negative rational numbers.

Alternate Eligible Content Code M06BE2.1.3a: Use a 1-step algebraic expression to solve a real-world problem involving addition or subtraction of whole numbers

Topic: Solve Inequalities

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.B-E.2.1.4 \(Advanced\)](#) Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem and/or represent solutions of such inequalities on number lines.

Topic: Graph Linear Equations

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.B-E.2.1.4 \(Advanced\)](#) Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem and/or represent solutions of such inequalities on number lines.

[M06.B-E.3.1.1 \(Advanced\)](#) Write an equation to express the relationship between the dependent and

independent variables. Example: In a problem involving motion at a constant speed of 65 units, write the equation $d = 65t$ to represent the relationship between distance and time.

Alternate Eligible Content Code M06BE3.1.1a: Identify the relationship between two variables in an equation

[M06.B-E.3.1.2 \(Advanced\)](#) Analyze the relationship between the dependent and independent variables using graphs and tables and/or relate these to an equation.

Unit: Geometry

Timeline: Week 25 to 30

Unit Description: When learning Geometry in Sixth Grade, students will apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume. Students will create two-dimensional figures and measure the length of line segments on coordinate planes. Students will apply that skill to measure area and volume of regular and irregular polygons. Then, they will use geometric formulas to identify surface area and volume of three-dimensional figures.

Unit Essential Questions: How can recognizing repetition or regularity assist in solving problems more efficiently?

How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems?

How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving?

How can geometric properties and theorems be used to describe, model, and analyze situations?

Unit Big Ideas: Patterns exhibit relationships that can be extended, described, and generalized.

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

Unit Materials: Math In My World Textbook (Volume B)

Reteach and Extra Practice pages

Teacher Made Notes

Teacher Made Google Forms

Unit Assignments: Geometry

Textbook: Pg. 42-71

Coordinate Planes

R 40-44

EP16-20

Lengths of Line Segments

R 48-55

Ep 21-24

Apply Points/Lengths on Coordinate Planes

Textbook Pg. 65-66

Chapter Review: PG. 68-71: Even

Assessment: Teacher Made Test

Area of Triangles/Parallelograms/Trapezoids/Composite Figures

Textbook: Pg. 75-117

R68-72

EP30-36

R76-79

EP37-41

EP 42-44

R88-91

EP45-51

Chapter Review: Textbook PG. 115-117

Assessment: Teacher Made Test

Nets:

TextbookPg. 172-180

EP80-82

Surface Area:

Textbook: 181-202

R133-137

EP83-85

Volume:

EP86-88

Apply Surface Area and Volume:

R147-151

Chapter Review: Pg.210-211 (#1-11)

Assessment: Teacher Made Test

Unit Key Terminology & Definitions: Compound polygon
Irregular Polygon
Surface Area
Congruent
Quartile
axis

Unit Notes: Morning Work/Math Remediation will be used on Google Forms. Review and Remediation questions are loaded onto google forms.

STANDARDS: STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.C-G.1.1.1 \(Advanced\)](#) Determine the area of triangles and special quadrilaterals (i.e., square, rectangle, parallelogram, rhombus, and trapezoid). Formulas will be provided.

Alternate Eligible Content Code M06CG1.1.1a: Find the area of a quadrilateral given the dimensions

[M06.C-G.1.1.2 \(Advanced\)](#) Determine the area of irregular or compound polygons. Example: Find the area of a room in the shape of an irregular polygon by composing and/or decomposing.

[M06.C-G.1.1.3 \(Advanced\)](#) Determine the volume of right rectangular prisms with fractional edge lengths. Formulas will be provided.

	Alternate Eligible Content Code M06CG1.1.3a: Solve a real-world problem involving volume using unit cubes or multiplication
M06.C-G.1.1.4 (Advanced)	Given coordinates for the vertices of a polygon in the plane, use the coordinates to find side lengths and area of the polygon (limited to triangles and special quadrilaterals). Formulas will be provided.
M06.C-G.1.1.5 (Advanced)	Represent three-dimensional figures using nets made of rectangles and triangles.
	Alternate Eligible Content Code M06CG1.1.5a: Classify three-dimensional figures
M06.C-G.1.1.6 (Advanced)	Determine the surface area of triangular and rectangular prisms (including cubes). Formulas will be provided.

(* standards consolidated from Topic level)

Topic: Plot Coordinate Planes

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.C-G.1.1.4 \(Advanced\)](#) Given coordinates for the vertices of a polygon in the plane, use the coordinates to find side lengths and area of the polygon (limited to triangles and special quadrilaterals). Formulas will be provided.

Topic: Lengths of Line Segments

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.C-G.1.1.4 \(Advanced\)](#) Given coordinates for the vertices of a polygon in the plane, use the coordinates to find side lengths and area of the polygon (limited to triangles and special quadrilaterals). Formulas will be provided.

Topic: Nets

Minutes for Topic: 60

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.C-G.1.1.5 \(Advanced\)](#) Represent three-dimensional figures using nets made of rectangles and triangles.

Alternate Eligible Content Code M06CG1.1.5a: Classify three-dimensional figures

Topic: Area/Surface Area of Polygons

Minutes for Topic: 240

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.C-G.1.1.1 \(Advanced\)](#) Determine the area of triangles and special quadrilaterals (i.e., square, rectangle, parallelogram, rhombus, and trapezoid). Formulas will be provided.

Alternate Eligible Content Code M06CG1.1.1a: Find the area of a quadrilateral given the dimensions

[M06.C-G.1.1.2 \(Advanced\)](#) Determine the area of irregular or compound polygons. Example: Find the area of a room in the shape of an irregular polygon by composing and/or decomposing.

[M06.C-G.1.1.6 \(Advanced\)](#) Determine the surface area of triangular and rectangular prisms (including cubes). Formulas will be provided.

Topic: Volume of Prisms

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.C-G.1.1.3 \(Advanced\)](#) Determine the volume of right rectangular prisms with fractional edge lengths. Formulas will be provided.

Alternate Eligible Content Code M06CG1.1.3a: Solve a real-world problem involving volume using unit cubes or multiplication

Unit: Statistics and Probability

Timeline: Week 27 to 36

Unit

Description:

In Statistics, students will demonstrate an understanding of statistical variability by displaying, analyzing, and summarizing distributions. Students will identify accurate measures of center for a set of data. They will calculate Median, Mean, and Mode to find the Measure of Center through data sets, Dot Plots, Histograms, and Box-and-Whisker Plots. Students will identify the Measure of Variability through Mean Absolute Deviation and Interquartile Range.

Unit Essential Questions:

What does it mean to estimate or analyze numerical quantities?

What makes a tool and/or strategy appropriate for a given task?

How can data be organized and represented to provide insight into the relationship between quantities?

How does the type of data influence the choice of display?

How can probability and data analysis be used to make predictions?

Unit Big Ideas: Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.

Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.

Data can be modeled and used to make inferences.

Unit Materials: Math in Focus Textbook Volume B

Reteach and Extra Practice Worksheets

Teacher Made Notes

Teacher Made Google Forms

Unit

Assignments:

Statistics:

Dot Plots:

Textbook: Pg.222-227

Assignments:

Pg.226-227

Histograms

Textbook: Pg. 228-236

Assignments:

R170-180

Textbook PG. 234-236

Mean

Textbook:Pg. 244-250

Assignments:

R181-188

EP 114-116

Mean Absolute Deviation

Teacher Made Worksheets/Notes

Median

Textbook: Pg. 251-257

Assignments:

PG. 256-257

Box-and-Whisker Plot

Teacher Made Worksheets/Notes

Mode:

Textbook: Pg. 258-263

Assignments:

Pg. 262-263 (1-10)

Apply Measure of Center/Variability

Textbook: PG. 264-271

Assignments:

R203-210

Textbook: Pg. 269-271

Chapter Review: Pg. 273-174

Assessment: Teacher Made Test

Unit Key Terminology & Definitions:

Box and whisker plots

Dot plots

Histogram

Interquartile range

Mean

Mean absolute deviation

Quartile

Variability

Unit Notes:

Morning Work/Math Remediation will be used on Google Forms. Review and Remediation questions are loaded onto google forms.

STANDARDS: STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.D-S.1.1.1](#)
(Advanced)

Display numerical data in plots on a number line, including line plots, histograms, and box-and whisker plots.

[M06.D-S.1.1.2](#)
(Advanced)

Determine quantitative measures of center (e.g., median, mean, mode) and variability (e.g., range, inter-quartile range, mean absolute deviation).

[M06.D-S.1.1.3](#)
(Advanced)

Alternate Eligible Content Code M06DS1.1.2a: Identify measures of central tendency (mean, median, mode)

Describe any overall pattern and any deviations from the overall pattern with reference to the context in which the data were gathered.

Alternate Eligible Content Code M06DS1.1.3a: Compare

[M06.D-S.1.1.4 \(Advanced\)](#) points in a line plot, histogram, or on a number line
Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

(* standards consolidated from Topic level)

Topic: Range, Mean, Mode, Median

Minutes for Topic: 180

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.D-S.1.1.2 \(Advanced\)](#) Determine quantitative measures of center (e.g., median, mean, mode) and variability (e.g., range, inter-quartile range, mean absolute deviation).

Alternate Eligible Content Code M06DS1.1.2a: Identify measures of central tendency (mean, median, mode)

Topic: Dot Plots

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.D-S.1.1.1 \(Advanced\)](#) Display numerical data in plots on a number line, including line plots, histograms, and box-and whisker plots.

Topic: Histograms

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.D-S.1.1.1 \(Advanced\)](#) Display numerical data in plots on a number line, including line plots, histograms, and box-and whisker plots.

[M06.D-S.1.1.3 \(Advanced\)](#) Describe any overall pattern and any deviations from the overall pattern with reference to the context in which the data were gathered.

Alternate Eligible Content Code M06DS1.1.3a: Compare points in a line plot, histogram, or on a number line

[M06.D-S.1.1.4 \(Advanced\)](#) Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Topic: Box-and-Whisker Plots

Minutes for Topic: 180

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.D-S.1.1.1 \(Advanced\)](#) Display numerical data in plots on a number line, including line plots, histograms, and box-and whisker plots.

[M06.D-S.1.1.2 \(Advanced\)](#) Determine quantitative measures of center (e.g., median, mean, mode) and variability (e.g., range, inter-quartile range, mean absolute deviation).

Alternate Eligible Content Code M06DS1.1.2a: Identify measures of central tendency (mean, median, mode)

[M06.D-S.1.1.3 \(Advanced\)](#) Describe any overall pattern and any deviations from the overall pattern with reference to the context in which the data were gathered.

Alternate Eligible Content Code M06DS1.1.3a: Compare points in a line plot, histogram, or on a number line

[M06.D-S.1.1.4 \(Advanced\)](#) Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Topic: Measurement of Central Tendency

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.D-S.1.1.2 \(Advanced\)](#) Determine quantitative measures of center (e.g., median, mean, mode) and variability (e.g., range, inter-quartile range, mean absolute deviation).

Alternate Eligible Content Code M06DS1.1.2a: Identify measures of central tendency (mean, median, mode)

[M06.D-S.1.1.4 \(Advanced\)](#) Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Topic: Variability

Minutes for Topic: 180

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.D-S.1.1.2 \(Advanced\)](#) Determine quantitative measures of center (e.g., median, mean, mode) and variability (e.g., range, inter-quartile range, mean absolute deviation).

Alternate Eligible Content Code M06DS1.1.2a: Identify measures of central tendency (mean, median, mode)

[M06.D-S.1.1.4 \(Advanced\)](#) Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Topic: Mean Absolute Deviation

Minutes for Topic: 120

STANDARDS

STATE: PA Core Anchors and Eligible Content (2014)

[M06.D-S.1.1.2 \(Advanced\)](#) Determine quantitative measures of center (e.g., median, mean, mode) and variability (e.g., range, inter-quartile range, mean absolute deviation).

Alternate Eligible Content Code M06DS1.1.2a: Identify measures of central tendency (mean, median, mode)

[M06.D-S.1.1.4 \(Advanced\)](#) Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.