

Curriculum Map: 4th grade math 2020-2021

Course: Math4 Sub-topic: General

Grade(s): 4

Course enVision Math
Textbooks, Workbooks, Materials Citations:

Unit: Place Value of Whole Numbers

Timeline: Week 1 to 2

Unit Description: Students extend their learning to 5-digit numbers. Place value concepts are reviewed and extended to the ten thousands place. Students will compare numbers to order a given set of numbers.

Unit Essential Questions: How is mathematics used to quantify, compare, represent, and model numbers?

Unit Big Ideas: Read, compare, and order numbers according to the place value of the digits.

Unit Materials: textbook
place value chart
place value chips
number cards
bills
recording sheet

Unit Assignments: Independent practice
reteach
Additional practice

Unit Key Terminology & Definitions: Acute Angle
Angle
Decimal
Decimal Fraction
Equivalence
Factor
Line
Line of symmetry
Line Segment
Mixed Number
Multiple
Obtuse
Triangle
Point
Ray
Right Angle
Symmetry
Unit Fraction
Weight

STANDARDS: STANDARDS

STATE: PA Core Standards (2014)

CC.2.1.4.B.1 (Advanced)	Apply place-value concepts to show an understanding of multi-digit whole numbers.
CC.2.1.4.B.2 (Advanced)	Use place-value understanding and properties of operations to perform multi-digit arithmetic.
CC.2.1.4.C.1 (Advanced)	Extend the understanding of fractions to show equivalence and ordering.
CC.2.1.4.C.2 (Advanced)	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
CC.2.1.4.C.3 (Advanced)	Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

(* standards consolidated from Topic level)

Topic: Numbers to 100,000

Minutes for Topic: 55

STANDARDS

STATE: PA Core Standards (2014)

CC.2.1.4.B.1 (Advanced)	Apply place-value concepts to show an understanding of multi-digit whole numbers.
CC.2.1.4.B.2 (Advanced)	Use place-value understanding and properties of operations to perform multi-digit arithmetic.
CC.2.1.4.C.1 (Advanced)	Extend the understanding of fractions to show equivalence and ordering.
CC.2.1.4.C.2 (Advanced)	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
CC.2.1.4.C.3 (Advanced)	Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

Topic: Comparing Numbers to 100,000

Minutes for Topic: 88

STANDARDS

STATE: PA Core Standards (2014)

CC.2.1.4.B.1 (Advanced)	Apply place-value concepts to show an understanding of multi-digit whole numbers.
CC.2.1.4.B.2 (Advanced)	Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Unit: Estimation and Number Theory

Timeline: Week 3 to 4

Unit**Description:** Introduction to factors, multiples, least common multiples, and greatest common factors.**Unit Essential Questions:**

How is mathematics used to quantify, compare, represent, and model numbers?

Unit Big Ideas: Finding factors and multiples of numbers and using them to estimate products and quotients.**Unit Materials:** Textbook

prime number table

Unit**Assignments:**

Independent practice

reteach

Additional practice

Unit Key estimate
Terminology & Definitions: reasonable
front-end estimation
rounding
product
quotient
factor
common factor
greatest common factor
prime number
composite number
whole number
multiple
common multiple
least common multiple
consecutive whole number

STANDARDS: STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.1 \(Advanced\)](#) Apply place-value concepts to show an understanding of multi-digit whole numbers.
[CC.2.1.4.B.2 \(Advanced\)](#) Use place-value understanding and properties of operations to perform multi-digit arithmetic.
[CC.2.2.4.A.2 \(Advanced\)](#) Develop and/or apply number theory concepts to find factors and multiples.

(* standards consolidated from Topic level)

Topic: Estimation

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.1 \(Advanced\)](#) Apply place-value concepts to show an understanding of multi-digit whole numbers.
[CC.2.1.4.B.2 \(Advanced\)](#) Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Topic: Factors

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.2.4.A.2 \(Advanced\)](#) Develop and/or apply number theory concepts to find factors and multiples.

Topic: Multiples

Minutes for Topic: 165

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.2.4.A.2 \(Advanced\)](#) Develop and/or apply number theory concepts to find factors and multiples.

Unit: Whole Number Multiplication and Division

Timeline: Week 5 to 8

Unit Description: Multiplying and dividing numbers with or without regrouping. Multiply and divide by using vertical form.

Unit Essential Questions: How is place value use to multiply and divide multi-digit numbers?
How can estimation be used to check for reasonable answers?

Unit Big Ideas: Using place value to multiply and divide multi-digit numbers.

Unit Materials: Textbook

base 10 blocks

place value chips and chart

Unit Assignments: Independent practice

reteach

Additional practice

Unit Key Terminology & Definitions: round
estimate
product
regroup
quotient
remainder

STANDARDS: STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.1 \(Advanced\)](#) Apply place-value concepts to show an understanding of multi-digit whole numbers.

[CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.

[CC.2.2.4.A.2 \(Advanced\)](#) Develop and/or apply number theory concepts to find factors and multiples.

[CC.2.4.4.A.1 \(Advanced\)](#) Solve problems involving measurement and conversions from a larger unit to a smaller unit.

(* standards consolidated from Topic level)

Topic: Multiplying by a 1 digit number

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.1 \(Advanced\)](#) Apply place-value concepts to show an understanding of multi-digit whole numbers.

[CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.

Topic: Multiplying by a 2 digit number

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.1 \(Advanced\)](#) Apply place-value concepts to show an understanding of multi-digit whole numbers.

[CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.

[CC.2.2.4.A.2 \(Advanced\)](#) Develop and/or apply number theory concepts to find factors and multiples.

Topic: Modeling division with regrouping

Minutes for Topic: 165

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.

[CC.2.2.4.A.2 \(Advanced\)](#) Develop and/or apply number theory concepts to find factors and multiples.

[CC.2.4.4.A.1 \(Advanced\)](#) Solve problems involving measurement and conversions from a larger unit to a smaller unit.

Topic: Dividing by a 1-digit number

Minutes for Topic: 165

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.4.4.A.1 \(Advanced\)](#) Solve problems involving measurement and conversions from a larger unit to a smaller unit.

Topic: Real-World problems: Multiplication and Division

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.4.4.A.1 \(Advanced\)](#) Solve problems involving measurement and conversions from a larger unit to a smaller unit.

Unit: Table and Line Graphs

Timeline: Week 9 to 10

Unit

Comparing, analyzing, and classifying patterns and trends. Introduction to line graphs and

Description:

learn that they represent functional relationships, or relationships in which each number on the horizontal axis can be paired with only one number shown on the vertical axis.

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: Showing and analyzing data in graphs and tables.

Unit Materials: textbook

tally chart

grid paper

clock

thermometer

Unit

Assignments:

Independent practice

reteach

Additional practice

Unit Key

Terminology & Definitions:

data

table

tally chart
row
column
intersection
line graph
horizontal axis
vertical axis

STANDARDS: STANDARDS

STATE: PA Core Standards (2014)

CC.2.2.4.A.2 (Advanced)	Develop and/or apply number theory concepts to find factors and multiples.
CC.2.2.4.A.4 (Advanced)	Generate and analyze patterns using one rule.
CC.2.3.4.A.2 (Advanced)	Classify two-dimensional figures by properties of their lines and angles.
CC.2.4.4.A.2 (Advanced)	Translate information from one type of data display to another.
CC.2.4.4.A.4 (Advanced)	Represent and interpret data involving fractions using information provided in a line plot.

(* standards consolidated from Topic level)

Topic: Making and Interpreting Tables

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

CC.2.2.4.A.4 (Advanced)	Generate and analyze patterns using one rule.
CC.2.4.4.A.2 (Advanced)	Translate information from one type of data display to another.

Topic: Using a Table

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

CC.2.2.4.A.2 (Advanced)	Develop and/or apply number theory concepts to find factors and multiples.
CC.2.4.4.A.4 (Advanced)	Represent and interpret data involving fractions using information provided in a line plot.

Topic: Line graphs

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

CC.2.2.4.A.4 (Advanced)	Generate and analyze patterns using one rule.
CC.2.3.4.A.2 (Advanced)	Classify two-dimensional figures by properties of their lines and angles.

Unit: Data and Probability

Timeline: Week 11 to 13

Unit

Description: Using different tools to analyze data, such as, average, median, and probability.

Unit Essential What does it mean to estimate or analyze numerical quantities?

Questions:

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

Unit Big Ideas: Developing students' skills in analyzing data.

Unit Materials: Textbook

spinner/circle

connecting tubes

counters

blank line plot

Unit Assignments: Independent practice

reteach

Additional practice

Unit Key Terminology & Definitions:

average

median

mode

range

line plot

stem and plot leaf

outlier

outcome

certain

more likely

equally likely

less likely

impossible

favorable outcome

probability

STANDARDS: STANDARDS

STATE: PA Core Standards (2014)

[CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.

[CC.2.2.4.A.2 \(Advanced\)](#) Develop and/or apply number theory concepts to find factors and multiples.

[CC.2.4.4.A.2 \(Advanced\)](#) Translate information from one type of data display to another.

[CC.2.4.4.A.4](#) Represent and interpret data involving fractions using

[\(Advanced\)](#) information provided in a line plot.

(* standards consolidated from Topic level)

Topic: Average

Minutes for Topic: 165

STANDARDS

STATE: PA Core Standards (2014)

- [CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.
[CC.2.4.4.A.2 \(Advanced\)](#) Translate information from one type of data display to another.

Topic: Median, Mode and Range

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

- [CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.
[CC.2.4.4.A.2 \(Advanced\)](#) Develop and/or apply number theory concepts to find factors and multiples.

Topic: Stem - and - Leaf plots

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

- [CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.
[CC.2.4.4.A.2 \(Advanced\)](#) Translate information from one type of data display to another.
[CC.2.4.4.A.4 \(Advanced\)](#) Represent and interpret data involving fractions using information provided in a line plot.

Topic: Outcomes

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

- [CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.
[CC.2.4.4.A.2 \(Advanced\)](#) Develop and/or apply number theory concepts to find factors and multiples.

Topic: Probability as a fraction

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

- [CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.
[CC.2.4.4.A.2 \(Advanced\)](#) Translate information from one type of data display to another.

Topic: Real-World problems: Data and probability

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

- [CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.
[CC.2.4.4.A.2 \(Advanced\)](#) Develop and/or apply number theory concepts to find factors and multiples.

Unit: Fractions and Mixed Numbers

Timeline: Week 14 to 16

Unit Adding and subtracting like and unlike fractions with and without renaming. Introduction to the concept of fractions of a set, and how to apply this knowledge to solve real-world

Description:

problems.

Unit Essential Questions: How is mathematics used to quantify, compare, represent, and model numbers?

How can mathematics support effective communication?

How are relationships represented mathematically?

What does it mean to estimate or analyze numerical quantities?

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

Unit Big Ideas: Naming wholes and parts of a whole using fractions and mixed numbers, and adding and subtracting fractions and mixed numbers.

Unit Materials: Textbook

connecting cubes

fraction circles

paper strips

fraction bar models

Unit Assignments: Independent practice

reteach

Additional practice

Unit Key Terminology & Definitions: numerator

denominator

equivalent fraction

unlike fraction mixed number

simplest form

improper fraction

STANDARDS: STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.2 \(Advanced\)](#) Use place-value understanding and properties of operations to perform multi-digit arithmetic.

[CC.2.1.4.C.2 \(Advanced\)](#) Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

(* standards consolidated from Topic level)

Topic: Adding fractions

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.2 \(Advanced\)](#) Use place-value understanding and properties of operations to perform multi-digit arithmetic.

[CC.2.1.4.C.2 \(Advanced\)](#) Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Topic: Subtracting fractions

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.2 \(Advanced\)](#)

Use place-value understanding and properties of operations to perform multi-digit arithmetic.

[CC.2.1.4.C.2 \(Advanced\)](#)

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Topic: Mixed numbers

Minutes for Topic: 165

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.2 \(Advanced\)](#)

Use place-value understanding and properties of operations to perform multi-digit arithmetic.

[CC.2.1.4.C.2 \(Advanced\)](#)

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Topic: Improper fractions

Minutes for Topic: 165

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.2 \(Advanced\)](#)

Use place-value understanding and properties of operations to perform multi-digit arithmetic.

[CC.2.1.4.C.2 \(Advanced\)](#)

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Topic: Renaming Improper fractions and mixed numbers

Minutes for Topic: 165

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.2 \(Advanced\)](#)

Use place-value understanding and properties of operations to perform multi-digit arithmetic.

[CC.2.1.4.C.2 \(Advanced\)](#)

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Topic: Renaming whole numbers when adding and subtracting fractions

Minutes for Topic: 165

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.2 \(Advanced\)](#)

Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Topic: Fraction of a set

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.2 \(Advanced\)](#)

Use place-value understanding and properties of operations to perform multi-digit arithmetic.

[CC.2.1.4.C.2 \(Advanced\)](#)

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Topic: Real-World problems: Fractions

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.B.2 \(Advanced\)](#) Use place-value understanding and properties of operations to perform multi-digit arithmetic.

[CC.2.1.4.C.2 \(Advanced\)](#) Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Unit: Decimals

Timeline: Week 17 to 19

Unit

Description: Recognizing, comparing, and rounding decimals in tenths and hundredths.

Unit Essential Questions: How is mathematics used to quantify, compare, represent, and model numbers?

How can mathematics support effective communication?

How are relationships represented mathematically?

What does it mean to estimate or analyze numerical quantities?

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

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.

Unit Materials: textbook

decimal bar

decimal cards

fraction cards

ruler

measuring tape

recording sheet

place value chart

place value chips

Unit

Assignments:

Independent practice

reteach

Additional practice

Unit Key

Terminology & Definitions:

tyenth

deciaml form

deciaml point

expanded form
hundredth
placeholder zero
more than
less than
greater than
least
greatest
order
round
equivalent fraction

STANDARDS: STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.C.3 \(Advanced\)](#) Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

(* standards consolidated from Topic level)

Topic: Understanding tenths

Minutes for Topic: 55

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.C.3 \(Advanced\)](#) Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

Topic: Understanding hundredths

Minutes for Topic: 55

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.C.3 \(Advanced\)](#) Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

Topic: Comparing decimals

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.C.3 \(Advanced\)](#) Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

Topic: Rounding decimals

Minutes for Topic: 165

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.C.3 \(Advanced\)](#) Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

Topic: Fractions and decimals

Minutes for Topic: 165

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.C.3 \(Advanced\)](#) Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

Unit: Adding and Subtracting Decimals

Timeline: Week 20 to 21

Unit Description: Adding and subtracting decimals up to two decimal places, being cautious of lining up the decimal points when writing the problem vertically.

Unit Essential Questions: How to add and subtract decimals by using the same algorithms as whole numbers.

Unit Big Ideas: Adding and subtracting decimals.

Unit Materials: unit cubes

ruler

decimal squares

money

die

Unit Assignments: Independent practice

reteach

Additional practice

STANDARDS: STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.C.3 \(Advanced\)](#) Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

(* standards consolidated from Topic level)

Topic: Adding decimals

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.C.3 \(Advanced\)](#) Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

Topic: Subtracting decimals

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.C.3 \(Advanced\)](#) Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

Topic: Real-world problems: Decimals

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.1.4.C.3 \(Advanced\)](#) Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).

Unit: Angles

Timeline: Week 22 to 24

Unit Description: Angles can be seen everywhere around. Angles are formed when two rays or sides of a figure meet. Learn how to estimate angle measures and measure angles with a protractor. Introduction to the degree symbol, how to draw an angle to 180 degrees using a protractor.

Unit Essential Questions: How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving?

How do I estimate and measure an angle up to 180 degrees?

How do I use a protractor?

Unit Big Ideas: Understanding that angles can be seen and measured when two rays or sides of a shape meet.

Unit Materials: angle strips
textbook
protractor
fastener
paper strips

Unit Assignments: Independent practice
reteach
Additional practice

Unit Key Terminology & Definitions: ray
vertex
protractor
degree
inner scale
outer scale
acute angle
obtuse angle
straight angle
turn

STANDARDS: STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.1 \(Advanced\)](#) Draw lines and angles and identify these in two-dimensional figures.

[CC.2.3.4.A.2 \(Advanced\)](#) Classify two-dimensional figures by properties of their lines and angles.

(* standards consolidated from Topic level)

Topic: Understanding and measuring angles

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.1 \(Advanced\)](#) Draw lines and angles and identify these in two-dimensional figures.

[CC.2.3.4.A.2 \(Advanced\)](#) Classify two-dimensional figures by properties of their lines and angles.

Topic: Drawing angles to 180 degrees

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.1 \(Advanced\)](#) Draw lines and angles and identify these in two-dimensional figures.

[CC.2.3.4.A.2 \(Advanced\)](#) Classify two-dimensional figures by properties of their lines and angles.

Topic: Turns and right angles

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.1 \(Advanced\)](#) Draw lines and angles and identify these in two-dimensional figures.

[CC.2.3.4.A.2 \(Advanced\)](#) Classify two-dimensional figures by properties of their lines and angles.

Unit: Perpendicular and Parallel Line segments

Timeline: Week 25 to 26

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

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

Unit Essential Questions: How can line segments go up and down, side to side and in every direction?

How can perpendicular and parallel line segments be drawn?

using a drawing triangle?

How do we identify vertical and horizontal lines?

Unit Big Ideas: 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 Materials: Textbook

protractor

drawing triangle

grid paper

Unit Assignments: Independent practice
reteach
Additional practice

Unit Key Terminology & Definitions: perpendicular line segment
drawing triangle
parallel line segment
bade
horizontal lines
vertical lines

STANDARDS: STANDARDS
STATE: PA Core Standards (2014)
[CC.2.3.4.A.1 \(Advanced\)](#) Draw lines and angles and identify these in two-dimensional figures.
[CC.2.3.4.A.2 \(Advanced\)](#) Classify two-dimensional figures by properties of their lines and angles.
(* standards consolidated from Topic level)

Topic: Drawing perpendicular line segments

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.1 \(Advanced\)](#) Draw lines and angles and identify these in two-dimensional figures.
[CC.2.3.4.A.2 \(Advanced\)](#) Classify two-dimensional figures by properties of their lines and angles.

Topic: Drawing parallel line segments

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.1 \(Advanced\)](#) Draw lines and angles and identify these in two-dimensional figures.
[CC.2.3.4.A.2 \(Advanced\)](#) Classify two-dimensional figures by properties of their lines and angles.

Topic: Horizontal and vertical lines

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.1 \(Advanced\)](#) Draw lines and angles and identify these in two-dimensional figures.
[CC.2.3.4.A.2 \(Advanced\)](#) Classify two-dimensional figures by properties of their lines and angles.

Unit: Squares and Rectangles

Timeline: Week 27 to 28

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

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

Unit Essential Questions: How can patterns be used to describe relationships in mathematical situations?
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: textbook
ruler
grid paper
toothpicks
drawing triangle
protractor

Unit Assignments: Independent practice
reteach
Additional practice

Unit Key Terminology & Definitions: square
right angle
rectangle
parallel

STANDARDS: STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.1 \(Advanced\)](#) Draw lines and angles and identify these in two-dimensional figures.

[CC.2.3.4.A.2 \(Advanced\)](#) Classify two-dimensional figures by properties of their lines and angles.

(* standards consolidated from Topic level)

Topic: Squares and rectangles

Minutes for Topic: 55

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.1 \(Advanced\)](#) Draw lines and angles and identify these in two-dimensional figures.

[CC.2.3.4.A.2 \(Advanced\)](#) Classify two-dimensional figures by properties of their lines and angles.

Topic: Properties of a square and rectangle

Minutes for Topic: 55

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.1 \(Advanced\)](#) Draw lines and angles and identify these in two-dimensional figures.

[CC.2.3.4.A.2 \(Advanced\)](#) Classify two-dimensional figures by properties of their lines and angles.

Unit: Area and Perimeter

Timeline: Week 29 to 32

Unit Description: Measurement attributes can be quantified, and estimated using customary and noncustomary units of measure.

Unit Essential Questions: What makes a tool and/or strategy appropriate for a given task?

Why does "what" we measure influence "how" we measure?

In what ways are the mathematical attributes of objects or processes measured, calculated and/or interpreted?

How precise do measurements and calculations need to be?

Unit Big Ideas: Measurement attributes can be quantified, and estimated using customary and noncustomary units of measure.

Unit Materials: textbook

dot paper

geoboard

Unit Assignments: Independent practice

reteach

Additional practice

Unit Key Terminology & Definitions: length

width

composite figure

STANDARDS: STANDARDS

STATE: PA Core Standards (2014)

[CC.2.2.4.A.1 \(Advanced\)](#) Represent and solve problems involving the four operations.

[CC.2.2.4.A.4 \(Advanced\)](#) Generate and analyze patterns using one rule.

[CC.2.4.4.A.1 \(Advanced\)](#) Solve problems involving measurement and conversions from a larger unit to a smaller unit.

[CC.2.4.4.A.4 \(Advanced\)](#) Represent and interpret data involving fractions using information provided in a line plot.

(* standards consolidated from Topic level)

Topic: Area of a rectangle

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.2.4.A.4 \(Advanced\)](#) Generate and analyze patterns using one rule.

Topic: Rectangles and squares

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.2.4.A.1 \(Advanced\)](#)

Represent and solve problems involving the four operations.

[CC.2.2.4.A.4 \(Advanced\)](#)

Generate and analyze patterns using one rule.

Topic: Composite figures

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.2.4.A.1 \(Advanced\)](#)

Represent and solve problems involving the four operations.

[CC.2.4.4.A.4 \(Advanced\)](#)

Represent and interpret data involving fractions using information provided in a line plot.

Topic: Using formulas for area and perimeter

Minutes for Topic: 165

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.2.4.A.4 \(Advanced\)](#)

Generate and analyze patterns using one rule.

[CC.2.4.4.A.1 \(Advanced\)](#)

Solve problems involving measurement and conversions from a larger unit to a smaller unit.

Unit: Symmetry

Timeline: Week 33

Unit

Understanding line symmetry and rotational symmetry and making symmetric shapes and

Description:

patterns.

Unit Essential

How can patterns be used to describe relationships in mathematical situations?

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: textbook

drawing triangle

grid paper

colored pencils

Unit Independent practice
Assignments: reteach
Additional practice

Unit Key Terminology & Definitions: line of symmetry
symmetric figure
rotation
rotational symmetry
center of rotation
clockwise
counter-clockwise

STANDARDS: STANDARDS
STATE: PA Core Standards (2014)
[CC.2.3.4.A.3 \(Advanced\)](#) Recognize symmetric shapes and draw lines of symmetry.
(* standards consolidated from Topic level)

Topic: Identifying lines of symmetry

Minutes for Topic: 55

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.3 \(Advanced\)](#) Recognize symmetric shapes and draw lines of symmetry.

Topic: Rotational symmetry

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.3 \(Advanced\)](#) Recognize symmetric shapes and draw lines of symmetry.

Topic: Making symmetric shapes and patterns

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.3.4.A.3 \(Advanced\)](#) Recognize symmetric shapes and draw lines of symmetry.

Unit: Tessellations

Timeline: Week 34

Unit Understanding tessellations.

Description: Patterns formed by repeated shapes, to cover a surface with gaps or overlaps.

Unit Essential Questions: How can repeated shapes be identified?

What are different ways shapes can be tessellated?

Unit Big Ideas: Identifying tessellations, which are patterns formed by repeated shapes, to cover a surface without gaps or overlaps.

Unit Materials: textbook
peg board
rubberbands
Pattern paper

Unit Assignments: Independent practice
reteach
Additional practice

Unit Key Terminology & Definitions: tessellation
repeated shape
slide
rotate
flip
modify

STANDARDS: STANDARDS
STATE: PA Core Standards (2014)
[CC.2.2.4.A.4 \(Advanced\)](#) Generate and analyze patterns using one rule.
(* standards consolidated from Topic level)

Topic: Identifying tessellations

Minutes for Topic: 55

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.2.4.A.4 \(Advanced\)](#) Generate and analyze patterns using one rule.

Topic: More tessellations

Minutes for Topic: 110

STANDARDS

STATE: PA Core Standards (2014)

[CC.2.2.4.A.4 \(Advanced\)](#) Generate and analyze patterns using one rule.