# Curriculum Map: Common Core Math Grade 2

Course: Second-Math Subtopic: General

Grade(s): None specified

**Course Description:** Second grade students learn problem solving through the mathematical concepts of place value for numbers up to 1,000, add and subtract numbers less than 1,000, describe attributes of common geometric shapes and objects and understand and use units of linear measurement. Students learn Operations and Algebraic Thinking, Numbers and Operations in Base Ten, Measurement and Data, and Geometry through whole group instruction, including flexible learning groups, cooperative learning, and learning centers. The Mathematical Practice Standards apply across all mathematics courses and together with the content standards, prescribe the students experience mathematics as a coherent, useful and logical subject that makes use of the ability to make sense of problem situations.

**Course Textbooks, Workbooks, Materials Citations:**

Text Book
Otter Creek
Study Island
Websites
- SASS
- Teachers Pay Teachers
- Pinterest

Addition/Subtraction Flashcards
Multiplication Flashcards
Three-dimensional Shapes
Rulers

## Unit:

This Curriculum Map Unit has no Topics to display

## Unit: Unit 1 Standards for Mathematical Practice

**Unit/Module Description:** Students investigate, practice and apply the varieties of expertise that they should develop and demonstrate in their study of mathematics. Students apply these Standards to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years.

**Unit/Module Big Ideas:** The base-ten number system is a way to organize, represent and compare numbers using groups of ten and place value.

Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.

The same number sentence (Ex: 12-4=8) can be associated with different concrete or real world situations, AND different number sentences can be associated with the same concrete or real world situation.

Numerical quantities and calculations can be estimated by using numbers that are close to the actual values, but easier to compute with.

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

Two- and three-dimensional objects can be described, classified, and analyzed by their attributes, and their location can be described quantitatively.

Some attributes of objects are measurable, ex, length, mass and capacity can be quantified.

Measures can be estimated using known referents.

Some questions can be answered by collecting, representing, and analyzing data, and the question to be answered determines the data to be collected, how best to collect it, and how best to represent it.

**Unit/Module Essential Questions:** How can one interpret numbers through 100?

How can one use addition and subtraction properly?

How can one use inverse relationships?

How can one apply skills and strategies to solve problems?

How does one identify numbers to 100?

How does one identify odd and even numbers?

How does one skip count to 100?

How does one describe and create a variety of patterns?

How does one apply skills and strategies to solve problems?

How can a non-standard unit be measured?

How can  weight, capacity, and temperature be measured?

How does one identify shapes?

How does one identify sides and vertices?

How does one identify congruent shapes?

How does one identify symmetry?

How does one identify solid shapes?

How does one identify faces, edges, and vertices?

How does one classify and compare plane and solid shapes?

How can we represent and compare numbers?

How can using number patterns help us to add or subtract?

What strategies and models can we use to understand how to solve an addition or subtraction problem?

How do we know when it's appropriate to estimate or when it is appropriate to use mental math for an exact answer?

How do we measure length?

**Unit/Module Key Terminology & Definitions:**

Acute Angle – an angle that is smaller than a right angle

**Addend** – one of the numbers being combined in an addition problem to form the sum

**Addition** – an operation that combines two or more addends to find the sum

**Angle –** the figure formed by two rays extending from a common endpoint

**Area –** the number of square units needed to cover a surface

**Array –** an orderly arrangement of objects in the shape of a rectangle; a carton of eggs is an example of an array

**Associative Property of Addition –** the property that states that changing the grouping of the addends does not affect the sum

**Bar Graph** – a graph that shows information using parallel rows or columns

**Capacity –** the amount that a container can hold

**Celsius –** a scale for measuring temperature named for Anders Celsius; on the Celsius scale, the freezing point of water is 100 degrees

**Cent symbol** – the symbol for the word "cent" or "cents"

**Centimeter** – a small metric unit used to measure length; cm.

**Certain** – absolutely sure to happen

**Change** – the money you get back after paying for something

**Circle** – a shape with a perfectly round curved edge

**Commutative Property of Addition** – the rule that states that changing the order of the addends does not affect the sum

**Commutative Property of Multiplication** – the rule that states that changing the order of factors does not affect the product

**Comparison Symbols** – symbols that show whether a number is greater than (□), less than (□), or equal to (=) another number

**Cone** – a geometric solid with a circle on one end that connects to a point at the other end

**Congruent** – having the same size and shape

**Coordinate Graph** – a diagram containing intersecting perpendicular lines on which points are identified by pairs of numbers

**Coordinates** – the numbers that show the location of a point on a coordinate graph

**Cube** – a geometric solid with six congruent square faces

**Cup** – a U.S. Customary System unit used to measure capacity; c

**Cylinder** – a geometric solid with congruent circles on each end

**Data** – information

**Date** – the month, day and year

**Decimal Point** – the symbol that separates the dollars from the cents when writing an amount of money; the symbol that separates the whole number from the decimal part of a number; the symbol  that separates the ones' place from the tenths' place

**Decrease** – to become smaller; to count backward

**Degree** – a unit used to measure temperature or angles

**Denominator** – the bottom number in a fraction; shows how many parts in all

**Difference** – the answer to a subtraction problem

**Digit** – any of the symbols, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 used to write numbers

**Digital Time** – the time shown on a clock using digits instead of using a dial and hands

**Divide** – to separate into equal groups

**Division** – an operation to separate a number of objects into equal groups

**Dollar Sign** – the symbol for an amount of U.S. money equal to 100 cents

**Doubles** – two of the same number

**Dozen** – a set of twelve

**Edge** – the line segment where two faces of a geometric solid meet; one side of a closed figure

**Eighth** – the ordinal number that tells the number eight position; (also see one eighth)

**Eleventh** – the ordinal number that tells the number eleven position

**Endpoint** – the point at the beginning or the end of a line segment

**Equal** – exactly the same; having the same value

**Equal Chance** – equal probability that something will or will not happen

**Equal Groups** – sets of objects having the same number or value; a way of talking about multiplication and division

**Equal Parts** – sections of a whole that are exactly the same size

**Equal To –** having the same value

**Estimate** – to make a good guess about value or measurement based on given information

**Even** – every number divisible by 2; every number ending 0, 2, 4, 6, or 8

**Expanded Form** – a way of showing a number by showing the value for each digit

**Face** – a flat surface of a geometric solid

**Fact Family** – a group of addition facts and subtraction facts that all use the same three numbers; a group of multiplication facts and division facts that all use the same three numbers

**Factors** – the number that are multiplied in a multiplication problem

**Fahrenheit** – a scale for measuring temperature name for Gabriel Fahrenheit; on the Fahrenheit scale, the freezing point of water is 32 degrees and the boiling point of water is 212 degrees

**Feet** – more than one foot; (also see foot)

**Fewer** – not as many

**Fewest** – the least number of all

**Fifth** – the ordinal number that tells the number five position

**First** – the ordinal number that tells which one is before all the others

**Flip** – to turn over a figure from front to back or back to front

**Foot** – a U.S. Customary System unit used to measure length, height or distance; ft.

**Fourth** – the ordinal number that tells the number four position; (also see one fourth)

**Fraction** – a number that tells the number of parts (numerator) of a whole (denominator)

**Full** – completely filled

**Gallon** – a U.S. customary system unit used to measure liquids; gal

**Geometric Solid –** an object with three dimensions: length, height, and depth; example are cube, cone, and pyramid

**Gram** – a small metric unit used to measure weight; g

**Graph** – a chart that shows information using symbols, points, bars, or lines

**Greater** – more

**Greater Than** – more than

**Greatest** – more than all the others

**Half** – one of two equal parts; (also see one half)

**Half Dozen** – a set of six

**Half Hour** – a measurement of time equal to 30 minutes; one half of an hour

**Half Inch** – one half of an inch

**Half Past** – a way of saying 30 minutes after the hour when telling time

**Halves** – two equal parts that make one whole; the plural of "half"

**Heaviest** – weighing more than all the others

**Height** – the distance from top to bottom or bottom to top

**Hexagon** – shape with six straight sides and six angles

**Horizontal** – a path that goes from left to right; from the word horizon, the line where the earth and sky meet

**Hour** – a measurement of time equal to 60 minutes

**Hour Hand** – the shorter hand on the clock that shows the hour

**Impossible** – cannot happen

**Inch** – a small U.S. Customary System unit used to measure length, height, or distance; in

**Intersect** – to cross

**Kilogram** – a metric unit used to measure weight or mass; kg

**Largest** – greater or more than all the others

**Last** – at the end

**Least** – less than all the others

**Left** – a direction; the opposite of right; a word used in subtraction problems to show what remains

**Length** – the distance from one end to the other end

**Less** – not as many

**Less Likely** – less than an equal chance that something will happen

**Less Than** – not as many as

**Lightest** – having less weight than all the others

**Likelihood of Events** – how probable it is that something will happen

**Likely** – probably will happen

**Line of Symmetry** – an imaginary line that divides a figure into two identical sides

**Line Segment** – a straight path usually marked with two endpoints

**Liter** – a metric unit used to measure capacity; l

**Longer** – having more length

**Mass** – the amount of matter in an object found by using a scale; weight

**Median** – the middle number in a list of numbers arranged in order from least to greatest

**Metric** – a system of measurement based on tens (decimals)

**Metric Units** – units of measure based on tens (decimals)

**Minus** – a word used between numbers that means to subtract the second number from the first number

**Minute** – a unit used to measure time; min

**Minute Hand** – the longer hand on a clock that shows the number of minutes before and after the hour

**Mixed Number –** a number that contains both a whole number and a fraction

**Mode** – the number that occurs most often on the list

**Month** – the period of time equal to about four weeks or 30-31 days; January, February, March, April, May, June, July, August, September, October, November, December

**More likely** – more than an equal chance that something will happen

**Most** – the largest amount; greater than all the others

**Multiples** – numbers that are the products of multiplying a number by 1, 2, 3, 4 and so on

**Multiplication** – an operation to combine equal groups

**Multiplication Table** - a chart that shows the multiplication facts

**Nickel** – a U.S. coin worth five cents

**Ninth** – the ordinal number that tells the number nine position

**Number** – one or more digits showing an amount

**Number Line** – a straight path marked with numbers at equal spaces and arrows at each end

**Oblique** – a straight path that is slanted; a line neither horizontal nor vertical

**Obtuse Angle** – and angle that is larger than a right angle

**O'clock** – of or by the clock; used when the longer hand points 12

**Odd** – every number not divisible by 2; every number ending in 1, 3, 5, 7, or 9

**One Eighth** – ⅛; one of eight equal parts

**One Fourth** – ¼; one of four equal parts

**One Half** – ½; one of two equal parts

**One Sixth** – □; one of six equal parts

**One Third** – ⅓; one of three equal parts

**Ordinal Number** – a number that describes position or order

**Origin** – the point of intersection of the horizontal and vertical number lines on a coordinate plane

**Pair** – two items that are usually together such as shows or gloves

**Parallel** – lines that do not cross and are always the same distance apart

**Parallelogram** – a shape with four straight sides that has two pairs of parallel lines

**Perimeter** – the distance around a shape

**Perpendicular** – lines that intersect to form right angles

**Pictograph** – a way of showing information using pictures or symbols

**Plus** – a word used between numbers that means to add the numbers together

**Polygon** – a closed, flat figure bounded by line segments

**Pound** – a U.S. Customary System unit used to measure weight (mass); lb

**Prediction** – a guess based on given information that something might or might not happen

**Probability** – how likely it is that something will happen

**Product** – the answer in a multiplication problem

**Pyramid** – a geometric solid with a polygon base connected to at least three triangular faces that have a common point, or vertex

**Quart** – a U.S. Customary System unit used to measure capacity; qt

**Quarter** – a U.S. coin worth 25 cents; one fourth

**Quarter Hour** – a measurement of time equal to 15 minutes; one fourth of an hour

**Range** – the difference between the least and the greatest number in a set

**Rectangle** – a shape with four straight sides and four right angles

**Rectangular Prism** – a geometric solid with six rectangular faces

**Reflection** - a way to transform or move a shape by flipping it from front to back or from back to front

**Remainder** – the part left after dividing a group of items into equal groups; R

**Repeating Pattern** – an arrangement of items that is shown over and over

**Right** – a direction; opposite of left; correct

**Right Angle** – an angle that measures 90 degrees; square corner

**Right Triangle** – a triangle with a right angle

**Rotation** – a way to transform or move a shape by turning it around a fixed point

**Round** – to change a number to show the nearest ten, hundred, and so on

**Rounding** – changing a number to show the nearest ten, hundred, and so on

**Row** – a horizontal arrangement of items

**Second** – the ordinal number that tells the number two position

**Seventh** – the ordinal number that tells the number seven position

**Shape** – a closed form or outline

**Shorter** – having less length or height

**Side** – a straight edge of a shape; a flat surface of an object

**Sixth** – the ordinal number that tells the number six position; (also see one sixth)

**Size** – a measurement of how large or small something is

**Slide** – to transform a shape by moving it from one place to another on a flat surface without turning it; translate

**Smallest** – having the least size s

**Sort** – to separate items into groups based on something they have in common

**Sphere** – a geometric solid that is shaped like a globe or ball

**Square** – a shape with four sides, all equal in length, and four right angles

**Subtract** – to count backward; take away

**Subtraction** – an operation that takes one number away from another to find the difference

**Sum** – the answer to an addition problem

**Survey** – to collect information by asking a group of people questions that have answer choices

**Symmetrical** - having two identical sides that can be divided by an imaginary line

**Tally** – to keep track while counting by writing small vertical and oblique marks

**Temperature** – the measurement by degree of how hot or cold something is

**Tenth** – the ordinal number that tells the number ten position

**Thermometer** – a tool used to measure temperature

**Third** – the ordinal number that tells the number three position; (also see one third)

**Translation** – a way to transform or move a shape by sliding it to a different place

**Trapezoid** – a shape with four sides and only one pair of parallel sides

**Triangle** – a shape with three sides and three angles

**Turn** – to rotate a shape around a fixed point

**Twelfth** – the ordinal number the tells the number twelve position

**Unlikely** – probably will not happen

**Venn Diagram** – a drawing of two or more intersecting circles that shows what the sets have in common

**Vertex** – a point or corner of a polygon or geometric solid

**Vertical** – a path that goes up and down

**Weekday** – Monday, Tuesday, Wednesday, Thursday, or Friday

**Weekend** – Saturday or Sunday

**Weight** – the measure of how heavy something is

**Whole** – all parts together; complete

**Yard** – a U.S. Customary System unit used to measure length, height, and distance; yd

**Unit/Module Student Learning Outcomes:**

Use place-value concepts to represent amounts of tens and ones and to compare three digit numbers.

Use place-value concepts to read, write, and skip count to 1000.

Use place-value concepts and properties of operations to add and subtract within 1000. Represent and solve problems involving addition and subtraction within 100.

Use mental strategies to add and subtract within 20.

Work with equal groups of objects to gain foundations for multiplication.

Analyze and draw two- and three-dimensional shapes having specified attributes.

Use the understanding of fractions to partition shapes into halves, quarters, and thirds. Measure and estimate lengths in standard units using appropriate tools.

Tell and write time to nearest five minutes using both analog and digital clocks.

Solve problems and make change using coins and paper currency with appropriate symbols.

Represent and interpret data using line plots, picture graphs, and bar graphs.

Extend the concepts of addition and subtraction to problems involving length.

**Unit/Module Student Performance Tasks:**

*Teacher Generated Handouts
*Activity Sheets
*Hands-On Activities
*Lesson Reviews
*Interactive Online Games and Activities

**Unit/Module Materials:**

Math Text Book
Study Island
Otter Creek
Various Math Games
Various Teacher Created Worksheets
Math Websites
  *SASS
  *Teachers Pay Teachers
  *Pinterest
Addition/Subtraction/Multiplication Flash Cards
Three-dimensional shapes
Rulers
Graph Paper
Thermometer
Coins/Paper Money
Judy Clocks
Calendar
Manipulatives
Pattern Blocks
Base Ten Blocks
Hundreds Chart
Teacher Generated Math Centers
Graphic Organizer

Math Notebook

**Unit/Module Assignments:** *Optional*

**Unit/Module Notes:** *Optional*

**Unit/Module Instructional Procedures & Activities:** *Optional*

**STANDARDS**

STATE: PA Common Core Standards (2012)

| | |
|---|---|
| CC.2.1.2.B.1 (Advanced) | Use place value concepts to represent amounts of tens and ones and to compare three digit numbers. |
| CC.2.1.2.B.2 (Advanced) | Use place value concepts to read, write and skip count to 1000. |
| CC.2.1.2.B.3 (Advanced) | Use place value understanding and properties of operations to add and subtract within 1000. |
| CC.2.2.2.A.1 (Advanced) | Represent and solve problems involving addition and subtraction within 100. |
| CC.2.2.2.A.2 (Advanced) | Use mental strategies to add and subtract within 20. |
| CC.2.2.2.A.3 (Advanced) | Work with equal groups of objects to gain foundations for multiplication. |
| CC.2.4.2.A.1 (Advanced) | Measure and estimate lengths in standard units using appropriate tools. |
| CC.2.4.2.A.2 (Advanced) | Tell and write time to the nearest five minutes using both analog and digital clocks. |
| CC.2.4.2.A.3 (Advanced) | Solve problems using coins and paper currency with appropriate symbols. |
| CC.2.4.2.A.4 (Advanced) | Represent and interpret data using line plots, picture graphs, and bar graphs. |
| CC.2.4.2.A.6 (Advanced) | Extend the concepts of addition and subtraction to problems involving length. |

**Lesson Topic:**

## Unit: Unit 2 Numbers and Operations in Base Ten

**Unit/Module Description:** Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens or ones (Example: 853 is 8 hundreds+5 tens+3 ones).

**Unit/Module Big Ideas:** The base-ten number system is a way to organize, represent and compare numbers using groups of ten and place value.

Skills and strategies will be applied to add and subtract.

**Unit/Module Essential Questions:** How can we represent and compare numbers?

How can using number patterns help us to add or subtract?

**Unit/Module Key Terminology & Definitions:**

**Addend** – one of the numbers being combined in an addition problem to form the sum

**Addition** – an operation that combines two or more addends to find the sum

**Associative Property of Addition –** the property that states that changing the grouping of the addends does not affect the sum

**Commutative Property of Addition** – the rule that states that changing the order of the addends does not affect the sum

**Comparison Symbols** – symbols that show whether a number is greater than (□), less than (□), or equal to (=) another number

**Decrease** – to become smaller; to count backward

**Difference** – the answer to a subtraction problem

**Digit** – any of the symbols, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 used to write numbers

**Doubles** – two of the same number

**Dozen** – a set of twelve

**Equal** – exactly the same; having the same value

**Equal To –** having the same value

**Estimate** – to make a good guess about value or measurement based on given information

**Even** – every number divisible by 2; every number ending 0, 2, 4, 6, or 8

**Expanded Form** – a way of showing a number by showing the value for each digit

**Fact Family** – a group of addition facts and subtraction facts that all use the same three numbers; a group of multiplication facts and division facts that all use the same three numbers

**Fewer** – not as many

**Fewest** – the least number of all

**Fifth** – the ordinal number that tells the number five position

**First** – the ordinal number that tells which one is before all the others

**Fourth** – the ordinal number that tells the number four position; (also see one fourth)

**Greater** – more

**Greater Than** – more than

**Greatest** – more than all the others

**Largest** – greater or more than all the others

**Last** – at the end

**Least** – less than all the others

**Left** – a direction; the opposite of right; a word used in subtraction problems to show what remains

**Less** – not as many

**Less Than** – not as many as

**Minus** – a word used between numbers that means to subtract the second number from the first number

**Most** – the largest amount; greater than all the others

**Ninth** – the ordinal number that tells the number nine position

**Number** – one or more digits showing an amount

**Number Line** – a straight path marked with numbers at equal spaces and arrows at each end

**Odd** – every number not divisible by 2; every number ending in 1, 3, 5, 7, or 9

**Ordinal Number** – a number that describes position or order

**Round** – to change a number to show the nearest ten, hundred, and so on

**Rounding** – changing a number to show the nearest ten, hundred, and so on

**Second** – the ordinal number that tells the number two position

**Seventh** – the ordinal number that tells the number seven position

**Sixth** – the ordinal number that tells the number six position; (also see one sixth)

**Smallest** – having the least size s

**Square** – a shape with four sides, all equal in length, and four right angles

**Subtract** – to count backward; take away

**Subtraction** – an operation that takes one number away from another to find the difference

**Sum** – the answer to an addition problem

**Tenth** – the ordinal number that tells the number ten position

**Third** – the ordinal number that tells the number three position; (also see one third)

**Twelfth** – the ordinal number the tells the number twelve position

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|---|---|
| **Unit/Module Student Learning Outcomes:** | Use place-value concepts to represent amounts of tens and ones and to compare three digit numbers.<br><br>Use place-value concepts to read, write, and skip count to 1000.<br><br>Use place-value concepts and properties of operations to add and subtract within 1000. |
| **Unit/Module Student Performance Tasks:** | *Teacher Generated Handouts<br>*Activity Sheets<br>*Hands-On Activities<br>*Lesson Reviews<br>*Interactive Online Games and Activities |
| **Unit/Module Materials:** | Math Text Book<br>Study Island<br>Otter Creek<br>Various Math Games<br>Various Teacher Created Worksheets<br>Math Websites<br>*SASS<br>*Teachers Pay Teachers<br>*Pinterest<br>Addition/Subtraction Flashcards<br>Graph Paper<br>Manipulatives<br>Pattern Blocks<br>Base Ten Blocks<br>Hundreds Chart<br>Teacher Generated Math Centers |
| **Unit/Module Assignments:** | *Optional* |
| **Unit/Module Notes:** | *Optional* |
| **Unit/Module Instructional Procedures & Activities:** | *Optional* |

**STANDARDS**

STATE: PA Common Core Standards (2012)

| | |
|---|---|
| CC.2.1.2.B.1 (Advanced) | Use place value concepts to represent amounts of tens and ones and to compare three digit numbers. |
| CC.2.1.2.B.2 (Advanced) | Use place value concepts to read, write and skip count to 1000. |
| CC.2.1.2.B.3 (Advanced) | Use place value understanding and properties of operations to add and subtract within 1000. |

**Lesson Topic: Core Lesson 1 Place Value**

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|---|---|
| **Core Lesson/Topic Description:** | Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens or ones (Example: 853 is 8 hundreds+5 tens+3 ones). |
| **Core Lesson/Topic Big Ideas:** | The base-ten number system is a way to organize, represent and compare numbers using groups of ten and place value. |
| **Core Lesson/Topic Essential Questions:** | How can we represent amounts of tens and ones?<br><br>How would one understand how to read, write, estimate, order and compare numbers? |
| **Core Lesson/Topic Key Terminology & Definitions:** | Comparison Symbols - symbols that show whether a number is greater than (>), less than (<), or equal to (=) another symbol.<br><br>Equal to - having the same value<br><br>Fewest - not as many<br><br>Greater - more<br><br>Ones Place<br>Tens Place<br>Hundreds Place<br>Thousands Place |
| **Core Lesson/Topic Student Learning Outcomes:** | * Identify place and value of ones, tens, hundreds, and thousands<br>* Represent amounts of tens and ones<br>* Use >, <, = to compare three digit numbers<br>* Use place value to read a number to 1000<br>* Use place value to write a number to 1000 |
| **Core Lesson/Topic Instructional Procedures & Activities:** | *Given a two or three digit number, students will name the given place and value<br>*Use symbols to compare and order numbers<br>*Put given numbers in order<br>*Read write and numbers (0 to 999)<br>*Skip count by 100's.<br>*Analyze patterns when counting by hundreds.<br>*<!--[endif]-->Recognize that the number in the hundreds place determines the value of the number (place value).<br><!--[if !supportLists]-->*Decompose multiples of 100 into hundreds, tens, and ones (e.g., 400 could be decomposed into 4 hundreds or 1 hundred and 30 tens, etc.<br>*Identify that numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds.<br>*Create multiples of 100 using a variety of representations (manipulatives, standard form/numeral). |
| **Core Lesson/Topic Materials:** | Base ten blocks<br>Hundreds Chart<br>Math Text Book<br>Study Island<br>Various Math Games<br>Various Teacher Created Worksheets<br>Math Websites<br>*SASS<br>*Teachers Pay Teachers<br>*Pinterest<br>Teacher Generated Math Centers |
| **Core Lesson/Topic Assignments:** | *Optional* |
| **Core** | |

| | |
|---|---|
| **Lesson/Topic Notes:** | *Optional* |

**Lesson Topic: Core Lesson 2 Addition and Subtraction**

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|---|---|
| **Core Lesson/Topic Description:** | Use place value understanding and properties of operations to add and subtract. |
| **Core Lesson/Topic Big Ideas:** | Intentionally Blank |
| **Core Lesson/Topic Essential Questions:** | How would one use addition and subtraction properties and fact families to find sums and differences of numbers from 20?<br><br>How would one use inverse relationships to find missing addends?<br><br>How would one apply skills and strategies to solve addition and subtraction equations? |
| **Core Lesson/Topic Key Terminology & Definitions:** | **Addition** – an operation that combines two or more addends to find the sum<br><br>**Associative Property of Addition –** the property that states that changing the grouping of the addends does not affect the sum<br><br>**Commutative Property of Addition** – the rule that states that changing the order of the addends does not affect the sum<br><br>**Difference** – the answer to a subtraction problem<br><br>**Digit** – any of the symbols, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 used to write numbers<br><br>**Doubles** – two of the same number<br><br>**Dozen** – a set of twelve<br><br>**Equal** – exactly the same; having the same value<br><br>**Equal To –** having the same value<br><br>**Estimate** – to make a good guess about value or measurement based on given information<br><br>**Fact Family** – a group of addition facts and subtraction facts that all use the same three numbers; a group of multiplication facts and division facts that all use the same three numbers<br><br>**Fewer** – not as many<br><br>**Fewest** – the least number of all<br><br>**Greater** – more<br><br>**Greatest** – more than all the others<br><br>**Largest** – greater or more than all the others<br><br>**Least** – less than all the others<br><br>**Less** – not as many<br><br>**Number** – one or more digits showing an amount<br><br>**Number Line** – a straight path marked with numbers at equal spaces and arrows at each end<br><br>**Odd** – every number not divisible by 2; every number ending in 1, 3, 5, 7, or 9<br><br>**Round** – to change a number to show the nearest ten, hundred, and so on<br><br>**Rounding** – changing a number to show the nearest ten, hundred, and so on<br><br>**Smallest** – having the least size s<br><br>**Sum** – the answer to an addition problem |

| | |
|---|---|
| **Core Lesson/Topic Student Learning Outcomes:** | * Skip count to 1000<br>* Use properties of addition and subtraction<br>* Add<br>* Subtract |
| **Core Lesson/Topic Instructional Procedures & Activities:** | *Represent addition and subtraction using Base Ten blocks or manipulatives<br><br>*Recognize that when adding or subtracting by 10, the only number that is affected is the digit in the tens place.<br>*Recognize that when adding 10 to a two-digit number, there will be an increase in the amount of tens, but the amount of ones will stay the same.<br><br>*Recognize that when adding 100 to a three-digit number, the only increase occurs in the amount of hundreds, but the amount of tens and one will remain the same.<br>*State that subtraction means to "take away" and therefore, when subtracting by 10, there will be a decrease in the amount of tens in a two-digit number while the amount of ones will stay the same.<br><br>*State that subtracting 10 from a three-digit number will result in a decrease in the amount of tens, while the amount of ones and hundreds will stay the same.<br>*Recognize symbols (+,=)<br>*Know addition and subtraction facts (0 to 20).<br>*Apply addition and subtractions facts through 20 to solve problems with greater numbers<br>*Analyze a word problem and determine the appropriate operation for solving.<br>*Write equations both horizontally and vertically.<br>*Apply knowledge of place value to add and subtract ones and then tens, regrouping if necessary.<br>*Utilize a variety of operational strategies to add and subtract through 1,000 (fact families, applying the inverse relationship between addition and subtraction, doubles, doubles plus 1, etc.). |
| **Core Lesson/Topic Materials:** | Math Text Book<br>Study Island<br>Otter Creek<br>Various Math Games<br>Various Teacher Created Worksheets<br>Math Websites<br>*SASS<br>*Teachers Pay Teachers<br>*Pinterest<br>Addition/Subtraction Flashcards<br>Graph Paper<br>Manipulatives<br>Base Ten Blocks<br>Hundreds Chart<br>Teacher Generated Math Centers |
| **Core Lesson/Topic Assignments:** | *Optional* |
| **Core Lesson/Topic Notes:** | *Optional* |

## Unit: Unit 3 Operations and Algebraic Thinking

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|---|---|
| **Unit/Module Description:** | Students use their understanding of addition to develop fluency with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations. they select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds. |
| **Unit/Module Big Ideas:** | Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms.<br><br>The same number sentence (Ex: 12-4=8) can be associated with different concrete or real world situations, AND different number sentences can be associated with the same concrete or real world situation. |

Numerical quantities and calculations can be estimated by using numbers that are close to the actual values, but easier to compute with.

**Unit/Module Essential Questions:**

How can we represent and compare numbers?

What strategies and models can we use to understand how to solve an addition or subtraction problem?

How do we know when it is appropriate to estimate or when it is appropriate to use mental math for an exact answer?

How can using number patterns help us to add or subtract?

How would one understand how to read, write, estimate, order and compare numbers to 100?

How would one use addition and subtraction properties and fact families to find sums and differences of two and three digit numbers?

How would one use inverse relationships to find missing addends?

**Unit/Module Key Terminology & Definitions:**

**Addend** – one of the numbers being combined in an addition problem to form the sum

**Addition** – an operation that combines two or more addends to find the sum

**Array –** an orderly arrangement of objects in the shape of a rectangle; a carton of eggs is an example of an array

**Associative Property of Addition –** the property that states that changing the grouping of the addends does not affect the sum

**Commutative Property of Addition** – the rule that states that changing the order of the addends does not affect the sum

**Commutative Property of Multiplication** – the rule that states that changing the order of factors does not affect the product

**Comparison Symbols** – symbols that show whether a number is greater than (□), less than (□), or equal to (=) another number

**Decrease** – to become smaller; to count backward

**Difference** – the answer to a subtraction problem

**Digit** – any of the symbols, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 used to write numbers

**Doubles** – two of the same number

**Dozen** – a set of twelve

**Equal** – exactly the same; having the same value

**Equal To –** having the same value

**Estimate** – to make a good guess about value or measurement based on given information

**Even** – every number divisible by 2; every number ending 0, 2, 4, 6, or 8

**Expanded Form** – a way of showing a number by showing the value for each digit

**Fact Family** – a group of addition facts and subtraction facts that all use the same three numbers; a group of multiplication facts and division facts that all use the same three numbers

**Factors** – the number that are multiplied in a multiplication problem

**Fewer** – not as many

**Fewest** – the least number of all

**Fifth** – the ordinal number that tells the number five position

**First** – the ordinal number that tells which one is before all the others

**Fourth** – the ordinal number that tells the number four position; (also see one fourth)

**Greater** – more

**Greater Than** – more than

**Greatest** – more than all the others

**Largest** – greater or more than all the others

**Last** – at the end

**Least** – less than all the others

**Left** – a direction; the opposite of right; a word used in subtraction problems to show what remains

**Less** – not as many

**Less Than** – not as many as

**Minus** – a word used between numbers that means to subtract the second number from the first number

**Most** – the largest amount; greater than all the others

**Multiples** – numbers that are the products of multiplying a number by 1, 2, 3, 4 and so on

**Multiplication** – an operation to combine equal groups

**Multiplication Table** - a chart that shows the multiplication facts

**Ninth** – the ordinal number that tells the number nine position

**Number** – one or more digits showing an amount

**Number Line** – a straight path marked with numbers at equal spaces and arrows at each end

**Odd** – every number not divisible by 2; every number ending in 1, 3, 5, 7, or 9

**Ordinal Number** – a number that describes position or order

**Round** – to change a number to show the nearest ten, hundred, and so on

**Rounding** – changing a number to show the nearest ten, hundred, and so on

**Second** – the ordinal number that tells the number two position

**Seventh** – the ordinal number that tells the number seven position

**Sixth** – the ordinal number that tells the number six position; (also see one sixth)

**Smallest** – having the least size s

**Square** – a shape with four sides, all equal in length, and four right angles

**Subtract** – to count backward; take away

**Subtraction** – an operation that takes one number away from another to find the difference

**Sum** – the answer to an addition problem

**Tenth** – the ordinal number that tells the number ten position

**Third** – the ordinal number that tells the number three position; (also see one third)

**Twelfth** – the ordinal number the tells the number twelve position

**Unit/Module Student Learning Outcomes:**

Represent and solve problems involving addition and subtraction within 100.

Use mental strategies to add and subtract within 20.

Work with equal groups of objects to gain foundations for multiplication.

**Unit/Module**

*Teacher Generated Handouts

| | |
|---|---|
| **Student Performance Tasks:** | *Activity Sheets<br>*Hands-On Activities<br>*Lesson Reviews<br>*Interactive Online Games and Activities |
| **Unit/Module Materials:** | Math Text Book<br>Study Island<br>Otter Creek<br>Various Math Games<br>Various Teacher Created Worksheets<br>Math Websites<br>*SASS<br>*Teachers Pay Teachers<br>*Pinterest<br>Addition/Subtraction/Multiplication Flash Cards<br>Manipulatives<br>Base Ten Blocks<br>Hundreds Chart<br>Teacher Generated Math Centers |
| **Unit/Module Assignments:** | *Optional* |
| **Unit/Module Notes:** | *Optional* |
| **Unit/Module Instructional Procedures & Activities:** | *Optional* |

**STANDARDS**

STATE: PA Common Core Standards (2012)

| | |
|---|---|
| CC.2.2.2.A.1 (Advanced) | Represent and solve problems involving addition and subtraction within 100. |
| CC.2.2.2.A.2 (Advanced) | Use mental strategies to add and subtract within 20. |
| CC.2.2.2.A.3 (Advanced) | Work with equal groups of objects to gain foundations for multiplication. |

**Lesson Topic:**

**Lesson Topic: Lesson 1 Addition**

| | |
|---|---|
| **Core Lesson/Topic Description:** | Represent and solve problems involving addition.<br>Add within 20. |
| **Core Lesson/Topic Big Ideas:** | Instant recall of addition facts<br>Mental Math |
| **Core Lesson/Topic Essential Questions:** | What strategies and models can we use to understand how to solve an addition problem?<br>How do we know when it is appropriate to estimate or when it is appropriate to use mental math for an exact answer?<br>How can using number patterns help us to add?<br>How would one use addition properties and fact families to find sums of two and three digit numbers?<br>How would one use inverse relationships to find missing addends? |
| **Core Lesson/Topic Key Terminology & Definitions:** | **Addend** – one of the numbers being combined in an addition problem to form the sum<br>**Addition** – an operation that combines two or more addends to find the sum<br>**Associative Property of Addition –** the property that states that changing the grouping of the addends does not affect the sum<br>**Commutative Property of Addition** – the rule that states that changing the order of the |

addends does not affect the sum

**Difference** – the answer to a subtraction problem

**Digit** – any of the symbols, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 used to write numbers

**Doubles** – two of the same number

**Dozen** – a set of twelve

**Equal** – exactly the same; having the same value

**Equal To –** having the same value

**Estimate** – to make a good guess about value or measurement based on given information

**Fact Family** – a group of addition facts and subtraction facts that all use the same three numbers; a group of multiplication facts and division facts that all use the same three numbers

**Fewer** – not as many

**Fewest** – the least number of all

**Greater** – more

**Greatest** – more than all the others

**Largest** – greater or more than all the others

**Least** – less than all the others

**Less** – not as many

**Number** – one or more digits showing an amount

**Number Line** – a straight path marked with numbers at equal spaces and arrows at each end

**Odd** – every number not divisible by 2; every number ending in 1, 3, 5, 7, or 9

**Round** – to change a number to show the nearest ten, hundred, and so on

**Rounding** – changing a number to show the nearest ten, hundred, and so on

**Smallest** – having the least size s

**Sum** – the answer to an addition problem

**Core Lesson/Topic Student Learning Outcomes:**

Represent problems involving addition within 100
Use mental strategies to add within 20

**Core Lesson/Topic Instructional Procedures & Activities:**

*Represent addition using Base Ten blocks or manipulatives.

*Recognize that when adding by 10, the only number that is affected is the digit in the tens place.
*Recognize that when adding 10 to a two-digit number, there will be an increase in the amount of tens, but the amount of ones will stay the same.

*Recognize that when adding 100 to a three-digit number, the only increase occurs in the amount of hundreds, but the amount of tens and one will remain the same.

*Recognize symbols (+,=)

*Know addition facts (0 to 20).
*Apply addition facts through 20 to solve problems with greater numbers
*Analyze a word problem and determine the appropriate operation for solving.
*Write equations both horizontally and vertically.
*Apply knowledge of place value to add and subtract ones and then tens, regrouping if necessary.
*Utilize a variety of operational strategies to add through 1,000 (fact families, applying the inverse relationship between addition and subtraction, doubles, doubles plus 1, etc.).

| | |
|---|---|
| **Core Lesson/Topic Materials:** | Addition Flash Cards<br>Otter Creek - Addition<br>Study Island<br>Manipulatives<br>Math Text Book<br>Study Island<br>Various Math Games<br>Various Teacher Created Worksheets<br>Math Websites<br>*SASS<br>*Teachers Pay Teachers<br>*Pinterest<br>Manipulatives<br>Base Ten Blocks<br>Hundreds Chart<br>Teacher Generated Math Centers |
| **Core Lesson/Topic Assignments:** | *Optional* |
| **Core Lesson/Topic Notes:** | *Optional* |

**Lesson Topic: Lesson 2 Subtraction**

| | |
|---|---|
| **Core Lesson/Topic Description:** | The students will represent and solve problems involving subtraction.<br><br>The students will subtract within 20. |
| **Core Lesson/Topic Big Ideas:** | Instant recall of subtraction facts<br><br>Mental Math |
| **Core Lesson/Topic Essential Questions:** | What strategies and models can we use to understand how to solve a subtraction problem?<br><br>How do we know when it is appropriate to estimate or when it is appropriate to use mental math for an exact answer?<br><br>How can using number patterns help us to subtract?<br><br>How would one use subtraction properties and fact families to find differences of two and three digit numbers?<br><br>How would one use inverse relationships to find missing addends? |
| **Core Lesson/Topic Key Terminology & Definitions:** | **Decrease** – to become smaller; to count backward<br><br>**Difference** – the answer to a subtraction problem<br><br>**Digit** – any of the symbols, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 used to write numbers<br><br>**Doubles** – two of the same number<br><br>**Equal** – exactly the same; having the same value<br><br>**Equal To –** having the same value<br><br>**Estimate** – to make a good guess about value or measurement based on given information<br><br>**Fact Family** – a group of addition facts and subtraction facts that all use the same three numbers; a group of multiplication facts and division facts that all use the same three numbers<br><br>**Fewer** – not as many<br><br>**Left** – a direction; the opposite of right; a word used in subtraction problems to show what remains<br><br>**Less** – not as many<br><br>**Less Than** – not as many as |

**Minus** - a word used between numbers that means to subtract the second number from the first number

**Most** – the largest amount; greater than all the others

**Number Line** – a straight path marked with numbers at equal spaces and arrows at each end

**Smallest** – having the least size s

**Subtract** – to count backward; take away

**Subtraction** – an operation that takes one number away from another to find the difference

**Core Lesson/Topic Student Learning Outcomes:**

*Solve problems involving subtraction within 100
*Use mental strategies to subtract within 20

**Core Lesson/Topic Instructional Procedures & Activities:**

*Represent subtraction using Base Ten blocks or manipulatives

*Recognize that when subtracting by 10, the only number that is affected is the digit in the tens place.

*State that subtraction means to "take away" and therefore, when subtracting by 10, there will be a decrease in the amount of tens in a two-digit number while the amount of ones will stay the same.

*State that subtracting 10 from a three-digit number will result in a decrease in the amount of tens, while the amount of ones and hundreds will stay the same.

*Recognize symbols (+,=)
*Know subtraction facts (0 to 20).
*Apply subtractions facts through 20 to solve problems with greater numbers
*Analyze a word problem and determine the appropriate operation for solving.
*Write equations both horizontally and vertically.
*Apply knowledge of place value to add and subtract ones and then tens, regrouping if necessary.
*Utilize a variety of operational strategies to add and subtract through 1,000 (fact families, applying the inverse relationship between addition and subtraction, doubles, doubles plus 1, etc.).

**Core Lesson/Topic Materials:**

Subtraction Flash Cards
Otter Creek - Subtraction
Study Island
Math Text Book
Various Math Games
Various Teacher Created Worksheets
Math Websites
*SASS
*Teachers Pay Teachers
*Pinterest
Manipulatives
Base Ten Blocks
Hundreds Chart
Teacher Generated Math Centers

**Core Lesson/Topic Assignments:**

*Optional*

**Core Lesson/Topic Notes:**

*Optional*

**Lesson Topic: Lesson 3 Multiplication**

**Core Lesson/Topic Description:**

The students will work with equal groups of objects to gain foundations for multiplication.

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|---|---|
| **Core Lesson/Topic Big Ideas:** | Instant recall of multiplication facts |
| **Core Lesson/Topic Key Terminology & Definitions:** | **Array –** an orderly arrangement of objects in the shape of a rectangle; a carton of eggs is an example of an array<br><br>**Commutative Property of Multiplication** – the rule that states that changing the order of factors does not affect the product<br><br>**Comparison Symbols** – symbols that show whether a number is greater than (□), less than (□), or equal to (=) another number<br><br>**Doubles** – two of the same number<br><br>**Dozen** – a set of twelve<br><br>**Equal** – exactly the same; having the same value<br><br>**Equal To –** having the same value<br><br>**Even** – every number divisible by 2; every number ending 0, 2, 4, 6, or 8<br><br>**Expanded Form** – a way of showing a number by showing the value for each digit<br><br>**Fact Family** – a group of addition facts and subtraction facts that all use the same three numbers; a group of multiplication facts and division facts that all use the same three numbers<br><br>**Factors** – the number that are multiplied in a multiplication problem<br><br>**Multiples** – numbers that are the products of multiplying a number by 1, 2, 3, 4 and so on<br><br>**Multiplication** – an operation to combine equal groups<br><br>**Multiplication Table** - a chart that shows the multiplication facts<br><br>**Number Line** – a straight path marked with numbers at equal spaces and arrows at each end |
| **Core Lesson/Topic Student Learning Outcomes:** | Work with equal groups of objects to gain a foundation for multiplication<br>Learn multiplication facts<br>Understand the purpose of multiplication |
| **Core Lesson/Topic Instructional Procedures & Activities:** | *Multiplaction Flashcards<br>*Repeated Practice<br>*Various Strategies<br>-Doubles<br>-Fact Familes<br>-Mental Math<br>*Daily Use of Otter Creek<br>*Timed Test |
| **Core Lesson/Topic Materials:** | Manipulatives<br>Multiplication Flash Cards<br>Otter Creek - Multiplication<br>Study Island<br>Math Text Book<br>Math Notebook<br>Various Teacher Made Worksheets<br>Various Multiplication websites |
| **Core Lesson/Topic Assignments:** | *Optional* |
| **Core Lesson/Topic Notes:** | *Optional* |

## Unit: Unit 4 Geometry

**Unit/Module Description:** Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

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

Two- and three-dimensional objects can be described, classified, and analyzed by their attributes, and their location can be described quantitatively.

**Unit/Module Essential Questions:** How would one identify and name plane shapes and solid shapes?

How would one determine how many sides and vertices are on a triangle?

What makes a triangle a congruent shape?

What makes a shape symmetrical?

How would one identify faces, edges, and vertices?

How would one compare a cube and a square?

How would one partition shapes into halves, quarters, and thirds?

**Unit/Module Key Terminology & Definitions:**

**Angle –** the figure formed by two rays extending from a common endpoint

**Area –** the number of square units needed to cover a surface

**Capacity –** the amount that a container can hold

**Cone** – a geometric solid with a circle on one end that connects to a point at the other end

**Congruent** – having the same size and shape

**Cube** – a geometric solid with six congruent square faces

**Decimal Point** – the symbol that separates the dollars from the cents when writing an amount of money; the symbol that separates the whole number from the decimal part of a number; the symbol that separates the ones' place from the tenths' place

**Degree** – a unit used to measure temperature or angles

**Denominator** – the bottom number in a fraction; shows how many parts in all

**Divide** – to separate into equal groups

**Division** – an operation to separate a number of objects into equal groups

**Edge** – the line segment where two faces of a geometric solid meet; one side of a closed figure

**Endpoint** – the point at the beginning or the end of a line segment

**Equal** – exactly the same; having the same value

**Equal Groups** – sets of objects having the same number or value; a way of talking about multiplication and division

**Equal Parts** – sections of a whole that are exactly the same size

**Equal To –** having the same value

**Estimate** – to make a good guess about value or measurement based on given information

**Face** – a flat surface of a geometric solid

**Fact Family** – a group of addition facts and subtraction facts that all use the same three numbers; a group of multiplication facts and division facts that all use the same three numbers

**Flip** – to turn over a figure from front to back or back to front

**Fraction** – a number that tells the number of parts (numerator) of a whole (denominator)

**Geometric Solid –** an object with three dimensions: length, height, and depth; example are cube, cone, and pyramid

**Half** – one of two equal parts; (also see one half)

**Half Dozen** – a set of six

**Hexagon** – shape with six straight sides and six angles

**Horizontal** – a path that goes from left to right; from the word horizon, the line where the earth and sky meet

**Mixed Number –** a number that contains both a whole number and a fraction

**Oblique** – a straight path that is slanted; a line neither horizontal nor vertical

**Obtuse Angle** – and angle that is larger than a right angle

**One Eighth** – ⅛; one of eight equal parts

**One Fourth** – ¼; one of four equal parts

**One Half** – ½; one of two equal parts

**One Sixth** – □; one of six equal parts

**One Third** – ⅓; one of three equal parts

**Parallel** – lines that do not cross and are always the same distance apart

**Parallelogram** – a shape with four straight sides that has two pairs of parallel lines

**Perimeter** – the distance around a shape

**Polygon** – a closed, flat figure bounded by line segments

**Pyramid** – a geometric solid with a polygon base connected to at least three triangular faces that have a common point, or vertex

**Rectangle** – a shape with four straight sides and four right angles

**Rectangular Prism** – a geometric solid with six rectangular faces

**Repeating Pattern** – an arrangement of items that is shown over and over

**Right** – a direction; opposite of left; correct

**Right Angle** – an angle that measures 90 degrees; square corner

**Right Triangle** – a triangle with a right angle

**Rotation** – a way to transform or move a shape by turning it around a fixed point

**Shape** – a closed form or outline

**Side** – a straight edge of a shape; a flat surface of an object

**Size** – a measurement of how large or small something is

**Slide** – to transform a shape by moving it from one place to another on a flat surface without turning it; translate

**Smallest** – having the least size s

**Sort** – to separate items into groups based on something they have in common

**Sphere** – a geometric solid that is shaped like a globe or ball

**Square** – a shape with four sides, all equal in length, and four right angles

**Symmetrical** - having two identical sides that can be divided by an imaginary line

**Trapezoid** – a shape with four sides and only one pair of parallel sides

**Triangle** – a shape with three sides and three angles

**Turn** – to rotate a shape around a fixed point

**Venn Diagram** – a drawing of two or more intersecting circles that shows what the sets have in common

**Vertex** – a point or corner of a polygon or geometric solid

**Vertical** – a path that goes up and down

**Whole** – all parts together; complete

**Unit/Module Student Learning Outcomes:**

Analyze and draw two- and three-dimensional shapes having specified attributes.

Use the understanding of fractions to partition shapes into halves, quarters, and thirds.

Classify and compare plane and solid shapes

**Unit/Module Student Performance Tasks:**

*Teacher Generated Handouts
*Activity Sheets
*Hands-On Activities
*Lesson Reviews
*Interactive Online Games and Activities

**Unit/Module Materials:**

Math Text Book
Study Island
Various Math Games
Various Teacher Created Worksheets
Math Websites
*SASS
*Teachers Pay Teachers
*Pinterest
Three-dimensional shapes
Graph Paper
Pattern Blocks
Teacher Generated Math Centers

**Unit/Module Assignments:**

*Optional*

**Unit/Module Notes:**

*Optional*

**Unit/Module Instructional Procedures & Activities:**

*Optional*

**STANDARDS**

STATE: PA Common Core Standards (2012)

| | |
|---|---|
| CC.2.4.2.A.4 (Advanced) | Represent and interpret data using line plots, picture graphs, and bar graphs. |
| CC.2.4.2.A.6 (Advanced) | Extend the concepts of addition and subtraction to problems involving length. |

**Lesson Topic: Lesson 1 Shapes**

**Core Lesson/Topic Description:**

Students will reason with shapes and their attributes.

**Core Lesson/Topic Big Ideas:**

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

Two- and three-dimensional objects can be described, classified, and analyzed by their attributes, and their location can be described quantitatively.

**Core Lesson/Topic Student Learning Outcomes:**

Identify two- and three-dimensional shapes
Identify attributes of two dimensional shapes
Identify attributes of three-dimensional shapes
Draw two and three-dimensional shapes by name or attributes

**Core Lesson/Topic Instructional Procedures & Activities:**

*Recognize 2D/ 3D shapes.
*Recognize open/closed figures.
*Identify the attributes of 2D/3D shapes
*Construct shapes having specified attributes.

**Core Lesson/Topic Materials:**

Three-dimensional shapes
Posters of attributes of two- and three-dimensional shapes
Math Text Book
Study Island
Otter Creek
Various Math Games
Various Teacher Created Worksheets
Math Websites
*SASS
*Teachers Pay Teachers
*Pinterest
Graph Paper
Teacher Generated Math Centers

**Lesson Topic: Lesson 2 Fractions**

**Core Lesson/Topic Student Learning Outcomes:**

Understand fractions
Partition shapes into halves
Partition shapes into quarters
Partition shapes into thirds

## Unit: Unit 5 Measurement and Data

**Unit/Module Description:**

Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with understanding that linear measure involves an iteration of units. They recognize that the smaller unit, the more iterations they need to cover a given length.

**Unit/Module Big Ideas:**

Some attributes of objects are measurable, ex, length, mass and capacity can be quantified.

Measures can be estimated using known referents.

**Unit/Module Essential Questions:**

How would one identify non-standard units of measure ?

How would one identify standard units of measure?

How would one determine the weight of an object?

How would one measure the capacity of an container?

How would one read a thermometer and ruler?

How do we know when it is appropriate to estimate or when it is appropriate to use mental math for an exact answer?

How do we measure length?

How would one tell and write time to the nearest five minutes using both analog and digital clocks?

How would one solve problems and make change using coins and paper currency with appropriate symbols?

How would one represent and interpret data using line plots, picture graphs, and bar graphs?

How would one add and subtract problems involving length?

**Unit/Module Key**

**Celsius –** a scale for measuring temperature named for Anders Celsius; on the Celsius scale, the freezing point of water is 100 degrees

**Terminology & Definitions:**

**Cent symbol** – the symbol for the word "cent" or "cents"

**Centimeter** – a small metric unit used to measure length; cm.

**Change** – the money you get back after paying for something

**Date** – the month, day and year

**Degree** – a unit used to measure temperature or angles

**Digital Time** – the time shown on a clock using digits instead of using a dial and hands

**Dollar Sign** – the symbol for an amount of U.S. money equal to 100 cents

**Equal** – exactly the same; having the same value

**Fahrenheit** – a scale for measuring temperature name for Gabriel Fahrenheit; on the Fahrenheit scale, the freezing point of water is 32 degrees and the boiling point of water is 212 degrees

**Feet** – more than one foot; (also see foot)

**Gallon** – a U.S. customary system unit used to measure liquids; gal

**Gram** – a small metric unit used to measure weight; g

**Half Hour** – a measurement of time equal to 30 minutes; one half of an hour

**Half Inch** – one half of an inch

**Half Past** – a way of saying 30 minutes after the hour when telling time

**Hour** – a measurement of time equal to 60 minutes

**Hour Hand** – the shorter hand on the clock that shows the hour

**Inch** – a small U.S. Customary System unit used to measure length, height, or distance; in

**Kilogram** – a metric unit used to measure weight or mass; kg

**Length** – the distance from one end to the other end

**Liter** – a metric unit used to measure capacity; l

**Longer** – having more length

**Mass** – the amount of matter in an object found by using a scale; weight

**Metric** – a system of measurement based on tens (decimals)

**Metric Units** – units of measure based on tens (decimals)

**Nickel** – a U.S. coin worth five cents

**O'clock** – of or by the clock; used when the longer hand points 12

**Pound** – a U.S. Customary System unit used to measure weight (mass); lb

**Quart** – a U.S. Customary System unit used to measure capacity; qt

**Quarter** – a U.S. coin worth 25 cents; one fourth

**Quarter Hour** – a measurement of time equal to 15 minutes; one fourth of an hour

**Shorter** – having less length or height

**Temperature** – the measurement by degree of how hot or cold something is

**Thermometer** – a tool used to measure temperature

**Weekday** – Monday, Tuesday, Wednesday, Thursday, or Friday

**Weekend** – Saturday or Sunday

**Weight** – the measure of how heavy something is

**Yard** – a U.S. Customary System unit used to measure length, height, and distance; yd

**Unit/Module Student Learning Outcomes:**

Measure and estimate lengths in standard units using appropriate tools.

Tell and write time to nearest five minutes using both analog and digital clocks.

Solve problems and make change using coins and paper currency with appropriate symbols.

Represent and interpret data using line plots, picture graphs, and bar graphs.

Extend the concepts of addition and subtraction to problems involving length.

**Unit/Module Student Performance Tasks:**

*Teacher Generated Handouts
*Activity Sheets
*Hands-On Activities
*Lesson Reviews
*Interactive Online Games and Activities

**Unit/Module Materials:**

Math Text Book
Study Island
Various Math Games
Various Teacher Created Worksheets
Math Websites
*SASS
*Teachers Pay Teachers
*Pinterest
Addition/Subtraction
Rulers
Coins/Paper Money
Judy Clocks
Calendar
Manipulatives
Pattern Blocks
Teacher Generated Math Centers

**Unit/Module Assignments:**

*Optional*

**Unit/Module Notes:**

*Optional*

**Unit/Module Instructional Procedures & Activities:**

*Optional*

**STANDARDS**

STATE: PA Common Core Standards (2012)

| | |
|---|---|
| CC.2.4.2.A.1 (Advanced) | Measure and estimate lengths in standard units using appropriate tools. |
| CC.2.4.2.A.2 (Advanced) | Tell and write time to the nearest five minutes using both analog and digital clocks. |
| CC.2.4.2.A.3 (Advanced) | Solve problems using coins and paper currency with appropriate symbols. |

**Lesson Topic: Lesson 1 Measurement**

**Core Lesson/Topic Essential Questions:**

How would one identify non-standard units of measure ?

How would one identify standard units of measure?

How would one determine the weight of an object?

How would one measure the capacity of an container?

How would one read a thermometer and ruler?

How do we know when it is appropriate to estimate or when it is appropriate to use mental math for an exact answer?

How do we measure length?

**Core Lesson/Topic Key Terminology & Definitions:**

**Celsius –** a scale for measuring temperature named for Anders Celsius; on the Celsius scale, the freezing point of water is 100 degrees

**Centimeter** – a small metric unit used to measure length; cm.

**Date** – the month, day and year

**Degree** – a unit used to measure temperature or angles

**Equal** – exactly the same; having the same value

**Fahrenheit** – a scale for measuring temperature name for Gabriel Fahrenheit; on the Fahrenheit scale, the freezing point of water is 32 degrees and the boiling point of water is 212 degrees

**Feet** – more than one foot; (also see foot)

**Gallon** – a U.S. customary system unit used to measure liquids; gal

**Gram** – a small metric unit used to measure weight; g

**Half Inch** – one half of an inch

**Inch** – a small U.S. Customary System unit used to measure length, height, or distance; in

**Kilogram** – a metric unit used to measure weight or mass; kg

**Length** – the distance from one end to the other end

**Liter** – a metric unit used to measure capacity; l

**Longer** – having more length

**Mass** – the amount of matter in an object found by using a scale; weight

**Metric** – a system of measurement based on tens (decimals)

**Metric Units** – units of measure based on tens (decimals)

**Pound** – a U.S. Customary System unit used to measure weight (mass); lb

**Quart** – a U.S. Customary System unit used to measure capacity; qt

**Shorter** – having less length or height

**Temperature** – the measurement by degree of how hot or cold something is

**Thermometer** – a tool used to measure temperature

**Weekday** – Monday, Tuesday, Wednesday, Thursday, or Friday

**Weekend** – Saturday or Sunday

**Weight** – the measure of how heavy something is

**Yard** – a U.S. Customary System unit used to measure length, height, and distance; yd

**Core Lesson/Topic Student Learning Outcomes:**

Use a ruler properly
Read a ruler properly
Measure lengths in standard units
Estimate lengths in standard units

**Core Lesson/Topic Instructional Procedures &**

*Recognize standard and nonstandard units of measurement (feet, cubes, etc.)
*Identify tools for measuring length.
*Demonstrate how to use measurement tools (ruler, measuring tape, etc.)
*Measure the length of objects in inches feet, and yards and using customary and metric

| | |
|---|---|
| **Activities:** | measuring tools.<br>*Measure the length of objects in inches feet, and yards and using non-standard measuring tools. |
| **Core Lesson/Topic Materials:** | Math Text Book<br>Study Island<br>Various Math Games<br>Various Teacher Created Worksheets<br>Math Websites<br>*SASS<br>*Teachers Pay Teachers<br>*Pinterest<br>Graph Paper<br>Manipulatives<br>Ruler<br>Teacher Generated Math Centers |
| **Core Lesson/Topic Assignments:** | *Optional* |
| **Core Lesson/Topic Notes:** | *Optional* |

**Lesson Topic: Lesson 2 Time**

| | |
|---|---|
| **Core Lesson/Topic Description:** | Work with time |
| **Core Lesson/Topic Essential Questions:** | How would one tell and write time to the nearest five minutes using both analog and digital clocks? |
| **Core Lesson/Topic Key Terminology & Definitions:** | **Date** – the month, day and year<br>**Digital Time** – the time shown on a clock using digits instead of using a dial and hands<br>**Equal** – exactly the same; having the same value<br>**Half Hour** – a measurement of time equal to 30 minutes; one half of an hour<br>**Half Past** – a way of saying 30 minutes after the hour when telling time<br>**Hour** – a measurement of time equal to 60 minutes<br>**Hour Hand** – the shorter hand on the clock that shows the hour<br>**O'clock** – of or by the clock; used when the longer hand points 12<br>**Quarter Hour** – a measurement of time equal to 15 minutes; one fourth of an hour<br>**Weekday** – Monday, Tuesday, Wednesday, Thursday, or Friday<br>**Weekend** – Saturday or Sunday |
| **Core Lesson/Topic Student Learning Outcomes:** | Tell time to the nearest five minutes using both a digital and analog clock<br>Write time to the nearest five minutes using both a digital and analog clock |
| **Core Lesson/Topic Materials:** | Math Text Book<br>Study Island<br>Various Math Games<br>Various Teacher Created Worksheets<br>Math Websites<br>*SASS<br>*Teachers Pay Teachers |

*Pinterest
Judy Clocks
Calendar
Teacher Generated Math Centers

**Lesson Topic: Lesson 3 Money**

**Core Lesson/Topic Description:** Work with money

**Core Lesson/Topic Essential Questions:** How would one solve problems and make change using coins and paper currency with appropriate symbols?

**Core Lesson/Topic Key Terminology & Definitions:**

**Cent symbol** – the symbol for the word "cent" or "cents"

**Change** – the money you get back after paying for something

**Dime** - a U.S. coin worth ten cents

**Dollar Sign** – the symbol for an amount of U.S. money equal to 100 cents

**Equal** – exactly the same; having the same value

**Nickel** – a U.S. coin worth five cents

**Penny** - a U.S. coin worth one cent

**Quarter** – a U.S. coin worth 25 cents; one fourth

**Core Lesson/Topic Student Learning Outcomes:**
Solve problems using money
Make change using coins and paper currency
Use appropriate symbols

**Core Lesson/Topic Materials:**
Play money
Math Text Book
Study Island
Various Math Games
Various Teacher Created Worksheets
Math Websites
*SASS
*Teachers Pay Teachers
*Pinterest
Teacher Generated Math Centers

**Lesson Topic: Lesson 4 Data**

**Core Lesson/Topic Description:** Represent and interpret data

**Core Lesson/Topic Essential Questions:** How would one represent and interpret data using line plots, picture graphs, and bar graphs?

**Core Lesson/Topic Key Terminology & Definitions:**

Bar Graph - a graph that shows information using parallel rows or columns

Coordinate Graph - a diagram containing intersecting perpendicular lines on which points are identified by pairs of numbers

Coordinates - the numbers that show the location of a point on a coordinate graph

Data - information

Decrease - to become smaller

Endpoint - the point at the beginning or the end of a line segment

Graph - a chart that shows information using symbols, points, bars or lines

Intersect - to cross

Increase - to become larger

Left - a direction; the opposite of right

Origin - the point of intersection of the horizontal and vertical number lines on a coordinate plane

Pictograph - a way of showing information using pictures or symbols

Right - a direction opposite of left

Tally - to keep track while counting by writing small vertical and oblique marks

Vertical - a path that goes up and down

**Core Lesson/Topic Student Learning Outcomes:**

Represent data using line plots
Represent data using picture graphs
Represent data using bar graphs
Interpret data using line plots
Interpret data using picture graphs
Interpret data using bar graphs

**Core Lesson/Topic Materials:**

Graph Paper
Various teacher made graphs
Post-It Notes
Manipulatives

**Lesson Topic: Lesson 5 Addition and Subtraction with Measurement**

**Core Lesson/Topic Description:**

Relate addition and subtraction to length

**Core Lesson/Topic Essential Questions:**

How would one add and subtract problems involving length?

**Core Lesson/Topic Key Terminology & Definitions:**

**Centimeter** – a small metric unit used to measure length; cm.s

**Equal** – exactly the same; having the same value

**Feet** – more than one foot; (also see foot)

**Half Inch** – one half of an inch

**Inch** – a small U.S. Customary System unit used to measure length, height, or distance; in

**Length** – the distance from one end to the other end

**Longer** – having more length

**Metric** – a system of measurement based on tens (decimals)

**Metric Units** – units of measure based on tens (decimals)

**Shorter** – having less length or height

**Yard** – a U.S. Customary System unit used to measure length, height, and distance; yd

**Addend** – one of the numbers being combined in an addition problem to form the sum

**Addition** – an operation that combines two or more addends to find the sum

**Associative Property of Addition –** the property that states that changing the grouping of the addends does not affect the sum

**Commutative Property of Addition** – the rule that states that changing the order of the

addends does not affect the sum

**Difference** – the answer to a subtraction problem

**Digit** – any of the symbols, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 used to write numbers

**Doubles** – two of the same number

**Dozen** – a set of twelve

**Equal** – exactly the same; having the same value

**Equal To –** having the same value

**Estimate** – to make a good guess about value or measurement based on given information

**Fact Family** – a group of addition facts and subtraction facts that all use the same three numbers; a group of multiplication facts and division facts that all use the same three numbers

**Fewer** – not as many

**Fewest** – the least number of all

**Greater** – more

**Greatest** – more than all the others

**Largest** – greater or more than all the others

**Least** – less than all the others

**Less** – not as many

**Number** – one or more digits showing an amount

**Number Line** – a straight path marked with numbers at equal spaces and arrows at each end

**Odd** – every number not divisible by 2; every number ending in 1, 3, 5, 7, or 9

**Round** – to change a number to show the nearest ten, hundred, and so on

**Rounding** – changing a number to show the nearest ten, hundred, and so on

**Smallest** – having the least size s

**Sum** – the answer to an addition problem

**Core Lesson/Topic Student Learning Outcomes:**

Add and Subtract lengths.