# Curriculum Map: Math Kindergarten 2019-2020*

Course: MATH GRADE K  Sub-topic: Uncategorized

Grade(s): None specified

**Course Description:**

*Students at this level will exhibit the following:*

**Make sense of problems and persevere in solving them**

- Begin to build the understanding that doing mathematics involves solving problems and discussing how they solved them
- Explain to themselves the meaning of a problem and look for ways to solve it
- Use concrete objects or pictures to help them conceptualize and solve problems
- Check their thinking by asking themselves, "Does this make sense?" or they may try another strategy

**Reason abstractly and quantitatively**

- Begin to recognize that a number represents a specific quantity
- Connect the quantity to written symbols
- Create a representation of a problem while attending to the meanings of the quantities (quantitative reasoning)

**Construct viable arguments and critique the reasoning of others**

- Construct arguments using concrete referents, such as objects, pictures, drawings and actions
- Begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like "How did you get that?" and "Why is that true?"
- Explain their thinking to others and respond to others' thinking

**Model with mathematics**

- Experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc.
- Connect the different representations and explain the connections
- Use all of these representations as needed

**Use appropriate tools strategically**

- Begin to consider the available tools (including estimation) when solving a mathematical problem
- Decide when certain tools might be helpful
- Decide that it might be advantageous to use linking cubes to represent two quantities
- Compare the two representations side-by-side

**Attend to precision**

- Develop their mathematical communication skills
- Use clear and precise language in their discussions with others and in their own reasoning

**Look for and make use of structure**

- Begin to discern a pattern or structure. For instance, students recognize the pattern that exists in the teen numbers; every teen number is written with a 1 (representing one ten) and ends with the digit that is first stated. They also recognize that 3+2=5 and 2+3=5

**Look for and express regularity in repeated reasoning**

- Notice repetitive actions in counting and computation, etc. For example, they many notice the next number in a counting sequence is "one more". When counting by tens, the next number in the sequence is "ten more" (or one more group of ten)
- Continually check their work by asking themselves, "Does this make sense?"

**Course Textbooks, Workbooks, Materials Citations:** Houghton Mifflin Harcourt 2015

## Unit: Numerical Sequence

**Month:** September, October, November, December, January, March, April, May

**Skills:**

1. Rote count to 100
2. Count forward beginning from a given number within the known sequence (instead of having to begin 1)
3. Name numerals 0-20
4. Represent a number of objects with a written numeral 0-20

**Essential Questions:**

1. How is mathematics used to quantify, compare, represent, and model numbers?
2. How can mathematics support effective communication?
3. What does it mean to estimate or analyze numerical quantities?

**Content:**

1. Mathematical relationships among numbers can be represented, compared, and communicated
2. Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools

**Vocabulary:**

Addition

Area

Capacity

Circle

Cone

Corners (vertices)

Cube

Cylinder

Digit

Equal

Greater than

Length

Less than

One

Place value

Quantity

Rectangle

Sides

Sphere

Square

Subtraction

Tens

Total

Triangle

Weight

**STANDARDS:**

**STANDARDS**

STATE: PA Core Standards (2014)

| | |
|---|---|
| CC.2.1.K.A.1 (Advanced) | Know number names and write and recite the count sequence. |

(* standards consolidated from Topic level)

**Topic: Lesson 2: Numbers 1-5 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** **Count and write 1 and 2**

**Core Lesson Essential Questions:** **How can you count and write 1 and 2 with words and numbers? E**

**Core Lesson Key Terminology & Definitions:**

Addition

Area

Capacity

Circle

Cone

Corners (vertices)

Cube

Cylinder

Digit

Equal

Greater than

Length

Less than

One

Place value

Quantity

Rectangle

Sides

Sphere

Square

Subtraction

Tens

Total

Triangle

Weight

**STANDARDS**

STATE: PA Core Standards (2014)

CC.2.1.K.A.1 (Advanced) Know number names and write and recite the count sequence.

**Topic: Lesson 4:Numbers 1-5 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** **Count and write 3 and 4**

**Core Lesson Essential Questions:** **How can you count and write 3 and 4 with words and numbers? E**

**Topic: Lesson 6: Numbers 1-5 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** **Count and write 6**

**Core Lesson Essential Questions:** **How can you count and write 5 with words and numbers? E**

**Topic: Lesson 10: Numbers 1-5 (E)**

**Core Lesson Description:** Zero

**Core Lesson Student Learning Objectives:** **How can you solve problems using the strategy make a model? I**

**Core Lesson Essential Questions:** **Problem solving- understanding 0**

**Topic: Lesson 12: Numbers 1-5 (E)**

**Core Lesson Description:** Review 0 - 5

**Topic: Lesson 13: Numbers 0-5 (E)**

**Core Lesson Description:** Assessment

**Topic: Lesson 23: Numbers 6-10 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Count and Write 6

**Core Lesson Essential Questions:** **How can you count and write 6 with words and numbers? E**

**Topic: Lesson 25: Numbers 6-10 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Count and Write 7

**Core Lesson Essential Questions:** **How can you count and write 7 with words and numbers? E**

**Topic: Lesson 27: Numbers 6-10 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Count and write 8

**Core Lesson Essential Questions:** **How can you count and write 8 with words and numbers? E**

**Topic: Lesson 29: Numbers 6-10 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Count and write 9

**Core Lesson Essential Questions:** **How can you count and write 9 with words and numbers? E**

**Topic: Lesson 30: Numbers 6-10 (E)**

**Core Lesson** Numbers

**Description:**

**Core Lesson Student Learning Objectives:** Numbers to 9

**Core Lesson Essential Questions:** **How can you solve problems using the strategy draw a picture? E**

**Topic: Lesson 33: Numbers 6-10 (E)**

**Core Lesson Description:** Assessment

**Topic: Lesson 35: Numbers 6-10 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Count and write 10

**Core Lesson Essential Questions:** **How can you count and write 10 with words and numbers? E**

**Topic: Lesson 37: Numbers 6-10 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Count and order to 10

**Core Lesson Essential Questions:** **How can you count forward to 10 from a given number? E**

**Topic: Lesson 67: Numbers 11-15 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Represent 11 and 12 and write 11 and 12 with words and numbers.

**Core Lesson Essential Questions:** How can you count and write 11 and 12 with words and numbers? E

**Topic: Lesson 69: Numbers 11-15 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Represent 13 and 14 objects with number names and numerals.

**Core Lesson Essential Questions:** How can you count and write 13 and 14 with words and numbers? E

**Topic: Lesson 73: Numbers 16-20 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Represent 16 and 17 objects with number names and written numerals

**Core Lesson Essential Questions:** How can you count and write 16 and 17 words and numbers? E

**Topic: Lesson 75: Numbers 16-20 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Represent 18 and 19 objects with number names and written numbers

**Core Lesson Essential Questions:** How can you count and write 18 and 19 with words and numbers? E

**Topic: Lesson 80: Represent, Count, and Write 20 and Beyond (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Represent up to 20 objects with a number name and a written numeral

**Core Lesson Essential Questions:** How can you count and write 20 with words and numbers? E

**Topic: Lesson 81: Represent, Count, and Write 20 and Beyond (E)**

**Core Lesson Description:** Count on

**Core Lesson Student Learning Objectives:** Count forward to 20 from a given number

**Core Lesson Essential Questions:** How can you count forward to 20 from a given number? E

**Topic: Lesson 83: Represent, Count, and Write 20 and Beyond (E)**

**Core Lesson Description:** Count to 50

**Core Lesson Student Learning Objectives:** Know the count sequence when counting to 50 by ones

**Core Lesson Essential Questions:** How does the order of numbers help you count to 50 by ones? E

**Topic: Lesson 84:Represent, Count, and Write 20 and Beyond**

**Core Lesson Description:** Count to 100

**Core Lesson Student Learning Objectives:** Know the count sequence when counting to 100 by ones

**Core Lesson Essential Questions:** How does the order of numbers help you to count to 100 by ones? I

**Topic: Lesson 85: Represent, Count, and Write 20 and Beyond (E)**

**Core Lesson Description:** Count by tens

**Core Lesson Student Learning Objectives:** Know the count sequence when counting to 100 by tens

**Core Lesson Essential Questions:** How can you count to 100 by tens on a hundred chart? I

**Topic: Lesson 87 and 88: Review Numbers to 100**

**Core Lesson Description:** Review numbers to 100

**Topic: Lesson 89: Assessment**

**Core Lesson Description:** Assessment

## Unit: Number Comparison

**Month:** October, November, January, May

**Skills:**

1. Identify whether the number of objects in one group is greater than, less, than, or equal to the number of objects in another group, e.g., by using matching and counting strategies
2. Compare two numbers between 1 and 10 presented as written numerals

**Essential Questions:**

1. How is mathematics used to quantify, compare, represent, and model numbers?
2. How can mathematics support effective communication?
3. When is it appropriate to estimate versus calculate?
4. What makes a tool and/or strategy appropriate for a given task?

**Content:**

1. Mathematical relationships among numbers can be represented, compared, and communicated
2. Numerical quantities, calculations and measurements can be estimated or analyzed by using appropriate strategies and tools

**Vocabulary:** Addition

Area

Capacity

Circle

Cone

Corners (vertices)

Cube

Cylinder

Digit

Equal

Greater than

Length

Less than

One

Place value

Quantity

Rectangle

Sides

Sphere

Square

Subtraction

Tens

Total

Triangle

Weight

**Topic: Lesson 14: Compare Numbers 0-5 (E)**

**Core Lesson Description:** Number Comparison 0 - 5

**Core Lesson Student Learning Objectives:** Same Number

**Core Lesson Essential Questions:** **How can you use matching and counting to compare sets with the same number of objects? E**

**Topic: Lesson 15: Greater Than (E)**

**Core Lesson Description:** Greater Than

**Core Lesson Student Learning Objectives:** Strategies to compare sets when the number of objects in one set is greater than the number of objects in the other set.

**Core Lesson Essential Questions:** How do I compare sets when the number of objects in one set is greater than the number of objects in another set? E

**Topic: Lesson 16: Less Than (E)**

**Core Lesson Description:** Less Than

**Core Lesson Student Learning Objectives:** Use matching and counting strategies to compare set when the number of objects in one set is less than the number of objects in the other set.

**Core Lesson Essential Questions:** **How can you compare sets when the number of objects is one set less than the number of objects in the other set? E**

**Topic: Lesson 17: Compare Matching Sets to 5 (E)**

**Core Lesson Description:** Compare Matching Sets to 5

**Core Lesson Student Learning Objectives:** Make a model to solve problems using a matching strategy.

**Core Lesson Essential Questions:** **How can you make a model to solve problems using a matching strategy? I**

**Topic: Lesson 18: Compare by Counting Sets to 5 (E)**

**Core Lesson Description:** Compare By Counting Sets to 5

**Core Lesson Student Learning Objectives:** Compare by counting sets to 5

**Core Lesson Essential Questions:**

**Topic: Lesson 19 and 20: Review Comparing Numbers to 5 (E)**

**Core Lesson Description:** Review

**Topic: Lesson 21: Assessment**

**Core Lesson Description:** Assessment

**Topic: Lesson 38: Numbers 6-10 (I)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Compare by matching sets to 10

**Core Lesson Essential Questions:** **How can you solve problems using the strategy make a model? I**

**Topic: Lesson 39: Numbers 0-10 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Compare by counting set to 10

**Core Lesson Essential Questions:** How can you use counting strategies to compare sets of objects? E

**Topic: Lesson 40: Comparing Numbers 0-10 (E)**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Compare two numbers

**Core Lesson Essential Questions:** **How can you compare two numbers between 1 and 10? E**

**Topic: Lesson 41 and 42: Review Comparing Numbers (E)**

**Core Lesson Description:** Review

**Topic: Lesson 43: Assessment**

**Core Lesson Description:** Assessment

**Topic: Lesson 82: Compare Numbers to 20 (I)**

**Core Lesson Description:** Compare numbers to 20

**Core Lesson Student Learning Objectives:** Solve problems by using the strategy make a model

**Core Lesson Essential Questions:** How can you solve problems using the strategy make a model? I

## Unit: Place Value

**Month:** October, December, March, April,

**Skills:**

1. Compose and decompose numbers up to 19 into ten and ones by using objects or drawings, and record each composition or decomposition by a drawing or equation

**Essential Questions:**

1. How is mathematics used to quantify, compare, represent, and model numbers?
2. How can mathematics support effective communication?
3. How can recognizing repetition or regularity assist in solving problems more efficiently?

**Content:**

1. Mathematical relationships among numbers can be represented, compared and communicated
2. Patterns exhibit relationships that can be extended, described and generalized

**Vocabulary:**

Addition

Area

Capacity

Circle

Cone

Corners (vertices)

Cube

Cylinder

Digit

Equal

Greater than

Length

Less than

One

Place value

Quantity

Rectangle

Sides

Sphere

Square

Subtraction

Tens

Total

Triangle

Weight

**STANDARDS:**

**STANDARDS**

STATE: PA Core Standards (2014)

| | |
|---|---|
| CC.2.1.K.B.1 (Advanced) | Use place value to compose and decompose numbers within 19. |

(* standards consolidated from Topic level)

**Topic: Lesson 7: Decompose Numbers 0-5 (I)**

**Core Lesson Description:** Decompose Numbers 0-5

**Core Lesson**

**Student Learning Objectives:** **Ways to make 5**

**Core Lesson Essential Questions:** **How can you use 2 sets of objects to show 5 in more than one way? I**

**STANDARDS**

STATE: PA Core Standards (2014)

CC.2.1.K.B.1 (Advanced) Use place value to compose and decompose numbers within 19.

**Topic: Lesson 36: Ways to Make 10 (E)**

**Core Lesson Description:** Ways to make 10

**Core Lesson Student Learning Objectives:** Use a drawing to make 10 from a given number.

**Core Lesson Essential Questions:** **How can you use a drawing to make 10 from a given number? E**

**Topic: Lesson 66: Ways to Make 11 and 12 (E)**

**Core Lesson Description:** Ways to make 11 and 12

**Core Lesson Student Learning Objectives:** Use objects to compose and decompose the numbers 11 and 12 into tens and ones and some further ones

**Core Lesson Essential Questions:** How can you use objects to show 11 and 12 as ten ones and some more ones? E

**Topic: Lesson 68: Model and Count 13-14 (E)**

**Core Lesson Description:** Model and Count 13 and 14

**Core Lesson Student Learning Objectives:** Use objects to decompose and compose the numbers 13 and 14 into tens and ones and some further ones.

**Core Lesson Essential Questions:** How can you use objects to show 13 and 14 ones and some more ones? E

**Topic: Lesson 70: Model and Count 15 (E)**

**Core Lesson Description:** Model and count 15

**Core Lesson Student Learning Objectives:** Use objects to decompose 15 into tens and ones and some further ones to represent 15 with a number name and a written numeral

**Core Lesson Essential Questions:** How can you count and write 13 and 14 with words and numbers? E

**Topic: Lesson 72: Model and Count 16 and 17 (E)**

**Core Lesson Description:** Model and count 16 and 17

**Core Lesson Student Learning Objectives:** Use objects to decompose the numbers 16 and 17 into tens ones and some further ones

**Core Lesson Essential Questions:** How can you use objects to show 16 and 17 as ten ones and some more ones? E

**Topic: Lesson 74: Model and Count 18 and 19 (E)**

**Core Lesson Description:** Model and count 18 and 19

**Core Lesson Student Learning Objectives:** Use objects to decompose and compose the numbers 18 and 19 into ten ones and some further ones

**Core Lesson Essential Questions:** How can you use objects to show 18 and 19 as ten ones and some more ones? E

**Topic: Lesson 76 and 77: Numbers 11-19 (E)**

**Core Lesson Description:** Number 11-19 review

**Topic: Lesson 78: Assessment**

**Core Lesson Description:** Assessment

**Topic: Lesson 86: Tens to 100 (E)**

**Core Lesson Description:** Tens to 100

**Core Lesson Student Learning Objectives:** Use sets of tens to count to 100

**Core Lesson Essential Questions:** How can you use sets of tens to count to 100?

**Unit: Addition and Subtraction**

**Month:** January, February, March, May

**Skills:**

1. Represent addition and subtraction with objects, fingers, mental images, and drawings, sounds, acting out situations, verbal explanations, expressions or equations
2. Decompose numbers less than or equal to 10 into pairs in more than one way, by using objects or drawings, and record each decomposition by a drawing or equation
3. Find the number that makes 10, for any number from 1 to 9, when added to the given number, by using objects or drawings, and record the answer with a drawing or equation
4. Solve addition and subtraction word problems, and add and subtract within 10, by using

objects or drawings to represent the problem

**Essential Questions:**

1. How is mathematics used to quantify, compare, represent, and model numbers?
2. How can mathematics support effective communication?
3. How are relationships represented mathematically?
4. How can recognizing repetition or regularity assist in solving problems more efficiently?

**Content:**

1. Mathematical relationships among numbers can be represented, compared and communicated
2. Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations
3. Patterns exhibit relationships that can be extended, described, and generalized

**Vocabulary:**

Addition

Area

Capacity

Circle

Cone

Corners (vertices)

Cube

Cylinder

Digit

Equal

Greater than

Length

Less than

One

Place value

Quantity

Rectangle

Sides

Sphere

Square

Subtraction

Tens

Total

Triangle

Weight

**STANDARDS:**

**STANDARDS**

STATE: PA Core Standards (2014)

| | |
|---|---|
| CC.2.2.K.A.1 (Advanced) | Extend the concepts of putting together and taking apart to add and subtract within 10. |

(* standards consolidated from Topic level)

**Topic: Lesson 44 and 45: Addition (E)**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Use expressions to represent addition within 5

**Core Lesson Essential Questions:** How can you show addition as adding to? E

**STANDARDS**

STATE: PA Core Standards (2014)

CC.2.2.K.A.1 (Advanced) Extend the concepts of putting together and taking apart to add and subtract within 10.

**Topic: Lesson 46 and 47: Addition (E)**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Use expressions to represent addition

**Core Lesson Essential Questions:** How can you show addition as putting together? E

**Topic: Lesson 48 and 49: Addition (I)**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Solve problems by using the strategy act it out.

**Core Lesson Essential Questions:** How can you solve problems using the strategy act it out? I

**Topic: Lesson 50 and 51: Addition (E)**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Use objects and drawings to solve addition words problems within 5?

**Core Lesson Essential Questions:** How can you use objects and drawings to solve addition word problems? E

**Topic: Lesson 52**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Use drawings to find 10 from from a given number and record the equation

**Core Lesson Essential Questions:** How can you use a drawing to find the number that makes a 10 from a given number? I

**Topic: Lesson 53 and 54: Addition (E)**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Solve addition word problems within 5 and record the equation.

**Core Lesson Essential Questions:** How can you solve addition word problems and complete the addition sentences? E

**Topic: Lesson 55 and 56: Addition (E)**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Solve addition word problems and record the equation

**Core Lesson Essential Questions:** How can you solve addition word problems and complete the addition sentences? E

**Topic: Lesson 57: Addition (E)**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Decompose numbers within 5 into pairs in more that one way and record each decomposition with an equation

**Core Lesson Essential Questions:** How can you model and write addition sentences for number pairs for sums to 5? E

**Topic: Lesson 58: Addition (E)**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Decompose 6 and 7 into pairs in more than one way and record each decompositon with an equation

**Core Lesson Essential Questions:** How can you model and write addition sentences for number pairs for each sum of 6 and 7? I

**Topic: Lesson 59: Addition (E)**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Decompose 8 into pairs in more than one way and record each decomposition with an equation

**Core Lesson Essential Questions:** How can you model and write addition sentences for number pairs for sums of 8? I

**Topic: Lesson 60: Addition (E)**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Decompose 9 into pairs in more than one and record each decomposition with an equation

**Core Lesson Essential Questions:** How do you model and write addition sentences for number pairs for sums of 9? I

**Topic: Lesson 61: Addition (E)**

**Core Lesson Description:** Addition

**Core Lesson Student Learning Objectives:** Decompose 10 into pairs in more than one way and record each decomposition with an equation

**Core Lesson Essential Questions:** How do you model and write addition sentences for number pairs for sums of 10? E

**Topic: Lesson 62,63,64: Review Addition**

**Core Lesson Description:** Addition Review

**Topic: Lesson 65: Assessment**

**Core Lesson Description:** Assessment

**Topic: Lesson 90 and 91: Subtraction (E)**

**Core Lesson Description:** Subtraction

**Core Lesson Student Learning Objectives:** Use expressions to represent subtraction within 5

**Core Lesson Essential Questions:** How can you show subtraction as taking from? E

**Topic: Lesson 92 and 93: Subtraction (E)**

**Core Lesson Description:** Subtraction

**Core Lesson Student Learning Objectives:** Use expressions to represent subtraction

**Core Lesson Essential Questions:** How can you show subtraction as taking apart? E

**Topic: Lesson 94 and 95: Subtraction (E)**

**Core Lesson Description:** Subtraction

**Core Lesson Student Learning Objectives:** Use expressions to represent subtraction

**Core Lesson Essential Questions:** How can you solve problems using the strategy act it out? I

**Topic: Lesson 96 and 97: Subtraction (E)**

**Core Lesson Description:** Subtraction

**Core Lesson Student Learning Objectives:** Use objects and drawings to solve subtraction word problems within 5

**Core Lesson Essential Questions:** How can you use objects and drawings to solve subtraction word problems? I

**Topic: Lesson 98 and 99: Subtraction (E)**

**Core Lesson Description:** Subtraction

**Core Lesson Student Learning Objectives:** Solve subtraction word problems within 5 and record the equation

**Core Lesson Essential Questions:** How can you use objects and drawings to solve subtraction word problems? E

**Topic: Lesson 100 and 101: Subtraction (I)**

**Core Lesson Description:** Subtraction

**Core Lesson Student Learning Objectives:** Solve subtraction word problems within 10 and record the equation

**Core Lesson Essential Questions:** How can you use objects and drawings to solve subtraction word problems? I

**Topic: Lesson 102 and 103: Subtraction (I)**

| | |
|---|---|
| **Core Lesson Description:** | Subtraction |
| **Core Lesson Student Learning Objectives:** | Understand addition is putting together or adding to and subtraction is taking apart or taking from to solve word problems |
| **Core Lesson Essential Questions:** | How can you solve word problems using addition and subtraction? I |

**Topic: Lesson 104 and 105: Review Subtraction**

| | |
|---|---|
| **Core Lesson Description:** | Review |

**Topic: Lesson 106: Assessment**

| | |
|---|---|
| **Core Lesson Description:** | Assessment |

**Unit: Two- and Three- Dimensional Shapes**

**Month:** April, May

**Skills:**

1. Identify shapes as two-dimensional or three-dimensional
2. Name shapes regardless of their orientations or overall size
3. Use simple shapes to compose larger shapes

**Essential Questions:**

1. How can patterns be used to describe relationships in mathematical situations?
2. How can recognizing repetition or regularity assist in solving problems more efficiently?

**Content:**

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

**Vocabulary:**

Addition

Area

Capacity

Circle

Cone

Corners (vertices)

Cube

Cylinder

Digit

Equal

Greater than

Length

Less than

One

Place value

Quantity

Rectangle

Sides

Sphere

Square

Subtraction

Tens

Total

Triangle

Weight

**STANDARDS:**

**STANDARDS**

STATE: PA Core Standards (2014)

CC.2.3.K.A.1 (Advanced) Identify and describe two- and three-dimensional shapes.

(* standards consolidated from Topic level)

**Topic: Lesson**

**STANDARDS**

STATE: PA Core Standards (2014)

CC.2.3.K.A.1 (Advanced) Identify and describe two- and three-dimensional shapes.

**Topic: Lesson 107: 2D Shapes- Circles (E)**

**Core Lesson Description:** 2D shapes

**Core Lesson Student Learning Objectives:** Identify and name 2-D shapes including circles

**Core Lesson Essential Questions:** How can you identify and name circles? E

**Topic: Lesson 109: 2D Shapes- Squares (E)**

**Core Lesson Description:** 2D shapes

**Core Lesson Student Learning Objectives:** Identify and name 2-D shapes including squares

**Core Lesson**

**Essential Questions:** How can you identify and name squares? E

**Topic: Lesson 111: 2D Shapes- Triangles (E)**

**Core Lesson Description:** 2D Shapes

**Core Lesson Student Learning Objectives:** Identify and name 2-D shapes including triangles

**Core Lesson Essential Questions:** How can you identify and name triangles?

**Topic: Lesson 113: 2D Shapes- Rectangles (E)**

**Core Lesson Description:** 2D Shapes

**Core Lesson Student Learning Objectives:** Identify and name 2-D shapes including rectangles

**Core Lesson Essential Questions:** How can you identify and name rectangles? E

**Topic: Lesson 115: 2D Shapes- Hexagons (E)**

**Core Lesson Description:** 2D shapes

**Core Lesson Student Learning Objectives:** Identify and name 2-D shapes including hexagons

**Core Lesson Essential Questions:** How can you identify and name hexagons? E

**Topic: Lesson 117: Attributes for 2D Shapes (E)**

**Core Lesson Description:** 2D Shapes

**Core Lesson Student Learning Objectives:** Use the words alike and different to compare 2-D shapes by attributes

**Core Lesson Essential Questions:** How can you use the words alike and different to compare two- dimensional shapes? (E)

**Topic: Lesson 123 and 124: Solid Shapes- Spheres (E)**

**Core Lesson Description:** Solid shapes

**Core Lesson Student Learning Objectives:** Identify, name, and describe three- dimensional spheres

**Core Lesson Essential Questions:** How can you identify, name, and describe spheres? E

**Topic: Lesson 125: Solid Shapes- Cubes (E)**

**Core Lesson Description:** Solid shapes

**Core Lesson Student Learning Objectives:** Identify, name, and describe three- dimensional shapes including cubes

**Core Lesson Essential Questions:** How can you identify, name, and describe cubes? E

**Topic: Lesson 126: Solid Shapes- Cylinders(E)**

**Core Lesson Description:** Solid shapes

**Core Lesson Student Learning Objectives:** Identify, name, and describe three- dimensional shapes including cylinders

**Core Lesson Essential Questions:** How can you identify, name, and describe cylinders? E

**Topic: Lesson 127: Solid Shapes- Cones (E)**

**Core Lesson Description:** Solid shapes

**Core Lesson Student Learning Objectives:** Identify, name, and describe three dimensional shapes including cones

**Core Lesson Essential Questions:** How can you identify, name, and describe cones? E

**Topic: Lesson 139 and 140: Review Solid Shapes**

**Core Lesson Description:** Review solid shapes

**Topic: Lesson 141: Assessment**

**Core Lesson Description:** Assessment

## Unit: Two- and Three- Dimensional Shapes

**Month:** May

**Skills:**

1. Describe objects in the environment using names of shapes and describe the relative positions of these objects using terms such as above, below, beside, in front, behind and next to
2. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts and other attributes

3. Model shapes in the world by building shapes from components and drawing shapes

**Essential Questions:**

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

**Content:**

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

**Vocabulary:**

Addition

Area

Capacity

Circle

Cone

Corners (vertices)

Cube

Cylinder

Digit

Equal

Greater than

Length

Less than

One

Place value

Quantity

Rectangle

Sides

Sphere

Square

Subtraction

Tens

Total

Triangle

Weight

**Topic: Lesson 108: 2D Shapes- Circles (E)**

**Core Lesson Description:** 2D shapes

**Core Lesson Student Learning Objectives:** Describe attributes of circles

**Core Lesson Essential Questions:** How can you describe circles? E

**Topic: Lesson 110: Attributes of Squares (E)**

**Core Lesson Description:** 2D Shapes

**Core Lesson Student Learning Objectives:** Describe attributes of squares

**Core Lesson Essential Questions:** How can you describe squares? E

**Topic: Lesson 112: 2D Shapes- Triangles (E)**

**Core Lesson Description:** 2D shapes

**Core Lesson Student Learning Objectives:** Describe attributes of triangles

**Core Lesson Essential Questions:** How can you describe triangles? E

**Topic: Lesson 114: 2D Shapes- Rectangles (E)**

**Core Lesson Description:** 2D shapes

**Core Lesson Student Learning Objectives:** Describe attributes of rectangles

**Core Lesson Essential Questions:** How can you describe rectangles? E

**Topic: Lesson 116: 2D Shapes- Hexagons (E)**

**Core Lesson Description:** 2D Shapes

**Core Lesson Student Learning Objectives:** Describe attributes of hexagons

**Core Lesson Essential Questions:** How can you describe hexagons? E

**Topic: Lesson 118: Problem Solving (E)**

**Core Lesson Student Learning Objectives:** Solve problems by using the strategy draw a picture

**Objectives:**

**Core Lesson Essential Questions:** How can you solve problems using the strategy draw a picture? E

**Topic: Lesson 119: 2D and 3D Shape Review**

**Core Lesson Description:** Review

**Topic: Lesson 120: 2D and 3D Shape review**

**Core Lesson Description:** Review

**Topic: Lesson 121**

**Core Lesson Description:** Assessment

**Topic: Lesson 122: Solid Shapes**

**Core Lesson Description:** Solid Shapes

**Core Lesson Student Learning Objectives:** Analyze and compare three dimensional shapes by attributes

**Core Lesson Essential Questions:** How can you show which shapes stack, roll, or slide?

**Topic: Lesson 128 and 129: Problem Solving ((I)**

**Core Lesson Description:** Solid shapes

**Core Lesson Student Learning Objectives:** Solve problems by using the strategy use logical reasoning

**Core Lesson Essential Questions:** How can you solve problems using the strategy use logical reasoning? (I)

**Topic: Lesson 130 and 131: Problem Solving (I)**

**Core Lesson Description:** Solid shapes

**Core Lesson Student Learning Objectives:** Model 2D and 3D shapes by building and modeling

**Core Lesson Essential Questions:** How can you use the terms above and below to describe shapes in the environment? (I)

**Topic: Lesson 132 and 133: Solid Shapes with Positional Words (E)**

**Core Lesson Description:** Positional words to describe Solid shapes

**Core Lesson Student Learning Objectives:** Use the terms above and below to describe shapes in the environment

**Core Lesson Essential Questions:** How can you use the terms above and below to describe shapes in the environment? E

**Topic: Lesson 134 and 135 : Solid Shapes with Positional Words (E)**

**Core Lesson Description:** Positional words to describe solid shapes

**Core Lesson Student Learning Objectives:** Use the terms beside and next to to describe shapes in the environment

**Core Lesson Essential Questions:** How can you use the terms besides and next to describe shapes in the environment? (E)

**Topic: Lesson 136 and 137: Solid Shapes with Positional Words (E)**

**Core Lesson Description:** Positional Words to describe solid shapes

**Core Lesson Student Learning Objectives:** Use the terms in front of and behind to describe shapes in the environment

**Core Lesson Essential Questions:** How can you use the terms in front of and behind to describe shapes in the environment? (E)

**Topic: Lesson 138: Review Solid Shapes**

**Core Lesson Description:** Review solid shapes

## Unit: Measurable Attributes

**Month:** May

**Skills:**

1. Describe, measurable attributes of objects, such as length, weight, area or capacity
2. Describe several measurable attributes of a single object
3. Compare two objects with a measurable attribute in common and describe the difference

**Essential Questions:**

1. What does it mean to estimate or analyze numerical quantities?
2. What makes a tool and/or strategy appropriate for a given task?
3. What does "what" we measure influence "how" we measure?
4. In what ways are the mathematical attributes of objects or processes measured, calculated and/or interpreted?
5. How can data be organized and represented to provide insight into the relationship between quantities?
6. How does the type of data influence the choice of display?
7. How can probability and data analysis be used to make predictions?

**Content:**

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

customary units of measure
3. Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions
4. Data can be modeled and used to make inferences

**Vocabulary:**

Addition

Area

Capacity

Circle

Cone

Corners (vertices)

Cube

Cylinder

Digit

Equal

Greater than

Length

Less than

One

Place value

Quantity

Rectangle

Sides

Sphere

Square

Subtraction

Tens

Total

Triangle

Weight

**STANDARDS:**

**STANDARDS**

STATE: PA Core Standards (2014)

| | |
|---|---|
| CC.2.4.K.A.1 (Advanced) | Describe and compare attributes of length, area, weight, and capacity of everyday objects. |

(* standards consolidated from Topic level)

**Topic: Lesson 142: Comparing Length (E)**

**Core Lesson**

**Student Learning Objectives:** Directly compare the lengths of 2 objects

**Core Lesson Essential Questions:** How can you compare the lengths of two objects? (E)

**STANDARDS**

STATE: PA Core Standards (2014)

CC.2.4.K.A.1 (Advanced) Describe and compare attributes of length, area, weight, and capacity of everyday objects.

**Topic: Lesson 143: Comparing Heights (E)**

**Core Lesson Student Learning Objectives:** Directly compare the heights of 2 objects

**Core Lesson Essential Questions:** How can you compare the heights of two objects? E

**Topic: Lesson 144: Problem Solving (E)**

**Core Lesson Student Learning Objectives:** Solve problems by using the strategy draw a picture

**Core Lesson Essential Questions:** How can you solve problems using the strategy draw a picture? E

**Topic: Lesson 145: Comparing Weight (E)**

**Core Lesson Student Learning Objectives:** Directly compare the weights of 2 objects

**Core Lesson Essential Questions:** How can you solve problems using the strategy draw a picture? E

**Topic: Lesson 146: Measurable Attributes**

**Core Lesson Student Learning Objectives:** Describe several measurable attributes of a single object

**Core Lesson Essential Questions:** How can you describe several ways to measure one object? E

**Topic: Lesson 147: Review Measurable Attributes**

**Core Lesson Student Learning Objectives:** Review

**Topic: Lesson 148: Review Measurable Attributes**

**Core Lesson Student Learning Objectives:** Review

**Topic: Lesson 149: Assessments**

**Core Lesson**
**Student Learning** Assessment
**Objectives:**

**Unit: Object Classification and Count**

**Month:** May

**Skills:**

1. Classify up to 20 objects using one attribute into categories; display the number of objects in each category; count and compare the quantities of each category and describe the difference

**Essential Questions:**

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

**Content:**

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

**Vocabulary:**

Addition

Area

Capacity

Circle

Cone

Corners (vertices)

Cube

Cylinder

Digit

Equal

Greater than

Length

Less than

One

Place value

Quantity

Rectangle

Sides

Sphere

Square

Subtraction

Tens

Total

Triangle

Weight

**STANDARDS:**

**STANDARDS**

STATE: PA Core Standards (2014)

| | |
|---|---|
| CC.2.4.K.A.4 (Advanced) | Classify objects and count the number of objects in each category. |

(* standards consolidated from Topic level)

**Topic: Lesson**

**STANDARDS**

STATE: PA Core Standards (2014)

CC.2.4.K.A.4 (Advanced) Classify objects and count the number of objects in each category.

**Topic: Lesson 150: Classifying and Count Objects**

**Core Lesson Student Learning Objectives:** Classify and count objects by color

**Core Lesson Essential Questions:** How can you classify and count objects by color? E

**Topic: Lesson 151: Classify and Counts Objects by Shape**

**Core Lesson Student Learning Objectives:** Classify and count objects by shape

**Core Lesson Essential Questions:** How can you classify and count objects by shape?

**Topic: Lesson 152: Classify and Count by Size**

**Core Lesson Student Learning Objectives:** Classify and count objects by size

**Core Lesson Essential Questions:** How can you classify and count objects by size? E

**Topic: Lesson 153: Using a Graph (E)**

**Core Lesson Student Learning Objectives:** Make a graph to count objects that have been classified into categories

**Core Lesson Essential Questions:** How can you make a graph to count objects that have been classified into categories? E

**Topic: Lesson 154: Use Graphs**

**Core Lesson Student Learning Objectives:** Read a graph to count objects that have been classified into categories

**Core Lesson Essential Questions:** How can you read a graph to count objects that have been classified into categories? E

**Topic: Lesson 155: Review Graphing**

**Core Lesson Description:** Review

**Core Lesson Essential Questions:** How can you solve problems using the strategy use logical reasoning?

**Topic: Lesson 156**

**Core Lesson Description:** Review

**Topic: Lesson 157: Assessment**

**Core Lesson Description:** Assessment

**Unit: End Of Year Assessment**

**Month:** May

**Topic: Lesson 158**

**Core Lesson Description:** End of Year Assessment

**Topic: Lesson 159**

**Core Lesson Essential Questions:** End Of Year Assessment

**Topic: Lesson 160**

**Core Lesson Description:** End of Year Assessment

**Unit: Object Quantity**

**Topic: Lesson 71**

**Core Lesson Description:** Problem Solving numbers through 15

**Core Lesson Student Learning Objectives:** Solve problems by using the strategy draw a picture.

**Core Lesson Essential Questions:** How can you solve problems using the strategy draw a picture?

**Topic: Lesson 79**

| | |
|---|---|
| **Core Lesson Description:** | Object Quantity 20 |
| **Core Lesson Student Learning Objectives:** | Model and count with 20 objects |
| **Core Lesson Essential Questions:** | How can you show and count 20 objects? |

**Topic: Lesson 3**

| | |
|---|---|
| **Core Lesson Description:** | Numbers |
| **Core Lesson Student Learning Objectives:** | Model and count 3 and 4 |
| **Core Lesson Essential Questions:** | How can you show and count 3 and 4 with objects? |

**Topic: Lesson 5**

| | |
|---|---|
| **Core Lesson Description:** | Numbers |
| **Core Lesson Student Learning Objectives:** | Model and count 5 |
| **Core Lesson Essential Questions:** | How can you show and count 5 objects? |

**Topic: Lesson 8**

| | |
|---|---|
| **Core Lesson Description:** | Numbers |
| **Core Lesson Student Learning Objectives:** | Count and order to 5 |
| **Core Lesson Essential Questions:** | How do you know that the order of numbers is the same as a set of objects that is one larger? |

**Topic: Lesson 9**

| | |
|---|---|
| **Core Lesson Description:** | Numbers |
| **Core Lesson Student Learning Objectives:** | Identify and write 0. |
| **Core Lesson** | |

**Essential Questions:** How can you identify and write 0 with words and numbers?

**Topic: Lesson 11**

**Core Lesson Description:** Review 0 - 5

**Topic: Lesson 22**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Model and count 6

**Core Lesson Essential Questions:** How can you show and count 6 objects?

**Topic: Lesson 24**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Model and count 7.

**Core Lesson Essential Questions:** How can you show and count 7 objects?

**Topic: Lesson 26**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Model and count 8

**Core Lesson Essential Questions:** How can you show and count 8 objects?

**Topic: Lesson 28**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Model and count 9

**Core Lesson Essential Questions:** How can you show and count 9 objects?

**Topic: Lesson 31 and 32**

**Core Lesson Description:** Review

**Topic: Lesson 34**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Model and count 10

**Core Lesson Essential Questions:** How can you show and count 10 objects?

**Topic: Lesson 1**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Model and count 1 and 2

**Core Lesson Essential Questions:** How can you show and count 1 and 2 with objects?

**Unit: Lesson 67**

**Month:**

1. Uses one-to-one correspondence when counting to 20
2. State the total number of objects counted, demonstrating understanding that the last number named tells the number of objects counted
3. Understand that each successive number name refers to a quantity that is one larger

**Essential Questions:**

1. How is mathematics used to quantify, compare, represent, and model numbers?
2. How can mathematics support effective communication?
3. How can patterns be used to describe relationships in mathematical situations?

**Content:**

1. Mathematical relationships among numbers can be represented, compared, and communicated
2. Patterns exhibit relationships that can be extended, described, and generalized

**Vocabulary:**

Addition

Area

Capacity

Circle

Cone

Corners (vertices)

Cube

Cylinder

Digit

Equal

Greater than

Length

Less than

One

Place value

Quantity

Rectangle

Sides

Sphere

Square

Subtraction

Tens

Total

Triangle

Weight

**Topic: Lesson 1**

| | |
|---|---|
| **Core Lesson Description:** | Numbers |
| **Core Lesson Student Learning Objectives:** | **Model and count 1 and 2** |
| **Core Lesson Essential Questions:** | How can you show and count 1 and 2 with objects? |

**Topic: Lesson 3**

| | |
|---|---|
| **Core Lesson Description:** | Numbers |
| **Core Lesson Student Learning Objectives:** | Model and Count 3 and 4 |
| **Core Lesson Essential Questions:** | **How can you show and count 3 and 4 with objects?** |

**Topic: Lesson 5**

| | |
|---|---|
| **Core Lesson Description:** | Numbers |
| **Core Lesson Student Learning Objectives:** | **Count and write 5** |
| **Core Lesson Essential Questions:** | **How can you count and write 5 with words and numbers?** |

**Topic: Lesson 8**

| | |
|---|---|
| **Core Lesson Description:** | Count and Order to 5 |
| **Core Lesson Student Learning Objectives:** | **Know that each successive number refers to a quantity that is one larger.** |
| **Core Lesson Essential Questions:** | **How do you know that the order of numbers is the same as a set of objects that is one larger?** |

**Topic: Lesson 9**

| | |
|---|---|
| **Core Lesson Description:** | Understand 0 |
| **Core Lesson Student Learning Objectives:** | Identify and write 0 |
| **Core Lesson Essential Questions:** | **How do you know that the order of numbers is the same as a set of objects that is one larger?** |

**Topic: Lesson 11**

| | |
|---|---|
| **Core Lesson Description:** | Review 0 - 5 |

**Topic: Lesson 22**

| | |
|---|---|
| **Core Lesson Description:** | Numbers |
| **Core Lesson Student Learning Objectives:** | **Model and count 6** |
| **Core Lesson Essential Questions:** | **How can you show and count 6 objects?** |

**Topic: Lesson 24**

| | |
|---|---|
| **Core Lesson Description:** | Numbers |
| **Core Lesson Student Learning Objectives:** | Model and count 7 |
| **Core Lesson Essential Questions:** | **How can you show and count 7 objects?** |

**Topic: Lesson 26**

| | |
|---|---|
| **Core Lesson Description:** | Numbers |
| **Core Lesson** | |

**Student Learning Objectives:** Model and count 8

**Core Lesson Essential Questions:** **How can you show and count 8 objects?**

**Topic: Lesson 28**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Model and count 9

**Core Lesson Essential Questions:** **How can you show and count 9 objects?**

**Topic: Lesson 31**

**Core Lesson Description:** Review

**Topic: Lesson 32**

**Core Lesson Description:** Review

**Topic: Lesson 34**

**Core Lesson Description:** Numbers

**Core Lesson Student Learning Objectives:** Model and count 10

**Core Lesson Essential Questions:** **How can you show and count 10 objects?**