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| **Select a Course:** | Math Grade K |
| **Teacher:** | CORE Math Grade K |
| **Course:** | Math Grade K |
| **Year:** | 2016-17 |
| **Months:** | - All - |

August

Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language

September

## Kindergarten Math Counting 0-10 Objects

Approximate Time Frame: 4 weeks

| Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language |
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| Counting is used to find how many or how much a quantty represents.<br><br>The last number said when counting a quantity of objects is the total number of objects in that group.<br><br>The total number of objects is represented with a numeral.<br><br>Counting one more will be the next larger number. | Why do we count?<br><br>How is number order helpful to us?<br><br>What can numerals represent? | K.CC.A.1 - Know number names and the count sequence ~ Count to 100 by ones and by tens.<br><br>K.CC.A.3 - Know number names and the count sequence ~ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).<br><br>K.CC.B.4a - Count to tell the number of objects ~ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.<br><br>K.CC.B.4b - Count to tell the number of objects ~ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.<br><br>K.CC.B.4c - Count to tell the number of objects ~ Understand that each successive number name refers to a quantity that is one larger. | **Prerequisite Skills/Concepts:** *Students should already be able to...*<br>Recall hearing/seeing others rote count and count objects.<br><br>Seqence and order of counting numbers.<br><br>Names of numerals.<br><br>Subitize (instantly recognize) within 5.<br><br>Use one-to-one correspondence when counting.<br><br>Know and say the standard order when counting.<br><br>Count within 10 (including 0).<br><br>Name the next number in a counting sequence.<br><br>Number recognition to count objects and pictures, or count out appropriate quantities of objects in real-world situations.<br><br>Sense of quantity to recognize that the | Number names (zero, one, two, three, four, five, six, seven, eight, nine, ten)<br><br>Number<br><br>Numerals<br><br>How many<br><br>Count<br><br>Order<br><br>**Supplemental Terms:**<br>Cardinality<br>Quantity |

number of objects is the same regardless of the arrangement. For example a group of 6 objects is the same quantity regardless of wether they are scattered or arranged in a line, circle, regctangle, die or domino patttern.

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

**2. *Reason abstractly and quantitatively.** Students understand that numbers represent quantity.

**3. Construct viable arguments and critique the reasoning of others**. Students represent their arguments through the act of counting objects and stating the total quantity counted. They also represent their arguments when counting out a quantity of objects to represent a numeral. They critique each other's reasoning when discussing whether they agree or disagree with peers who have counted the same set of objects.

***4, Model with mathematics.** Students model the value of numbers with objects and visuals.

**5. Use appropriate tools strategically.**

**6. Attend to Precision.** Students attend to the precise sequence of number names when counting. This includes attention to the value of zero.

**7. Look for and make use of structure.** Students will recognize the appropriate order for saying the counting sequence. Students recognize the familiar visual arrangements to

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| | | | begin subitizing.<br><br>***8. Look for and express regularity in repeated reasoning.** Students use their understanding of the structure and sequence of numbers to count appropriately in a variety of contexts. They use repated reasoning to understand that the value of a number is consistent regardless of the arrangement of objects. (Conservation of number)<br><br>**Advanced Skills/Concepts:** *Some students may be read to...*<br>~ Subitize (instantly recognize) objects in different arrangments and begin using small groups or units when counting objects.<br>~ Use grouping strategies when they count.<br>~ Begin predicting "what's next?" when asked about the next number in a sequence. | |
| | | K.CC.A.1 - Know number names and the count sequence ~ Count to 100 by ones and by tens.<br><br>K.G.A.1 - Identify and describe shapes ~ 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 of, behind, and next to. | K.CC.1= Routines<br><br>K.G.1=Centers | |

**Grade Kindergarten Math Position Language** Unit can be one to two weeks. This unit continues into October and can be assessed in October.

| Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language |
|---|---|---|---|---|
| Positional words can be used to describe relative position of objects in real life environment and numbers in the counting sequence.<br><br>Objects and people have position relative to other objects. | How are positional words used in math? | K.G.A.1 - Identify and describe shapes ~ 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 of, behind, and next to.<br><br>WIDA.2012.K.3.1 - Entering ~ Indicate attributes of objects (e.g., "big", "small") using gestures and words in small groups | Language for relative position of objects to model and describe objects in their environment.<br><br>Knowledge of position and position language when using and describing the counting sequence.<br><br>**Make Sense of Problems and** | Above<br><br>Below<br><br>Beside<br><br>In Front of<br><br>Behind<br><br>Next to<br><br>On top of |

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| | | | | **persevere in solving them.** Students will make sense of the position terms to describe and model relative positions of objects and numbers.<br><br>**Reason abstractly and quantitatively.** Students will reason about the sequence of numbers and the terms used to describe it.<br><br>*** Construct viable arguments and critique the reasoning of others.** Students construct arguments when they explain the locations of objects or numbers, or why they have used a particular term to describe the position. They will critique others when they explain why they agree or disagree with them regarding the positional language or position used in the placement of objects or numbers.<br><br>*** Model with mathematics.** Students will begin using mathematical terms to describe objects in real life contexts. They will begin looking at numerals in context of location.<br><br>**Use appropriate tools strategicially.** Students use their objects to model the positional language.<br><br>*** Attend to Percision.** Students attend to precision by listening to the precise language of directions and either repeating or acting out situations involving relative positions.<br><br>**Look for and make use of structure.** Through developing understanding of positional words, students will be able to describe the counting sequence. | Inside<br>Outside<br>Under |

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| | | | | *** Look for and express regularity in repeated reasoning.** Students will use repeated reasoning as they connect the use of position language to both real-world objects and number positions.<br><br>Positional words of *above, below, beside, in front of, behind, next to* so that they can follow directions using these precise terms.<br><br>Apply the understanding of positional words to describe objects in real life context.<br><br>Use positional words to describe numbers and objects. | |
| | | | K.CC.A.1 - Know number names and the count sequence ~ Count to 100 by ones and by tens. | Count from 1-12. | |

October

**Kindergarten Math Counting 0-20** Unit is approximately 4-5 weeks.

| Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language |
|---|---|---|---|---|
| Each successive number name refers to a quantity that is one larger.<br><br>The last number name said is the total number of objects counted.<br><br>Relationships between numbers and quantities; connect counting to cardinality.<br><br>Knowledge of numbers 0-10 can be applied to predict order and sequence in higher numbers (10-20, 20-30, etc) | How does knowing numbers 0-10 help you in counting other numbers?<br><br>What is significant about the teen numbers?<br><br>How can you use 0-10 to predict other counting sequences? | K.CC.A.2 - Know number names and the count sequence ~ Count forward beginning from a given number within the known sequence (instead of having to begin at 1).<br><br>K.CC.A.3 - Know number names and the count sequence ~ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).<br><br>K.CC.B.5 - Count to tell the number of objects ~ Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. | **Prerequisite Skills/Concepts:**<br>~ Fluency in counting numbers 0-10.<br>~ Knowledge of number sequence.<br>~ Connecting "how many" with each number within 10.<br><br>**Knowledge:** *Students will know...*<br>~ Numerals.<br><br>**Skills:** *Students will be able to do...*<br><br>Count up to 20 objects in any organized arrangement.<br><br>**Skills:** *Students will be able to do...*<br><br>Count up to 10 objects in a scattered arrangment.<br><br>**Skills:** *Students will be able to do...* | Cardinality<br><br>Number Names<br><br>Numerals<br><br>Quantity<br><br>**Supplemental Terms:**<br><br>~ Number<br><br>~Count<br><br>~ Before<br><br>~ After<br><br>~ In Front of<br><br>~ Behind |

Count out a given quantity of objects within 20.

**Skills:** *Students will be able to do...*

Write numerals for quantitis within 20.

**Skills:** *Students will be able to do...*

Connect a numeral with a quantity.

**Highlighted Mathematical Practices: (Practices to be explicity emphasized are indicated with an *.)**

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

***2. Reason abstractly and quantitatively.** Students will use their understanding of position and quantity to count from any given number. They reason about the value of the numbers as they count quantities of objects and pictures or count out objects.

***3. Construct viable arguments and critique the reasoning of others.** Students construct arguments when they explain why they believe a quantity should be labled with a particular number or numeral. They critique each others' reasoning when they explain why they agree or disagree with totals or representations.

***4. Model with mathermatics.** Students will count within 10 and use manipulatives, pictures, symbols,

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| | | | | language and real-world situations to create models for each number.<br><br>**5. Use appropriate tools strategically.**<br><br>**6. Attend to precision.** Students attend to the precise language and order of the count sequence. They make sure they use the appropriate name for the quantity.<br><br>***7. Look for and make use of structure.** Students will apply understanding of numbers 0-10 to count and quantify numbers 0-20.<br><br>***8. Look for and express regularity in repeated reasoning.** Students can apply what they know 0-10 to the next 10 numbers based on the nature of our base-10 system.<br><br>**Advanced Skills/Concepts:**<br>~ Application of Base-10 number system to count other number sequences within 100. | |
| | | | K.CC.A.1 - Know number names and the count sequence ~ Count to 100 by ones and by tens.<br><br>K.CC.B.4 - Count to tell the number of objects ~ Understand the relationship between numbers and quantities; connect counting to cardinality.<br><br>K.CC.B.4a - Count to tell the number of objects ~ When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.<br><br>K.CC.B.4b - Count to tell the number of objects ~ Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.<br><br>K.CC.B.4c - Count to tell the number of objects ~ Understand that each successive number name refers to a quantity that is one larger. | **Transfer:**<br>*Students will apply...*<br>~Knowledge of numbers 0-10 to count and represent numbers up to 20.<br>~ Counting skills to answer the questions of "how many" for as many as 20 objets arranged in a line, a rectangular arry, or a circle, or as many as 10 things a scattered configuration given a number from 1-20, count out that many objects. | |

November

## Kindergarten Math Comparing and Measuring

Approximate TIme Frame: 4 Weeks

| Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language |
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| ~ Comparing quantity of numbers can be described as less than, greater than or equal to.<br><br>~ Some attributes are measurable and both numbers and words can be used to describe and compare the measurements.<br><br>~ Groups can be quantified for comparison and order.<br><br>~ Written numerals represent an amount and each numeral represents a different amount. | How do we determine measurable attributes of objects?<br><br>Why do we use attributes of objects to compare quantity? | K.CC.C.6 - Compare numbers ~ 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.1<br><br>K.CC.C.7 - Compare numbers ~ Compare two numbers between 1 and 10 presented as written numerals.<br><br>K.MD.A.1 - Describe and compare measurable attributes ~ Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.<br><br>K.MD.A.2 - Describe and compare measurable attributes ~ Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.<br><br>K.MD.B.3 - Classify objects and count the number of objects in each category ~ Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. | **Prerequisite Skills/Concepts:**<br><br>~ Understanding of quantity of numerals within 10.<br><br>~ Understand quantity of number in any configuration to answer "how many?" (within 10)<br><br>~ Counting numbers have measurable quantity.<br><br>**Knowledge:** *Students will know...*<br><br>How to compare objects based on quantity to identify more, less, or equal.<br><br>**Knowledge:** *Students will know...*<br><br>How to categorize objects using attributes.<br><br>**Knowledge:** *Students will know...*<br><br>How to measure and compare 2 objects.<br><br>**Knowledge:** *Students will know...*<br><br>Comparison language<br><br>**Skills:** *Students will be able to do...*<br><br>Identify counts of objects as more than, less than, or equal to.<br><br>**Skills:** *Students will be able to do...*<br><br>Sort objects into groups and count the number of objects in | Greater than<br><br>Less than<br><br>Equal to<br><br>More of<br><br>Less of<br><br>Attribute<br><br>Taller<br><br>Shorter<br><br>Length<br><br>Weight<br><br>Quantity<br><br>Number words<br><br>Numerals<br><br>Difference (within context of Measurement Standard)<br><br>Compare<br><br>Group/Unit<br><br>Sort<br><br>**Supplemental Terms:**<br><br>~ Number Words<br><br>~ Numerals<br><br>~ Count<br><br>~Longer<br><br>~ Shorter<br><br>~ Lighter<br><br>~Heavier |

each group.

**Skills:** *Students will be able to do...*

Compare and/or order groups by quantity.

**Skills:** *Students will be able to do...*

Measure and compare 2 objects using appropriate comparing words.

**Skills:** *Students will be able to do...*

Write all numerals within 20.

**Skills:** *Students will be able to do...*

Group objects by specific attributes.

**Advanced Skills/Concepts:**

~ Comparision of numbers using addition and subtraction number stories.

Highlighted Mathematical Practices: (Practices to be explicitly emphasized are indicated with an *.)

1. Make sense of problems and persevere in solving them.

*2. Reason abstractly and quantitatively.

3. Construct viable arguments and critique the reasoning of others.

4. Model with mathematics.

5. Use appropriate tools strategically.

*6. Attend to precision.

7. Look for and make

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| | | | use of structure.<br><br>*8. Look for and express regularity in repeated reasoning. | |
| | | K.CC.A.1 - Know number names and the count sequence ~ Count to 100 by ones and by tens.<br><br>K.CC.A.3 - Know number names and the count sequence ~ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).<br><br>K.CC.B.4 - Count to tell the number of objects ~ Understand the relationship between numbers and quantities; connect counting to cardinality. | **Transfer:** *Students will apply...*<br><br>~ Knowledge of quantity within numbers to sort objects into categories by count.<br><br>~ Understanding of attributes to categorize objects.<br><br>~ Describing objects based on measurable attributes.<br><br>~ Comparison language to describe the relationship between two objects based on measurable attributes. | |

December

| Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language |
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January

**Kindergarten Math Combinations Within 5** Approximate Time Frame: 4 weeks

| Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language |
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| The quanity of numbers can be combined in different groups of numbers.<br><br>Numbers can be decomposed with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations and can be demonstrated in more than one way.<br><br>Number combinations are used for addition and subtraction of numbers within 5.<br><br>Numbers are composed of other numbers.<br><br>Numbers can be | How many combinations of numbers can you find within 2? 3? 4? 5?<br><br>How can we represent number combinations within 5?<br><br>How can knowing how to put together and take apart numbers help form other numbers? | K.OA.A.1 - Understand addition, and understand subtraction ~ Represent addition and subtraction with objects, fingers, mental images, drawings1, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.<br><br>K.OA.A.2 - Understand addition, and understand subtraction ~ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.<br><br>K.OA.A.3 - Understand addition, and understand subtraction ~ Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).<br><br>K.OA.A.5 - Understand addition, and understand subtraction ~ Fluently add | **Prerequisite Skills/Concepts:**<br><br>~ Understand quantity of numbers within 5.<br><br>~ Write numbers within 20.<br><br>~ Understanding of decomposition of numbers.<br><br>~ Understanding of cardinality.<br><br>**Knowledge:** *Students will know...*<br><br>Put together and take apart models.<br><br>**Skills:** *Students will be able to do...* | Decompose<br><br>Compose<br><br>Addition<br><br>Subtraction<br><br>Word Problems<br><br>Number<br><br>Numeral<br><br>Equation<br><br>Represent<br><br>Take Apart<br><br>Put together |

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| | decomposed into other numbers. | | and subtract within 5. | Use knowledge of number combinations to fluenty add and subtract within 5.<br><br>**Skills:** *Students will be able to do...*<br><br>Represent addition and subtraction with multiple modalities.<br><br>**Skills:** *Students will be able to do...*<br><br>Represent addition and subtraction word problems with objects or drawings.<br><br>**Highlighed Mathematical Practices: (Practices to be explicity emphasized are indicated with an *.)**<br><br>**1. Make sense of problems and persevere in solving them.**<br><br>***2. Reason abstractly and quantitatively.** Students will demonstrate abstract reasoning when recording composition and decomposition with written symbols.<br><br>***3. Construct viable arguments and critique the reasoning of others.** Students will use different modalities to construct their arguments regarding number quantity and different cobinations of number. They will critique each other when they discuss the validity of various representations.<br><br>***4. Model with mathematics.** Students will represent number combinations with objects, fingers, drawings, expressions, equations, to model addition and | Additions sign/plus sign<br><br>Subtraction sign/minus sign<br><br>**Supplemental Terms:**<br><br>Modality |

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| | | | | subtraction.<br><br>***5. Use appropriate tools strategically.** Students will use tools such as links, snap cubes, color tiles, dice, dominoes, five and ten frames, number bonds, dot cards, two-color counters and various other counters to look at different combinations of the same number.<br><br>**6. Attend to precision.**<br><br>***7. Look for and make use of structure.** Students use the structures inherent in composition and decomposition of numbers to build fluency of number combinations within 5 as foundation for addition/subtraction.<br><br>**8. Look for and express regularity in repeated reasoning.** | |
| | | | K.CC.A.1 - Know number names and the count sequence ~ Count to 100 by ones and by tens.<br><br>K.CC.A.3 - Know number names and the count sequence ~ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). | **Transfer:**<br>*Students will apply...*<br><br>~ Knowledge of counting numbers and cardinality to build fluency of number combinations to 5.<br><br>~ Understanding of composition and decomposition to model real word situations involving addition and subtraction within 5. | |

February

**Kindergarten Math Combinations within 10** Approximate Time Frame: 4 Weeks

| Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language |
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| Different combinations of numbers within 10 represent addition and subtraction.<br><br>Word problems can be represented with objects or drawings. | How are word problems connected to number combinations?<br><br>How can I combine numbers to make a new number? | K.OA.A.1 - Understand addition, and understand subtraction ~ Represent addition and subtraction with objects, fingers, mental images, drawings1, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.<br><br>K.OA.A.2 - Understand addition, and | **Prerequisite Skills/Concepts:**<br><br>~ Use number combinations within 5 to add and subtract.<br><br>~ Undestanding of cardinatlity. | Decompose<br><br>Compose<br><br>Addition<br><br>Subtraction |

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| Equations can be build by decomposing numbers in more than one way.<br><br>Quantities can be created using a variety of individual sets. | | understand subtraction ~ Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.<br><br>K.OA.A.3 - Understand addition, and understand subtraction ~ Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).<br><br>K.OA.A.4 - Understand addition, and understand subtraction ~ For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.<br><br>K.OA.A.5 - Understand addition, and understand subtraction ~ Fluently add and subtract within 5. | ~ Write numbers within 20.<br><br>~ Represent word problems with objects or drawings.<br><br>**Knowledge:** *Students will know...*<br><br>Combinations of 10 using modalities.<br><br>**Knowledge:** *Students will know...*<br><br>Number combinations within 5.<br><br>**Skills:** *Students will be able to...*<br><br>Use knowledge of number combinations to fluenty add and subtraction within 5.<br><br>**Skills:** *Students will be able to...*<br><br>Represent addition and subtraction word problems with multiple modalities within 10. (objects and drawings)<br><br>**Skills:** *Students will be able to...*<br><br>Extend number combinations of 5 to combinations within 10 by using objects or drawings, and record the answer with a drawing or equations.<br><br>**Advanced Skills/Concepts:**<br><br>~ Students can build word problems using all modalities.<br><br>~ Students can extend combinations of 10 to fluent additions/subtraction within 10.<br><br>**Highlighted Mathematical Practices: (Practices to be explicitly emphasized are** | Word Problems<br><br>Number<br><br>Numeral<br><br>Equation<br><br>Represent |

**indicated with an *.)**

***1. Make sense of problems and persevere in solving them.** Students will make sense of real-word problems by representing the situations using manipulatives, pictures and equations.

**2. Reason absractly and quantitatively.** Students reason about the quantities they represent by making sure their visual models accurately represent the numerals and vice versa.

**3. Construct viable arguments and critique the reasoning of others.** Students construct arguments regarding the accuracy of their representations and critique others' reasoning when they consider whether they agree or disagree with their representations.

**4. Model with mathematics.** Students create visual models of the real-world problems using manipulatives and diagrams. They can also tell stories to represent numerical expressions and equations.

**5. Use appropriate tools strategically.**

**6. Attend to precision.**

**7. Look for and make use of structure.** Students exhibit understanding of this practice when they show that the number changes when you add or subtract, exvept when adding or subtracting zero.

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

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| | | | | Students demonstrate repeated reasoning when they show that there are multiple combinations of numbers that equal the same number, and there are multiple strategies to solve addition and subtraction problems. | |
| | | | | **Transfer:** *Students will apply...*<br><br>Number knowledge to solve addition and subtraction word problems, involving adding to, taking from, putting together and taking apart situations. | |

March

**Kindergarten Math Teen Numbers** Approximate Time Frame: 8 Weeks

| Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language |
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| Teen numbers are composed of a group of ten and some more. | How can I put together and take apart teen numbers? | K.CC.A.2 - Know number names and the count sequence ~ Count forward beginning from a given number within the known sequence (instead of having to begin at 1).<br><br>K.NBT.A.1 - Work with numbers 11-19 to gain foundations for place value ~ Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as 18 = 10 + 8); nderstand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.<br><br>K.OA.A.1 - Understand addition, and understand subtraction ~ Represent addition and subtraction with objects, fingers, mental images, drawings1, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. | **Prerequisite Skills/Concepts:**<br><br>*Students should already be able to...*<br><br>~ Fluency in combinations to 5.<br><br>~ Work with combinations to 10 using modalities.<br><br>~ Word problems using objects or drawings as well as recording the answer with drawings or equations.<br><br>**Knowledge:** *Students will know...*<br><br>Number names for teen numbers.<br><br>**Skills:** *Students will be able to do...*<br><br>Decompose/compose teen numbers into a group of ten and some ones, using modalities as well as a numerical representation.<br><br>**Skills:** *Students will be able to do...* | Decompose<br>Compose<br>Teen number<br>Number<br>Numeral<br>Equation<br>Unit<br>Leftover<br>Remainder<br><br>**Supplemental Terms:**<br>Base-ten system<br>Digit<br>ones, tens, hundreds |

Use objects/drawings to show how many tens and ones are in a number 11-19.

**Skills:** *Students will be able to do...*

Record compositions and decompositions using an equation.

**Advanced Skills/Concepts:** *Some students may be ready to...*

~ Students will compose and decompose teen numbers using equations and explain the relationship of equations to the value of the numbers.

~ Students compose and decompose numbers using doubles and doubles +1.

Highlighted Mathematical Practices: (Practices to be explicitly emphasized are indicated with an *.)

*1. Make sense of problems and persevere in solving them. Students will compose and decompose teen numbers.

2. Reason absractly and quantitatively. Student reason about the teen quantities they represnt by making sure their visual models and drawings accuratley represent the numerals.

3. Construct viable arguments and critique the reasoning of others .Students construct arguments regarging the accuracy of their representations and critique others reasoning when they consider weather they agree or disagree with

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| | | | | their representations.<br><br>4. Model with mathematics. Students will use manipulatives, drawing and ten frames to represent the teen numbers.<br><br>5. Use appropriate tools strategically. Students will use appropriate manuipulatives to show teen numbers.<br><br>6. Attend to precision. Students will count and re count to check for precision when making teen numbers.<br><br>7. Look for and make use of structure. Students will be sure that every teen number is composed of a ten and some ones.<br><br>8. Look for and express regularity in repeated reasoning. Students will demonstrate their understanding of teen numbers by knowing that they are always made of a ten. | |
| | | | K.CC.A.1 - Know number names and the count sequence ~ Count to 100 by ones and by tens.<br><br>K.CC.A.3 - Know number names and the count sequence ~ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).<br><br>K.OA.A.5 - Understand addition, and understand subtraction ~ Fluently add and subtract within 5. | **Transfer:** *Students will apply...*<br><br>Knowledge of smaller numbers (combinations to 5, combinations to 10) and counting to 10 to decompose teen numbers as "ten and some more ones" by using objects or drawings, and recording each composition or decomposition by a drawing or equation. | |

April

**Kindergarten Math Flat Shapes** No Time Frame Listed

| Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language |
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| Two-dimensional shapes are flat. | How can I describe a 2 D shape? | K.G.A.1 - Identify and describe shapes ~ Describe objects in the environment using names of shapes, and describe the | **Prerequisite Skills/Concepts:** *Students should* | Square |

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| | Attributes are used to compare and analyze shapes.<br><br>Basic shapes are used to create more complex shapes.<br><br>Two dimensional shapes can be built from components.<br><br>The location of objects are described by using positional words. | | relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.<br><br>K.G.A.2 - Identify and describe shapes ~ Correctly name shapes regardless of their orientations or overall size.<br><br>K.G.B.4 - Analyze, compare, create, and compose shapes ~ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).<br><br>K.G.B.5 - Analyze, compare, create, and compose shapes ~ Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.<br><br>K.G.B.6 - Analyze, compare, create, and compose shapes ~ Compose simple shapes to form larger shapes | *already be able to:*<br><br>~ Use positional language (above, below, next to, behind, in front of, beside) to describe the location of objects.<br><br>**Knowledge:** *Students will know...*<br><br>Names of two-dimensional shapes (squares, circles, triangles, rectangles)<br><br>**Knowledge:** *Students will know...*<br><br>Defining attributes of flat shapes.<br><br>**Skills:** *Students will be able to do...*<br><br>Draw shapes (circle, square, rectangle, triangle, hexagon)<br><br>**Skills:** *Students will be able to do...*<br><br>Build two-dimensional shapes from smaller shapes.<br><br>**Skills:** *Students will be able to do...*<br><br>Analyze and compare two-dimensional shapes using informal language (e.g. number of sides and vertices/ "corners" or having sides of equal length).<br><br>**Highlighted Mathematical Practices: (Practices to be explicitly emphasized are indicated with an *.)**<br><br>**1. Make sense of problems and persevere in solving them.**<br><br>***2. Reason abstractly and quantitatively.** Students reason about the attributes of two dimensional figures. | Circle<br><br>Triangle<br><br>Rectangle<br><br>Attribute<br><br>Side<br><br>Length<br><br>Vertices<br><br>Corners<br><br>**Supplemental Terms:**<br><br>Orientation |

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| | | | | **3. Construct viable arguments and critique the reasoning of others.**<br><br>**4. Model with mathematics.** Students find flat shapes in their world and reconstruct the shapes using mathematical tools.<br><br>**5. Use appropriate tools strategically.** Students will use tools to construct flat shapes and to compose composite figures using flat shapes.<br><br>***6. Attend to precision.** Students use informal language to describe flat shapes and will build complex shapes from simple shapes.<br><br>**7. Look for and make use of structure.** Shapes do not change their name, regardless of orientation or size. A shape can come in a variety of sizes, but the name is not identified by its size.<br><br>***8. Look for and express regularity in repeated reasoning.** Students will analyze and compare two-dimensional shapes to discuss similarities and differences between them. | |
| | | | K.CC.A.1 - Know number names and the count sequence ~ Count to 100 by ones and by tens.<br><br>K.CC.A.3 - Know number names and the count sequence ~ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).<br><br>K.NBT.A.1 - Work with numbers 11-19 to gain foundations for place value ~ Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as 18 = 10 + 8); nderstand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. | **Transfer:** *Students will apply...*<br><br>~ Knowledge of positional language to describe 2-dimensional shapes in the environment regardless of their size or orientation.<br><br>~ Knowledge of 2-dimensional figures to identify them and describe their features in real-world situations. | |

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| | | | K.OA.A.5 - Understand addition, and understand subtraction ~ Fluently add and subtract within 5. | | |

May

## Kindergarten Math Solid Shapes

Approximate Time Frame: 4-5 weeks

| Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language |
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| Three-dimensional shapes have unique attributes.<br><br>Three-dimensional shapes have specific names regardless of their orientations or overall size.<br><br>Shapes can be used to build pictures, designs and other shapes.<br><br>Shapes can be build from components. | How are 2D and 3D shapes alike and different?<br><br>Why is it important to use math words to describe 2-dimensional and 3-dimensional shapes? | K.G.A.1 - Identify and describe shapes ~ 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 of, behind, and next to.<br><br>K.G.A.2 - Identify and describe shapes ~ Correctly name shapes regardless of their orientations or overall size.<br><br>K.G.A.3 - Identify and describe shapes ~ Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).<br><br>K.G.B.4 - Analyze, compare, create, and compose shapes ~ Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).<br><br>K.G.B.5 - Analyze, compare, create, and compose shapes ~ Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.<br><br>K.G.B.6 - Analyze, compare, create, and compose shapes ~ Compose simple shapes to form larger shapes | **Prerequisite Skills/Concepts:**<br><br>Students will compose, analyze, and compare flat shapes to build descriptive knowledge of geometric attributes.<br><br>**Knowledge:** *Students will know...*<br><br>Attributes of flat and solid shapes.<br><br>**Knowledge:** *Students will know...*<br><br>Names of 2 and 3-dimensional shapes.<br><br>**Skills:** *Students will be able to do...*<br><br>Analyze and compare 2 and 3-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts and other attributes.<br><br>**Skills:** *Students will be able to do...*<br><br>Model shapes in the world by building shapes from components and drawing shapes.<br><br>**Skills:** *Students will be able to do...*<br><br>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 of, behind, and next to. | Attribute<br><br>Side<br><br>Length<br><br>Orientation<br><br>Square<br><br>Circle<br><br>Triangle<br><br>Rectangle<br><br>Hexagon<br><br>Cube<br><br>Cone<br><br>Cylinder<br><br>Sphere<br><br>Flat shape<br><br>Solid shape<br><br>Faces<br><br>Rectangular prism |

**Skills:** *Students will be able to do...*

Identify shapes as "flat" or "solid."

**Advanced Skills/Concepts:**

Students will determine defining attributes of 3-dimensional figures.

Highlighted Mathematical Practices: (Practices to be explicitly emphasized are indicated with an *.)

1. Make sense of problems and persevere in solving them.

*2. Reason abstractly and quantitatively. Students reason about the attributes of three dimensional figures.

3. Construct viable arguments and critique the reasoning of others.

4. Model with mathematics. Students find flat shapes in their world and reconstruct the shapes using mathematical tools.

5. Use appropriate tools strategically. Students will use tools to construct solid shapes and to compose composite figures using solid shapes.

*6. Attend to precision. Students use informal language to describe solid shapes and will build complex shapes from simple shapes.

7. Look for and make use of structure. Shapes do not change their name, regardless of orientation or size. A shape can come in a variety of sizes, but

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| | | | | the name is not identified by its size.<br><br>*8. Look for and express regularity in repeated reasoning. Students will analyze and compare three dimensional shapes to discuss similarities and differences between them. | |
| | | | K.CC.A.1 - Know number names and the count sequence ~ Count to 100 by ones and by tens.<br><br>K.CC.A.3 - Know number names and the count sequence ~ Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).<br><br>K.NBT.A.1 - Work with numbers 11-19 to gain foundations for place value ~ Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as 18 = 10 + 8); nderstand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. | **Transfer:**<br>*Students will apply...*<br><br>~ Knowledge of two-dimensional shapes to three-dimensional shapes to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).<br><br>~ Modeling of shapes in the world by building shapes from components and drawing shapes. | |

| | Enduring Understandings | Essential Questions | Standards | Knowledge & Skills | Academic Language |
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| July | | | | | |