Mathematics (K)

Mathematics

Course Overview

In the kindergarten math curriculum the learner will:

- know number names
- count the number of objects
- compare numbers
- add to and take away from numbers
- classify objects based on characteristics
- identify and create geometric shapes.

Mathematics (kindergarten) courses typically introduce and reinforce basic concepts of mathematics such as counting whole numbers and understanding patterns, time, and money.

Scope And Sequence

Timeframe	Unit	Instructional Topics
10 Day(s)	Geometry	1. Idenifying and describing shapes 2. Position and Location of Shapes 3. Analyzing, comparing, and composing shapes
60 Day(s)	Counting and Cardinality	1. One to five 2. Comparing and Ordering numbers zero-five 3. Six to ten 4. Comparing and Ordering numbers zero to ten 5. Numbers to twenty 6. Numbers to one hundred
27 Day(s)	Operations and Algebraic Thinking	1. Understanding Addition 2. Understanding subtraction 3. Composing and Decomposing numbers to 10
11 Day(s)	Number and Operations in Base Ten	1. Composing Numbers 11 to 19 2. Decomposing Numbers 11-19
17 Day(s)	Measurement and Data	1. Measurement 2. Sorting, Classifying, Counting, and Categorizing data

Materials and Resources

EnVision math resources, manipulative kits, and teacher-created materials as needed. Classroom sets are located in the classroom.

Teachers use a variety of technological resources including web sites, IPads, Successmaker, Promethean Planet lessons, mini-whiteboards.

Prerequisites

None.

Course Details

Unit: Geometry   **Duration:** 10 Day(s)

Unit Overview

The learner will identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders,and spheres).

The learner will analyze, compare, and compose shapes.

Materials and Resources

EnVision math resources, manipulative kits, and teacher-created materials as needed. Classroom sets are located in the classroom.

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Summative Assessment

Common Core Assessment bundle published by KindergartenWorks.

Topic: Idenifying and describing shapes   **Duration:** 9 Day(s)

Topic Overview

rectangles, squares, circles, triangles, hexagons, solid figures, flat surfaces of solid figures.

Learning Targets

Rectangles

Children will identify and describe rectangles.

Squares

Children will identify and describe squares.

Circles
Children will identify and describe circles.

Triangles
Children will identify and describe triangles.

Hexagons
Children will identify and describe hexagons.

Solid Figures
Children will identify cubes, cones, cylinders, and spheres and relate them to real life objects.

Flat surfaces of solid figures
Children will identify three-dimensional figures and describe the shape of flat surfaces.

Problem Solving: Use Objects
Chidren will solve problems by using objects.

Topic: Position and Location of Shapes	**Duration:** 6 Day(s)

Topic Overview
Position words

Learning Targets
Inside and Outside
Children will describe an object as inside or outside a given place.

Above, Below, and On
Children will describe an object as above, below, or on a given object.

In Front of and Behind
Children will describe an object as in front of or behind, next to or beside a given object.

Left and Right
Children will describe an object as left or right of a given object.

Problem Solving: Act It Out
Children will solve a problem by acting it out.

Topic: Analyzing, comparing, and composing shapes	**Duration:** 6 Day(s)

Topic Overview
Same size, shape, comparing and building with solid figures.

Learning Targets
Same Size, Same Shape
Children will identify and draw figures that are the same size and the same shape.

Making Shapes from Other Shapes
Children will recognize that shapes can be combined to make other shapes.

Comparing Solid Figures
Children will identify solid figures that roll, stack, and/or slide on a flat surface.

Building with solid figures
Children will make shapes by combining 2 solid figures.

Problem Solving: Use Logical Reasoning
Children will use logical reasoning to solve problems.

Unit: Counting and Cardinality	**Duration:** 60 Day(s)

Mathematics (K)

Mathematics

Grade(s) K, Duration 1 Year
Required Course

Unit Overview
The learner will know number names and the count sequence.
The learner will count to tell the number of objects.
The learner will compare numbers.

Materials and Resources
EnVision math resources, manipulative kits, and teacher-created materials as needed. Classroom sets are located in the classroom.

Teachers use a variety of technological resources including web sites, IPads, Successmaker, Promethean Planet lessons, mini-whiteboards

Summative Assessment
Common Core Assessment bundle published by KindergartenWorks.

Topic: One to five	**Duration:** 8 Day(s)

Topic Overview
Counting, reading and writing numbers one to five.

Learning Targets
Counting 1, 2, and 3
Children will use objects to represent and count the quantities 1, 2, and 3.

Counting 1, 2, and 3 in different arrangements
Children will identify whether a particular set includes 1, 2, or 3 objects, regardless of how the objects are arranged.

Reading and writing 1, 2, and 3
Children will recognize and write the numerals that describe the quantities 1, 2, and 3.

Counting 4 and 5
Children will use objects to represent and count the quantities 4 and 5.

Counting 4 and 5 in different arrangements
Children will identify whether a particular set includes 4 or 5 objects.

Reading and writing 4 and 5
Children will recognize and write numerals that describe the quantities 4 and 5.

Problem solving: using objects
Children will solve problems by using objects.

Topic: Comparing and Ordering numbers zero-five	**Duration:** 10 Day(s)

Topic Overview
Comparison of numbers zero-five and ordinal numbers thru fifth.

Learning Targets
More, Fewer, and Same As
Children will use one-to-one correspondence to compare objects and decide whether one group has more, fewer, or the same number as the other group.

1 and 2 more
Children will recognize and identify a group of objects that has 1 more or 2 more than another group.

1 and 2 Fewer
Children will recognize and identify a group of objects that has 1 fewer or 2 fewer than another group.

The number 0
Children will understand that zero means none.

Reading and Writing 0
Children will recognize and write the numeral that describes the quantity of 0.

As many, more, and fewer
Children will use one-to-one correspondence to compare two groups and determine whether one group has more, fewer, or as many as the other group.

Ordering numbers 0 to 5
Children will use objects to order numbers 0 to 5 in sequence.

Ordinal Numbers Through Fifth
Children will use words first through fifth to identify ordinal positions.

Problem Solving: Use Objects
Children will use objects to show the number in each group, order the number of objects in each group, and identify the group that has the most or fewest number of objects.

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Topic: Six to ten	**Duration:** 8 Day(s)

Topic Overview

Counting, reading and writing numbers six to ten

Learning Targets

Counting 6 and 7

Children will use objects to represent and count the quantities of 6 and 7.

Reading and Writing 6 and 7

Children will recognize and write the numerals that describe the quantities of 6 and 7.

Counting 8 and 9

Children will use objects to represent and count the quantities of 8 and 9.

Reading and Writing 8 and 9

Children will recognize and write numerals that describe the quantities of 8 and 9.

Counting 10

Use objects to represent and count the quantity 10.

Reading and Writing 10.

Children will recognize and write the numeral that describes the quantity of 10.

Problem Solving: Look for a Pattern

Children will solve problems by identifying growing patterns and predicting what comes next.

Topic: Comparing and Ordering numbers zero to ten	**Duration:** 11 Day(s)

Topic Overview

Comparing numbers using "more" and "few" , ordering thru ten and on a number line.

Learning Targets

Comparing numbers through 10

Children will compare two numbers using sets of objsects and one to one correspondence to determine which njmcer is greater and which is less.

Comparing numbers to 5

Given a number from 0-5 children will tell if the number is greater or less than 5.

Comparing numbers to 10

Given a number or set from 0-12, Children will decide if the number is greater or less than 10.

1 more

Children will use counting to identify a number that is 1 more than another number.

1 fewer

Children will use counting to identify a number that is 1 fewer than another number.

2 more

Children will use counting to identify a number that is 2 more than another number

2 fewer

children will use counting to identify a number that is 2 fewer than another number.

Ordering numbers through 10

children will order numbers 0 through 10 in sequence.

ordering numbers on a number line

children will use a number line to count numbers 0-10 in order

problem solving:using objects

Children will solve problems by using counters to show 1 more and 2 more.

Topic: Numbers to twenty	**Duration:** 6 Day(s)

Topic Overview

Counting, reading and writing numbers to twenty.

Learning Targets

Counting, Reading and Writing 11 and 12

Children will recognize and write the numerals that describe the quantities 11 and 12.

Counting, Reading and Writing 13, 14 and 15.
Children will recognize and write the numerals that describe the quantities of 13, 14 and 15.

Counting, Reading and Writing 16 and 17.
Children will recognize and write the numerals that describe the quantities 16 and 17.

Counting, Reading and Writing 18, 19 and 20.
Children will recognize and write the numerals that describe the quantities 18, 19 and 20.

Problem Solving: Use Logical Reasoning
Children will solve problems by applying logical reasoning to identify missing numbers in a number sequence.

Topic: Numbers to one hundred

Duration: 7 Day(s)

Topic Overview
Counting to thirty, counting groups of ten, patterns on a hundreds chart, estimation.

Learning Targets
Counting to 30
Children will count to 30 objects.

About how many?
Children will use benchmarks to estimate quantities of groups.

Counting to 100
Children will count and write numbers to 100 on the hundred chart.

Counting Groups of Ten
Children will count groups of 10, up to 10 tens, and write how many.

Patterns on a hundreds chart
Children willuse a hundred chart to recognize patterns when counting by 2's and 10's.

Problem Solving: Look for a Pattern
Children will solve problems by looking for a pattern.

Unit: Operations and Algebraic Thinking

Duration: 27 Day(s)

Unit Overview
The learner wil understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Materials and Resources
EnVision math resources, manipulative kits, and teacher-created materials as needed. Classroom sets are located in the classroom.

Teachers use a variety of technological resources including web sites, IPads, Successmaker, Promethean Planet lessons, mini-whiteboards

Summative Assessment
Common Core Assessment bundle published by KindergartenWorks.

Topic: Understanding Addition

Duration: 8 Day(s)

Topic Overview
Stories of joining, using plus sign, finding sums, addition sentences

Learning Targets
Stories about joining
Children will act out number stories that involve joining two groups

More joining
Children will interpret illustrations that show joining groups and write the corresponding numbers.

Joining groups
Children will determine how many there are altogether when two groups are joined.

using the plus sign
Children will use the plus sign to represent joining groups when recording addition

finding sums
Children will identify and use the equal sign; add and write the sum.

Addition sentences
Children will write and solve addition sentences to represent joining situations.

Problem Solving: draw a picture
children will solve problems by drawing pictures about joining two groups

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Topic: Understanding subtraction	**Duration:** 9 Day(s)

Topic Overview
Separating, taking away, using the minus sign, finding differences

Learning Targets
Stories about Separating
Children will act out number stories that involve separating two groups.

Stories About Take Away
Children will determine how many are left when some objects in a group are taken away.

Stories about Comparing
Children will compare two groups to find how many more or fewer

Problem Solving: Act It Out
Children will act out and solve subtraction word problems and record the answers.

Using the Minus Sign
Children will use the minus sign (-) to represent "take-away" situations when recording subtraction.

Finding Differences
Children will use the equal (=), subtract and write the difference.

Subtraction Sentences
Children will write and solve subtraction sentences to represent take-away situations.

Problem Solving: Use Objects
Children will solve problems by choosing addition or subtraction.

Topic: Composing and Decomposing numbers to 10	**Duration:** 10 Day(s)

Topic Overview
Making and Writing numbers sentences for numbers 4-10

Learning Targets
Making 4 and 5
Children will use objects to show 4 and 5 in two parts.

Writing number sentences for 4 and 5
Children will write number sentences to describe the decomposition of 4 or 5 into two parts.

Making 6 and 7
Children will use objects to show 6 and 7 in two parts.

Writing number sentences for 6 and 7
Children will write number sentences to describe the decomposition of 6 or 7 into two parts.

Making 8 and 9
Children will use objects to show 8 and 9 into two parts.

Writing Number Sentence for 8 and 9
Children will write number sentences that add up to 8 and 9.

Making 10
Children use objects to show 10 in two parts.

Writing Number Sentences for 10
Children will write number sentences that show how two numbers can add to 10.

Problem Solving: Make a Graph
Children will construct graphs using real objects or pictures to answer questions.

Unit: Number and Operations in Base Ten	**Duration:** 11 Day(s)

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Grade(s) K, Duration 1 Year
Required Course

Unit Overview
The learner will work with numbers 11-19 to gain foundations for place value.

Materials and Resources
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Teachers use a variety of technological resources including web sites, IPads, Successmaker, Promethean Planet lessons, mini-whiteboards

Summative Assessment
Common Core Assessment bundle published by KindergartenWorks.

Topic: Composing Numbers 11 to 19	**Duration:** 5 Day(s)

Topic Overview
Making numbers 11-19

Learning Targets
making 11, 12 and 13
Children will represent 11, 12, and 13 as the composition of 10 plus 1,2 or 3

Making 14, 15 and 16
Children will represent 14,15 and 16 as the composition of 10 plus 4,5 or 6

Making 17,18 and 19
Children will represent 17, 18 and 19 as the composition of 10 plus 7,8 or 9

Problem solving: look for a pattern
children will use drawings and number sentences to identify patterns on the first two rows of the hundreds chart

Topic: Decomposing Numbers 11-19	**Duration:** 6 Day(s)

Topic Overview
Creating sets to 19 and parts of 11-19

Learning Targets
Creating sets to 19
Children will use objects to create sets to 19.

Parts of 11, 12, and 13
Children will represent the decomposition of 11, 12, and 13 as ten ones and additional ones.

Parts of 14, 15, and 16
Children will represent the decomposition of 14, 15, and 16 as one ten and four, fice, or six ones.

Parts of 17, 18, and 19
Children will make drawings and write number sentences that represent the decomposition of 17, 18, and 19 into ten and 7, 8, or 9 ones.

Problem Solving: Looking for a pattern
Children will identify patterns found in decomposing the teen numbers, including the constant of one ten and the variable number of ones. They will make drawings and write number sentences for numbers 11 to 19.

Unit: Measurement and Data	**Duration:** 17 Day(s)

Unit Overview
The learner will describe and compare measurable attributes.
The learner will classify objects and count the number of objects in categories.

Materials and Resources
EnVision math resources, manipulative kits, and teacher-created materials as needed. Classroom sets are located in the classroom.

Teachers use a variety of technological resources including web sites, IPads, Successmaker, Promethean Planet lessons, mini-whiteboards

Summative Assessment
Common Core Assessment bundle published by KindergartenWorks.

Topic: Measurement	**Duration:** 9 Day(s)

Topic Overview
Describe objects by more than one attribute, compare length, height, capacity and weight.

Learning Targets
Describing Objects by More Than One Attribute
Children will recognize and describe the measurable attributes of objects.

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Comparing Length
Children will directly compare objects by length.

More Comparing Objects by Length
Children will compare and order objects by length.

Problem Solving: Try, Check and Revise
Children will solve problems by comparing lengths and revising their answers.

Comparing by Height
Children will directly compare objects by height.

More Comparing Objects by Height
Children will compare and order objects by height.

Comparing by Weight
Children will directly compare objects by weight.

Topic: Sorting, Classifying, Counting, and Categorizing data   **Duration:** 8 Day(s)

Topic Overview
Same and different, sorting, graphs

Learning Targets
Same and Different
Children will identify same and different by the attributes of color, shape, size and kind.

Sorting by one attribute
Children will sort objects by one attribute such as color, shape, size or kind.

sorting the same set in different ways
Children will sort the same set in different ways.

sorting by more than one attribute
children will use more than one attribute to sort a set of objects.

problem solving:use logical reasoning
children will solve problems by thinking logically

Real Graphs
Children will make and read a real graph.

Picture graphs
children will make and read a picture graph.