MIDLAND PARK PUBLIC SCHOOLS
Midland Park, New Jersey
CURRICULUM

Math
Kindergarten

Aligned to NJSLS Standards

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CCCS 8/2011
Addenda 5/2016
NJSLS 5/2017

UNIT OVERVIEW

Content Area: Mathematics

Unit Title: Basic Facts & Algebra Concepts

Grade Level: K

Unit Summary:

Basic Facts - 1 thru 5

Addition/Subtraction

- one more
- two more
- one fewer
- two fewer
- joining/in all/altogether
- left/take away/more/fewer
- number stories
- plus sign, minus sign, equal sign
- sum/difference
- addition/subtraction sentence

LEARNING TARGETS

Standards: **NJSLS**

Domain: **K.OA** Operations & Algebraic Thinking

Clusters:

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

NJSLS Standards:

K.OA.A.1. Represent addition and subtraction up to 10 objects, fingers, mental images, drawings[1], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

K.OA.A.2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

K.OA.A.3. 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).

K.OA.A.4. 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.

K.OA.A.5. Demonstrate fluency for addition and subtraction within 5.

Unit Essential Questions:

- How can we make our numbers work for us?
- How can we combine two groups to find a total?
- What happens when we separate some objects from a group?
- How do we find the value of a number sentence?

Unit Enduring Understandings:

- Addition is the joining of groups.
- When you join two groups your total number is larger than both the numbers you started with.
- Subtraction is separating (taking away) or comparing groups.
- When you separate or take away from a group the number you are left with is less than you started with.

Unit Learning Targets:

Students will ...

Basic Facts

- demonstrate immediate recall of addition facts 1 thru 5

Addition/Subtraction

- be able to show ways to make 2 – 10
- demonstrate understanding utilizing manipulatives of 1 more, 2 more, 1 fewer, 2 fewer
- be able to distinguish between a joining and separating story
- be able to act out number stories that involve joining or separating two groups
- utilizing number stories write a number sentence to solve
- Utilize the plus sign, minus sign, and equal sign in writing a proper number sentence and solving.

EVIDENCE OF LEARNING

Summative Assessment: (X DAYS)

- Diagnostic Checkpoint Test
- Cumulative Review and Test Prep
- Practice Worksheets
- Math Journal

Formative Assessments:

- Diagnosing Readiness for Chapter Test
- Basic Facts Timed Test
- Chapter Test

Equipment Needed:

- Manipulatives – counters
- Work mats
- Whiteboards/markers
- Vocabulary cards

Teacher Resources:

- Scott Foresman – Addison Wesley NJ Mathematics Teacher's Edition

LESSON PLANS		
Lesson #	**Lesson Name**	**Time frame (hours/days)**
Teacher Notes:		
Curriculum Development Resources:		

UNIT OVERVIEW

Content Area: Mathematics

Unit Title: Geometry and Fractions

Grade Level: Kindergarten

Unit Summary:

Geometry

- solid figures
- plane shapes
- flat surfaces
- stack
- slide
- flip
- turn

Fractions

- matching parts
- equal parts
- whole
- halves
- fourths

LEARNING TARGETS

Standards: **NJSLS**

Domain: **K.G** Geometry

Clusters:

- Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).
- Analyze, compare, create, and compose shapes.

NJSLS Standards:

K.G.A.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 of*, *behind*, and *next to*.

K.G.A.2. Correctly name shapes regardless of their orientations or overall size.

K.G.A.3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

K.G.B.4. 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).

K.G.B.5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

K.G.B.6. Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*

Unit Essential Questions:

- What is geometry?
- How are plane shapes and solid figures related?
- What is a fraction?
- What is a fraction's relation to a whole number?
- How can a whole be divided into equal parts?
- What do the terms equal and unequal mean?

Unit Enduring Understandings:

- Geometry is the study of shapes and spatial relations.
- Fractions represent quantities less than, equal to, or greater than a whole.

Unit Learning Targets:
Students will ...

Geometry

- be able to identify and compare solid figures and their attributes
- be able to identify and describe plane shapes
- combine and separate shapes
- be able to perform slides, flips and turns of a shape
- identify symmetrical shapes

Fractions

- be able to identify equal parts of a whole
- be able to use concrete objects or pictures to divide a whole or a set into fractional parts
- be able to identify from a picture halves and fourths of a whole

EVIDENCE OF LEARNING

Summative Assessment: (X DAYS)

- Diagnostic Checkpoints
- Cumulative Review and Test Prep
- Practice Worksheets
- Math Journal

Formative Assessments:

- Diagnosing Readiness for Chapter Test
- Chapter Test

Equipment Needed:

- Solid figures
- Plane Shapes
- Counters
- Fractions – circles, rectangles

Teacher Resources:

- Scott Foresman – Addison Wesley NJ Mathematics Teacher's Edition

LESSON PLANS		
Lesson #	**Lesson Name**	**Time frame (hours/days)**

Teacher Notes:

Curriculum Development Resources:

UNIT OVERVIEW	
Content Area:	Mathematics
Unit Title:	Measurement and Data
Grade Level:	K

Unit Summary:

Position/Location

- positional words

Sorting/Classifying

- same (alike)
- different
- sorting rules
- belong/does not belong

Patterns

- repeating – AB, AAB, ABB, AABB, ABC, AABC, AABBC, AABBCC

Money

- pennies, nickels, dimes, quarters, dollars
- dollar and cents notation

Time

- day, night
- morning, afternoon, evening
- analog/digital clock
- hour – o'clock
- more time/less time

Calendar

- days of week
- months of year
- yesterday, today, tomorrow
- first, next, last
- before, after
- seasons – Summer, Fall, Winter, Spring

Length and Height

- larger, smaller
- small, medium, large
- big, bigger, biggest
- smallest, largest
- longer than, shorter than

- same length
- feet

Capacity

- **Volume**
  -empty
  -full
  -hold more, holds less

- **Weight**
  -heavier
  -lighter
  -same

Temperature

- Fahrenheit

Graphs

- bar graphs
- pictographs

Tables and Charts

LEARNING TARGETS

Standards: **NJSLS**

Domain: **1.MD** Measurement & Data

Clusters:

- Describe and compare measurable attributes.
- Classify objects and count the number of objects in each category.

NJSLS Standards:

K.MD.A.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

K.MD.A.2. 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. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

K.MD.B.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.[1]

[1] Limit category counts to be less than or equal to 10.

Unit Essential Questions:

- Why are positional words important and how do we utilize them?
- What are patterns and where do we find them?
- How do we apply the concept of measurement to our lives?
- Why do we use standard measurement?
- How do measurements help us to compare objects?
- How does graphing data help us understand information better?

Unit Enduring Understanding:

- Positioning, sorting and classifying helps us to organize.
- Measurement is used in our daily lives to compare lengths, capacity, weight and temperature.
- Standard measurement is used to provide universal consistency.
- Graphing provides a visual way of organizing and understanding data.

Unit Learning Targets:
Students will ...

Position/Location

- Describe the position of objects utilizing positional words

Sorting/Classifying

- identify same and different by the attributes of color, shape, size
- sort sets in different ways
- utilize sorting rules
- be able to demonstrate understanding as to whether an item belongs/does not belong to a given set
- utilizing classification vocabulary be able to classify objects

Patterns

- create and extend patterns – sound and movement, color, and shape
- compare patterns for similarities
- create similar or different patterns from given patterns

Money

- identify pennies, nickels, dimes, quarters and dollars
- count groups of same coin to $1.00
- able to utilize and read money signs

Time

- identify time of day
- tell time to the hour on an analog and digital clock

- be able to compare activities requiring more time/less time
- explain and utilize minute, hour
- differentiate between day and night

Calendar

- recognizes and identifies the days of the week, months of the year, seasons
- utilize a calendar
- be able to order events

Length, Height and Weight

- compare based on attributes
- compare and order by size
- compare, order, estimate and measure by capacity
- compare, order, estimate and measure by weight

Temperature

- identify and read temperature on a thermometer

Graphs

- display data in graphs using objects or numbers
- compare and interpret data = similarities and differences

Tables and Charts

- utilize tally marks to record data
- organize data

EVIDENCE OF LEARNING

Summative Assessment: (X DAYS)

- Diagnostic Checkpoint Test
- Cumulative Review and Test Prep
- Practice Worksheets
- Math Journal

Formative Assessments:

- Diagnosing Readiness for Chapter Test
- Chapter Test

Equipment Needed:

- Counters
- Money – pennies, nickels, dimes, quarters, dollars
- Money placemat
- Clock
- Calendar

- Balance scale
- Thermometer
- Vocabulary cards

Teacher Resources:

- Scott Foresman – Addison Wesley NJ Mathematics Teacher's Edition

ESSON PLANS

Lesson #	Lesson Name	Time frame (hours/days)

Teacher Notes:

Curriculum Development Resources:

UNIT OVERVIEW

Content Area: Mathematics

Unit Title: Number Relationships (to 100)

Grade Level: K

Unit Summary:

Counting

- by ones
- skip counting by 5's and 10's

Writing Numbers

- number words to ten
- standard form
- expanded form to 19

Comparing/Ordering

- more
- less
- fewer
- same
- greater than
- less than
- more than
- fewer than
- before
- after
- between

Ordinal Numbers

- first thru twentieth

Place Value

- numbers 11-19

LEARNING TARGETS

Standards: NJSLS

Domain: K.CC Counting & Cardinality

Clusters:

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers.

NJSLS Standards:

K.CC.A.1. Count to 100 by ones and by tens.

K.CC.A.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

K.CC.A.3. 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).

K.CC.B.4. understand the relationship between numbers and quantities; connect counting to cardinality.

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.

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.

Understand that each successive number name refers to a quantity that is one larger.

K.CC.B.5. 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.

K.CC.C.6. 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]

K.CC.C.7. Compare two numbers between 1 and 10 presented as written numerals.

Domain: **K.NBT** Numbers and Operations in Base Ten

Clusters:

- Work with numbers 11-19 to gain foundations for place value.

NJSLS Standards:

K.NBT.A.1. 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); understand that these

Unit Essential Questions:

- What are numbers?
- What are numbers made up of?
- How are numbers used?
- How are numbers related?

Unit Enduring Understandings:

- Numbers are made up of digits that have place value.
- Numbers represent different quantities or amounts.
- Numbers are used for counting, ordering, comparing and measuring.

Unit Learning Targets:

Students will ...

Counting

- be able to count by ones and tens to 100

Writing Numbers

- read and write number words one through ten
- write one and two digit numbers through 20

Comparing/Ordering

- be able to order numbers using before, between, after for numbers up to 31
- be able to organize numbers least to greatest for numbers up to 31
- be able to organize numbers greatest to least for numbers up to 31

Place Value

- Be able to identify the number value for the ones place and tens place in numbers 11-20.

Ordinal Numbers

- use and understand verbal ordinal numbers for first through tenth

EVIDENCE OF LEARNING

Summative Assessment: (X DAYS)

- Diagnostic Checkpoint Test
- Cumulative Review and Test Prep
- Practice Worksheets
- Math Journal

Formative Assessments:

- Diagnosing Readiness for Chapter Test
- Diagnostic Checkpoint Test
- Basic Facts Timed Test
- Cumulative Review and Test Prep
- Chapter Test

Equipment Needed:

- Counters
- Number lines
- Hundred Chart
- Number flashcards
- Base 10 cubes
- Base 10 work mat
- Number tiles
- Whiteboard/markers
- Vocabulary cards

Teacher Resources:

- Scott Foresman – Addison Wesley NJ Mathematics Teacher's Edition

LESSON PLANS

Lesson #	Lesson Name	Time frame (hours/days)

Teacher Notes:

Curriculum Development Resources: