Mathematics Department

Kindergarten

Developed by: Leann Martin, Jessica Rizzo, & Grade K Teachers
Effective Date: September 2024

Scope and Sequence

Month	Kindergarten
September	**Grade K Math Baseline Assessment** <u>*Math Centers Transition (Two weeks)*</u>: *Topics: Sorting, Two- D Shapes, Classifying by Size, Color, Shape, Counting to 5, Tracing Numbers and Shapes* Chapter 1: Numbers to 5 *Math in Focus* Chapter 1 Assessment Guide Numbers to 5
October	Finish Chapter 1 Chapter 2: Numbers to 10 *Math in Focus* Chapter 2 Assessment Guide Numbers to 10
November	Chapter 3: Measurement *Math in Focus* Chapter 3 Assessment Guide Measurement
December	Chapter 4: Compare Numbers to 10 *Math in Focus* Chapter 4 Assessment Guide Compare Numbers to 10
January	Chapter 5 Part 1: Flat Shapes (Lesson 1-Compose and Decompose Positions, and Shape Patterns- with just Flat Shapes) Chapter 5 Part 2: Solid Shapes (Lessons 2 through 6 include both flat and solid shapes) *Math in Focus* Chapter 5 Assessment Guide Flat and Solid Shapes
February	Chapter 6: Numbers to 20 *Math in Focus* Chapter 6 Assessment Guide Numbers to 20
March	Chapter 7: Addition *Math in Focus* Chapter 7 Assessment Guide: Addition

	Chapter 8: Subtraction *Math in Focus* Chapter 8 Assessment Guide: Subtraction
April	Finish Ch 8 Chapter 9: Numbers to 100 *Math in Focus* Chapter 9 Assessment Guide: Numbers to 100
May	Finish Ch 9 **Grade K Math Spring Summative Assessment (will assess all Grade K standards up to this point- will include Ch 1 -9 of program)** Chapter 10: Sorting *Math in Focus* Chapter 10 Assessment Guide: Sorting
June	Finish Ch 10 Other fun topics to explore in June: Money (if time- and not in textbook)

Unit 1

Numbers to 10

Summary and Rationale

Many students come to school with a basic understanding of counting and numbers. Counting is a fundamental skill in the development of number sense and understanding numbers is the beginning of math literacy. At this stage of development, most students are able to rote count by saying the number words in a sequence.This is a memory task that is similar to reciting the letters of the alphabet. However, rote counting is not an indication that students can count with accuracy and understand cardinality.

The importance of helping students develop a clear understanding if counting cannot be underestimated. The mastery of counting and cardinality involves five principles: one-to-one correspondence, stable order, cardinality, abstraction, and order-irrelevance. One to one correspondence is the ability to associate one number to one object at a time and that the last number counted is the total number of objects in a set. The ability to rote count accurately with one-to-one correspondence, also called rational counting, is a skill that students need to learn. Counting is connected to cardinality more explicitly so that the count tells how many there are. In this unit, students will have many counting opportunities by making use of concrete objects to count to 5. This is followed by recognizing the attributes and cardinalities of small sets of objects, producing sets of given sizes, and matching numerals to the given sizes. Students will then be guided on how to trace and write the numbers in numerals and recognize them in word forms, also known as abstraction. Unlike numbers which represent a specific quantity, zero represents the absence of a quantity. The zero concept often represents unique developmental and conceptual challenges for students. Students will learn this challenging concept through hands-on activities before moving on to write the numeral “0.”

Once students acquire knowledge of counting numbers to 5, students will continue to build the basic concepts of counting through 10. They will count and match objects in larger sets and find two groups that have the same number of objects. Students with a strong sense of quantity will be able to match groups of objects without counting, a skill known as subitizing. Students will eventually be able to estimate how many objects there are in a group and will have their first exploration of decomposing and composing numbers to 10. Learning about numbers and how they work together help students strengthen and deepen their mathematical thinking. They learn the flexibility of putting numbers together by paring them, and breaking numbers apart. This builds a strong foundation to the understanding of the part-part-whole relationship.

Once the numbers from 0 to 10 are explored, students will learn to compare quantities and encounter number relationships. They will match groups in a one-to-one correspondence to determine which group has more, which has fewer, and which groups are the same. They will build the language and concepts of “more than,” “fewer than,” and “the same as” when comparing groups. Students will begin to realize that the quantity of objects increases with successive numbers in the counting sequence as they explore the concepts of “1 more” and “1 less' ' using one-to-one matching and counting on. They will also learn to recognize the relationship between the number of objects and their respective numerals. Understanding the relationship of numbers to one another and their respective magnitudes form the basis of number patterns and simple addition and subtraction.

Recommended Pacing

Math in Focus Chapter 1: Numbers to 5: 3 weeks
Math in Focus Chapter 2: Numbers to 10: 2-3 weeks
Math in Focus Chapter 4: Compare Numbers to 10: 2-3 weeks

Standards	
Counting and Cardinality	
K.CC.1	Know number games and the count sequence. Count to 10 by ones.
K.CC.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).
K.CC.3	Know number names and the count sequence. Write numbers from 0 to 10. Represent a number of objects with a written numeral 0-10 (with 0 representing a count of no objects).
K.CC.4a	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.
K.CC.4b	Understand that the last number name says the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they are counted.
K.CC.4c	Understand that each successive number name refers to a quantity that is one larger.
K.CC.5	Count to tell the number of objects. Count to answer "how many?" questions with as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 10 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 1–10, count out that many objects.
K.CC.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. (Include groups with up to 10 objects.)
K.CC.7	Compare numbers. Compare two numbers between 1 and 10 presented as written numerals.
Operations & Algebraic Thinking	
K.OA.1	Represent addition and subtraction with objects, fingers, mental images, drawings (drawings need not show details, but should show the mathematics in the problem), sounds (e.g., claps), acting out situations, verbal explanations, expressions or equations.
K.OA.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 drawing or equation (e.g., 5=2+3 and 5=4+1).
Measurement	
K.M.1	Describe and compare measurable attributes. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

K.M.2	Directly and compare two 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. For example, directly compare the heights of two children and describe one child as taller/shorter.
Mathematical Practices	
K-12.MP.1	Make sense of problems and persevere in solving them.
K-12.MP.2	Reason abstractly and quantitatively.
K-12.MP.3	Construct viable arguments and critique the reasoning of others.
K-12.MP.4	Model with mathematics.
K-12.MP.5	Use appropriate tools strategically.
K-12.MP.6	Attend to precision.
K-12.MP.7	Look for and make use of structure.
K-12.MP.8	Look for and express regularity in repeated reasoning.
Interdisciplinary Connections	
ELA	
SL.K.1.	Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon norms for discussions (e.g., listening to others with care and taking turns speaking about the topics and texts under discussion). B. Continue a conversation through multiple exchanges.
SL.K.5.	Add drawings or other visual displays to descriptions as desired to provide additional detail.
SL.K.6.	Speak audibly and express thoughts, feelings, and ideas clearly.
Science	
K-PS2-1	Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.
K-PS3-1	Make observations to determine the effect of sunlight on Earth’s surface.
K-PS3-2	Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.

K-LS-1	Use observations to describe patterns of what plants and animals (including humans) need to survive.
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.
K-ESS3-1	Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
Integration of Technology	
8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
Career Readiness, Life Literacies and Key Skills	
9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
9.2.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.
9.4.2.CI.1	Demonstrate openness to new ideas and perspectives.
9.4.2.CI..2	Demonstrate originality and inventiveness in work.
9.4.2.CT.1	Gather information about an issue and collaboratively brainstorm ways to solve the problem.
9.4.2.CT.2	Identify possible approaches and resources to execute a plan.
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
9.4.2.TL.1	Identify the basic features of a digital tool and explain the purpose of the tool.

Instructional Focus

Enduring Understandings:	**Essential Questions:**
Numbers can be used to count, label, order, identify, measure, and describe things. Numbers can be represented in many ways. Numbers can be ordered and compared.	How do we use numbers? Why are numbers important? How can you show various numbers? What is the order of numbers 1-10?

When counting, the last number in the sequence is the total of the group of objects. Counting from 0 to 9 is the next step from being able to count from 1 to 5. Manipulatives and pictures can be used to determine the number that is one more or one less than a given number. When counting, the next number in the sequence is one more.	Why do we count? When do we count? Can everything be counted? What can we use to help us count up to 10? What can we use to help us countdown from 10? How do you determine one more or one less than a number?

Evidence of Learning (Assessments)

Math in Focus Assessment Guide Chapter 1 Numbers to 5
Math in Focus Assessment Guide Chapter 2 Numbers to 10
Math in Focus Cumulative Review 1 (Chapters 1 through 3)
Math in Focus Assessment Guide Chapter 4 Compare Numbers to 10
Math in Focus Cumulative Review 2 (Chapters 4 & 5)

Math Spring Summative Assessment
Math Centers
Homework
Classwork
Class Participation

Objectives (SLO)

Students will know:	Students will be able to:
● Number Names: *one, two, three, four, five, six, seven, eight, nine, zero* ● The Count Sequence ● To count up to 5 objects by saying number names in the standard order and saying just one number name for each number counted. ● To recognize the relationship between the number of objects and their respective numerals. ● To identify the same and different attributes of objects such as color, size, and shape. ● Comparative words: *one more, one less, the same number* ● To count 0 to 9 objects by saying one number name for each object and realizing the last number tells how many. ● To compare two sets of objects, or a set of objects and a numeral, to determine if there is	● Count from 1 to 10. ● Count groups of 1 through 10. ● Read and write the numerals 0 to 10. ● Use 0 to 10 to tell the number of objects. ● Pair number names with numerals. ● Use ordinal numbers tell order. ● Name the relative position of objects in a small ordered collection. ● Pair up sets of objects with other sets of the same quantity. ● Use *one more, one less,* and *the same number* to describe differences between groups of objects. ● Pair up sets of objects one-to-one with other sets of the same quantity. ● Compose and decompose numbers through 10. ● Order numbers 0 to 10 in both increasing and decreasing order. ● Make number pairs to 10.

a difference of one more, one less, or the same number of objects. ● To compose and decompose numbers through 5 to build a strong foundation in number facts ● To count up to 10 and compare numerals and sets using terms more, less, fewer, and the same number. ● To count how many in all, which is the most basic form of addition. ● The concept of one more. ● The meaning of same, more, and how many more ● The meaning of less and fewer.	● Compare two groups and determine which group has more or fewer. ● Determine *one more.* ● Show the meaning of the same and *more*. ● Show the meaning of *less* and *fewer.* ● Use *more*, *less,* and *the same* to compare number values.

Suggested Resources/Technology Tools

Math in Focus Resources Chapter 1 Numbers to 5
Math in Focus Resources Chapter 2 Numbers to 10
Math in Focus Cumulative Review 1 (Chapters 1 through 3)
Math in Focus Resources Chapter 4 Compare Numbers to 10

<u>Resources and Manipulatives</u>
Student Activity Cards
Teacher Activity Cards
Numeral Cards
Dot Cards
White Boards
Connecting Cubes
Number Cubes
Visual Representations of Numbers and Number of Objects
Counters
Attribute Blocks

<u>Online Resources</u>
HMH Ed: Your Friend in Learning

www.morestarfall.com
www.youtube.com/harrykindergarten
https://www.mathgames.com/kindergarten Grade K Concepts by Topic
https://www.ixl.com/math/kindergarten Grade K Concepts by Topic
https://www.splashmath.com/counting-games-for-kindergarteners Counting Games
https://www.splashmath.com/number-games-for-kindergarteners Number Games
http://www.abcya.com/kindergarten_counting.htm Counting Game
http://www.abcya.com/counting_fish.htm Counting Fish
http://www.abcya.com/numerical_order.htm Numerical Order
https://www.youtube.com/watch?v=QyIoGYQHOFA Jack Hartmann Counting to 5 Video
https://www.youtube.com/watch?v=DR-cfDsHCGA Counting to 10 Video

Literacy Connections
Math Journal
Ten Black Dots by Donald Crews

Tier 1 Modifications and Accommodations

Including special education students, Multilingual Language Learners (MLLs), students at risk of school failure, gifted and talented students, and students with 504 plans;

General Modifications for students struggling to learn:

Small group instruction within the classroom
Differentiation through content, process, product,and environment
Individual feedback and praise towards what is done correctly based upon effort, attitude and strategy.
Help students manage individual stressors for the student and plan alternate pathways for completion of assignments.

Special Education - Extra Practice pages, anchor charts, scaffolded explanations of topics, manipulatives, extra time for work, group work, visual aids, modeling, hands-on learning activities, small group work for more individualized attention

*These are only suggested ideas to modify instruction, modifications and accommodations should be tailored to each student's IEP and needs. Also, see textbook for Differentiated Instruction ideas in each chapter.

MLL - Using simplified language, modeling, visual aids, manipulatives, vocabulary with images and examples

504 - Extra Practice pages, anchor charts, scaffolded explanations of topics, manipulatives, extra time for work, group work, visual aids, modeling, hands-on learning activities, small group work for more individualized attention

Gifted and Talented - Enrichment book, higher-level questions, challenge packets, KenKen and other puzzles, leading group work

Career Readiness, Life Literacies, and Key Skills NJSLS

Please select all standards that apply to this unit of study:

Act as a responsible and contributing community members and employee
Attend to financial well-being
Consider the environmental, social and economic impacts of decisions
Demonstrate creativity and innovation
Utilize critical thinking to make sense of problems and persevere in solving them
Model integrity, ethical leadership and effective management
Plan education and career paths aligned to personal goals
Use technology to enhance productivity increase collaboration and communicate effectively
Work productively in teams while using cultural/global competence

Suggestions on integrating these standards can be found at: https://www.nj.gov/education/standards/clicks/

Unit 2

Numbers to 20 and Beyond

Summary and Rationale

Students learn to count in increments, first to 5 or 10, and then to 20.. In this unit, students will extend the principles of counting to numbers within 20. Counting up to 20 serves as an introduction to counting two-digit numbers. Mastering knowledge of numerical sense up to 20, as well as its sequence, is the stepping stone to counting numbers up to 100.

In this unit, students begin with groups of up to 20 objects. They will learn that numbers are composed of tens and ones, which is a fundamental concept when dealing with large numbers. The composition of numbers in tens and ones is a prerequisite for the learning and understanding of place value and calculations. Students will extend their knowledge to order numbers within 20 and learn to find missing numbers by counting on and counting back. Students will extend their knowledge of decomposing numbers to 20. Breaking down numbers into tens and ones helps students see the relationships and patterns in numbers. This learning serves as a foundation for place value and operations with regrouping in later grades. Learning how to decompose numbers to 20 helps students understand teen numbers visually and why numbers 11 to 19 are made up of a ten and some ones.

Students will then move onto numbers beyond 20, beginning with rote and rational counting from 21 to 50, followed by rote counting from 51 to 100. Students will discover the fun of counting forward and backward from any given number in the number sequence within 100t. They will learn to count on by 10s to 100, as well as identify and create their own number patterns.

Recommended Pacing

Math in Focus Chapter 6: Numbers to 20: 2 weeks
Math in Focus Chapter 9: Numbers to 100: 2 weeks

Standards

Counting and Cardinality	
K.CC.1	Know number games and the count sequence. Count to 100 by ones and by tens.
K.CC.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).
K.CC.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).
K.CC.4a	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.

K.CC.4b	Understand that the last number name says the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they are counted.
K.CC.4c	Understand that each successive number name refers to a quantity that is one larger.
K.CC.5	Count to tell the number of objects. Count to answer "how many?" questions with as many as 20 things arranged in a line, a rectangular array, or a circle, or 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.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. (Include groups with up to 10 objects.)
K.CC.7	Compare numbers. Compare two numbers between 1 and 10 presented as written numerals.
Operations & Algebraic Thinking	
K.OA.1	Represent addition and subtraction with objects, fingers, mental images, drawings (drawings need not show details, but should show the mathematics in the problem), sounds (e.g., claps), acting out situations, verbal explanations, expressions or equations.
K.OA.2	Solve addition and subtraction word problems and add and subtract within 10, by using objects or drawings to represent the problem.
K.OA.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 drawing or equation (e.g., 5=2+3 and 5=4+1).
K.OA.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.5	Fluently add and subtract within 5.
Numbers & Operations in Base Ten	
K.NBT.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 numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.
Mathematical Practices	
K-12.MP.1	Make sense of problems and persevere in solving them.
K-12.MP.2	Reason abstractly and quantitatively.
K-12.MP.4	Model with mathematics.

K-12.MP.5	Use appropriate tools strategically.
K-12.MP.6	Attend to precision.
K-12.MP.7	Look for and make use of structure.
Interdisciplinary Connections	
ELA	
SL.K.1.	Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon norms for discussions (e.g., listening to others with care and taking turns speaking about the topics and texts under discussion). B. Continue a conversation through multiple exchanges.
SL.K.5.	Add drawings or other visual displays to descriptions as desired to provide additional detail.
SL.K.6.	Speak audibly and express thoughts, feelings, and ideas clearly.
Science	
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.
K-ESS3-1	Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
Integration of Technology	
8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
Career Readiness, Life Literacies and Key Skills	
9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
9.2.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.
9.4.2.CI.1	Demonstrate openness to new ideas and perspectives.
9.4.2.CI..2	Demonstrate originality and inventiveness in work.
9.4.2.CT.1	Gather information about an issue and collaboratively brainstorm ways to solve the problem.

9.4.2.CT.2	Identify possible approaches and resources to execute a plan.
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
9.4.2.TL.1	Identify the basic features of a digital tool and explain the purpose of the tool.

Instructional Focus

Enduring Understandings:	Essential Questions:
Numbers can be used to count, label, order, identify, measure, and describe things. Numbers can be represented in many ways. Numbers can be ordered and compared. When counting, the last number in the sequence is the total of the group of objects. Manipulatives and pictures can be used to determine the number that is one more or one less than a given number. When counting by ones, the next number in the sequence is one more and the previous number in the sequence is one less. When counting by tens, the next number in the sequence is “ten more” (or one more group of ten). Counting is a strategy for finding the total of combined groups. One number can be represented by combining two smaller numbers. Numbers can be composed and decomposed using five and ten-frames or a ten and some ones.	How do we use numbers? Why are numbers important? How can you show various numbers? What is the order of numbers 11-20? Why do we count? When do we count? Can everything be counted? How do you determine one more or one less than a number? How can we compare numbers? How can we compare groups of objects? What happens when we combine groups or sets? When and how do we count on? When and how do we count back? In what ways can a number be represented using two other numbers?

Evidence of Learning (Assessments)

Math in Focus Assessment Guide Chapter 6: Numbers to 20: 2 weeks
Math in Focus Cumulative Review 3 (Chapters 6 through 8)
Math in Focus Assessment Guide Chapter 9: Numbers to 100: 2 weeks
Math in Focus Cumulative Review 4 (Chapters 9 & 10)

Math Spring Summative Assessment
Math Centers
Homework
Classwork
Class Participation

Objectives (SLO)

Students will know:

Number Names: *ten, eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty*

- Comparative Words: *more, fewer, greater than, less than*
- How to count up to 20 objects by using one-to-one correspondence.
- How to compare and sequence numbers to 20.
- Number Names: *ten, twenty, thirty, forty, fifty, sixty, seventy, eighty, ninety, hundred*
- Counting words: *pairs, twos, fives, tens, tally*
- Comparative words: *fewer, less, more, most, fewest*.
- How to compare sets of up to 20 to find the difference between the two sets.
- How to compare countable sets using the terms *fewer* and *more*, and uncountable sets using the terms *less* and *more*.
- How to combine sets to find how many in all.
- Number Trains
- How to count on and count back.
- How to find the difference between two sets using several strategies such as finger counting and one-to-one correspondence.
- Number facts to 10.
- How to combine sets and to see how many more are needed for values up to 15.
- How to compose and decompose numbers up to 20 by counting on and other strategies.

Students will be able to:

- Count to 10.
- Read and write the numeral 10.
- Count from 10 to 20.
- Use ten-frames to count on.
- Read and write the numerals from 10 to 20.
- Compare and order groups of up to 20 objects.
- Recognize and use pairs for counting.
- Use the counting by 2s sequence to count up to 20 objects.
- Keep count of numbers using tallies.
- Count to 49, to 79, to 100.
- Count on by 10s up to 100.
- Count from any given number to 49, to 79, to 100.
- Compare sets of up to 20 objects.
- Use and understand fewer, less, more, most, and fewest.
- Recognize and understand number trains.
- Count the difference through comparing sets in one-to-one correspondence.
- Count back using concrete representations.
- Count up and back to find the difference between two sets.
- Compose and decompose numbers through 10.
- Combine sets to make 5, 6, 7, 8, 9, and 10.
- Compose and decompose numbers to 20 with five-frames and ten-frames.
- Count on using a number line.
- Count on to find the difference.
- Combine two sets to find how many more for sums through 15.

Suggested Resources/Technology Tools

Math in Focus Resources Chapter 6: Numbers to 20
Math in Focus Resources Chapter 9: Numbers to 100

Resources and Manipulatives
Teacher Activity Cards
Numeral Cards
Dot Cards
White Boards
Connecting Cubes
Counters
Interactive Hundred Chart
Visual Representation of Numbers and Number of Objects
Number Cubes

Online Resources
HMH Ed: Your Friend in Learning

www.abcya.com
www.softschools.com
https://www.mathgames.com/kindergarten Grade K Concepts by Topic
https://www.ixl.com/math/kindergarten Grade K Concepts by Topic
https://www.splashmath.com/counting-games-for-kindergarteners Counting Games
http://www.abcya.com/number_bubble_skip_counting.htm Skip Counting
http://www.abcya.com/one_hundred_number_chart_game.htm Hundred Chart
https://www.youtube.com/watch?v=By2hmo323xM Counting to 20 Video
https://www.youtube.com/watch?v=63-mmHVfFn4 How to Write Numbers to 20
https://jr.brainpop.com/math/numbersense/onehundred/ One Hundred Video
https://www.youtube.com/watch?v=QbHobZOKY5w Jack Hartmann Count to 100 Video
https://www.youtube.com/watch?v=OCxvNtrcDIs Jack Hartmann Count to 100 by 2s Video
https://www.youtube.com/watch?v=amxVL9KUmq8&disable_polymer=true Jack Hartmann Skip Count to 100 by 5s Video
https://www.youtube.com/watch?v=7stosHbZZZg&disable_polymer=true Jack Hartmann Skip Count to 100 by 10s Video
https://jr.brainpop.com/math/additionandsubtraction/countingon/ Counting On Video
https://www.mathplayground.com/video_skip_counting.html Skip Counting Video

Literacy Connections
Math Journal

Art Connections
100 chart color pictures

Science Connections
Thermometers- temperature reading

Tier 1 Modifications and Accommodations

Including special education students, Multilingual Language Learners (MLLs), students at risk of school failure, gifted and talented students, and students with 504 plans;

General Modifications for students struggling to learn:

Small group instruction within the classroom
Differentiation through content, process, product,and environment
Individual feedback and praise towards what is done correctly based upon effort, attitude and strategy.
Help students manage individual stressors for the student and plan alternate pathways for completion of assignments.

Special Education - Extra Practice pages, anchor charts, scaffolded explanations of topics, manipulatives, extra time for work, group work, visual aids, modeling, hands-on learning activities, small group work for more individualized attention

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Gifted and Talented - Enrichment book, higher-level questions, challenge packets, KenKen and other puzzles, leading group work

Career Readiness, Life Literacies, and Key Skills NJSLS

Please select all standards that apply to this unit of study:

Act as a responsible and contributing community members and employee
Attend to financial well-being
Consider the environmental, social and economic impacts of decisions
Demonstrate creativity and innovation
Utilize critical thinking to make sense of problems and persevere in solving them
Model integrity, ethical leadership and effective management
Plan education and career paths aligned to personal goals
Use technology to enhance productivity increase collaboration and communicate effectively
Work productively in teams while using cultural/global competence

Suggestions on integrating these standards can be found at: https://www.nj.gov/education/standards/clicks/

Unit 3

Measurement & Data

Summary and Rationale

Measurement applies mathematics in a way that young students can easily understand and relate to real-world experiences. Many students may come to kindergarten with knowledge that continuous attributes such as length, height and weight exist. Students begin by touching, examining, and comparing objects to develop awareness of attributes, such as length, size, and weight. They can see and feel these differences, which leads to comparing and ordering objects based on their attributes.

In this unit, students learn to describe one or more measurable attributes of an item, in terms of length, height and weight. They learn to make a comparison between two items with a measurable attribute in common and describe the common measurable attribute in equality or inequality using appropriate descriptive mathematical language such as “as long a,” “the same length as,” “longer than,” “as tall as,” taller than,” and “shorter than, “as heavy as,” “heavier than,” and “lighter than,” through exploration. Students will then begin to show readiness in connecting numbers to measurement through the use of non standard units. They will also learn to compare items using two of the three measurable attributes, length, height, and weight. Students will then begin to show readiness in connecting numbers to measurement through the use of non standard units to get the idea that any length can be measured with any same-sized unit, which paves the way not only for geometry, but for the skill of estimation.

Sorting is a very important mathematical skill that students need to learn as it is a very basic form of algebraic thinking. Sorting and classifying skills help students develop skills needed to analyze data.. Sorting is systematic and it also lays the foundation to learning about graphs and promotes logical thinking and application. Students will learn to match, group, and sort objects based on their similarities and differences pertaining to length, height, and wright.

Recommended Pacing

Math in Focus Chapter 3: Measurement
Math in Focus Chapter 10: Sorting

Standards

Measurement	
K.M.1	Describe and compare measurable attributes. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
K.M.2	Directly and compare two 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. For example, directly compare the heights of two children and describe one child as taller/shorter.

Data Literacy	
K.DL.1	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. (Limit category counts to be less than or equal to 10.)
Counting & Cardinality	
K.CC.1	Know number games and the count sequence. Count to 100 by ones and by tens.
K.CC.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).
K.CC.4a	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.
K.CC.4b	Understand that the last number name says the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they are counted.
K.CC.4c	Understand that each successive number name refers to a quantity that is one larger.
K.CC.5	Count to tell the number of objects. Count to answer “how many?” questions with as many as 20 things arranged in a line, a rectangular array, or a circle, or 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.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. (Include groups with up to 10 objects.)
Operations & Algebraic Thinking	
K.OA.1	Represent addition with objects, fingers, mental images, drawings (drawings need not show details, but should show the mathematics in the problem), sounds (e.g., claps), acting out situations, verbal explanations, expressions or equations.
K.OA.2	Solve addition and subtraction word problems, and add and subtract within 10,e.g.,by using objects or drawing to represent the problem.
Mathematical Practices	
K-12.MP.2	Reason abstractly and quantitatively.
K-12.MP.4	Model with mathematics.
K-12.MP.5	Use appropriate tools strategically.
K-12.MP.6	Attend to precision.

K-12.MP.7	Look for and make use of structure.
Interdisciplinary Connections	
ELA	
RL.K.7.	With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts).
SL.K.1.	Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon norms for discussions (e.g., listening to others with care and taking turns speaking about the topics and texts under discussion). B. Continue a conversation through multiple exchanges.
SL.K.5.	Add drawings or other visual displays to descriptions as desired to provide additional detail.
SL.K.6.	Speak audibly and express thoughts, feelings, and ideas clearly.
Science	
K-PS2-1	Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.
K-PS3-1	Make observations to determine the effect of sunlight on Earth's surface.
K-PS3-2	Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.
K-LS-1	Use observations to describe patterns of what plants and animals (including humans) need to survive.
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.
K-ESS3-1	Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change (e.g., climate change) to define a simple problem that can be solved through the development of a new or improved object or tool
K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
Integration of Technology	
8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).

Career Readiness, Life Literacies and Key Skills	
9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
9.2.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job
9.4.2.CI.1	Demonstrate openness to new ideas and perspectives.
9.4.2.CI..2	Demonstrate originality and inventiveness in work.
9.4.2.CT.1	Gather information about an issue and collaboratively brainstorm ways to solve the problem.
9.4.2.CT.2	Identify possible approaches and resources to execute a plan.
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
9.4.2.IML2	Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).
9.4.2.IML.4	Compare and contrast the way information is shared in a variety of contexts (e.g., social, academic, athletic)

Instructional Focus

Enduring Understandings:	**Essential Questions:**
Groups of objects can be compared and ordered by length, size, and weight. Ordering and comparing objects form the basics of measurement. Objects can be described and classified by size. Measuring length has a variety of applications in the real world. Any length can be measured with any same-sized unit. It takes a number and a unit to express a measurement. More units are needed to measure a longer or taller object than a shorter object.	How do we compare numbers? What do we look for when comparing objects? How are objects alike, different, and the same? How are objects alike, different, and the same? What words can we use to describe size? How do we tell which object is longer? How do we tell which object is taller? How do we tell which object is heavier? Does a larger size always lead to a heavier object?

Measurements change depending on the size of the unit. When comparing two lengths, one end of each length must match. When measuring, length or height start at the beginning of the object and finish measuring at the end of the object. Weight cannot always be judged by size. Larger does not always mean heavier.	

Evidence of Learning (Assessments)

Math in Focus Assessment Guide Chapter 3: Measurement
Math in Focus Cumulative Review 1 (Chapters 1 through 3)
Math in Focus Assessment Guide Chapter 10: Sorting
Math in Focus Cumulative Review 4 (Chapters 9 & 10)

Math Spring Summative Assessment
Math Centers
Homework
Classwork
Class Participation

Objectives (SLO)

Students will know:	Students will be able to:
● Comparative words: *same size, different size, bigger than, taller than, smaller than, shorter than, heavier, lighter* ● Words to describe Order: *biggest, middle-sized, smallest, longest, shortest, heaviest, lightest, heavier, lighter* ● How to order objects from smallest to biggest, shortest to longest, and lightest to heaviest. ● How to estimate measurable attributes such as weight through visual aids. ● How to use comparative vocabulary to express differences in size, length, and weight. ● Descriptive words: *big, small, long* ● Comparative words: *bigger, smaller, same size* ● How to estimate whether objects can fit into containers of various sizes.	● Pair up sets of objects. ● Order objects by size. ● Use comparing words. ● Order objects according to length. ● Order objects according to weight. ● Use size comparisons such as big or small. ● Explore the idea that only a few big objects fit into small spaces, however many small objects fit into big spaces. ● Compare lengths. ● Use nonstandard units to measure and compare lengths and heights. ● Find differences in lengths using nonstandard units. ● Use the terms tallest and shortest in terms of height. ● Compare weights using nonstandard units. Compare containers according to capacity ● Use the terms *holds more, holds less, and hold the same amount.*

● How to compare lengths of objects using the terms *long, short, longer, shorter, longest*, *tallest* and *shortest*. ● How to compare lengths and heights of objects using nonstandard units of measurement, such as connecting cubes and paper clips. ● How to find the difference in lengths in terms of nonstandard units. ● How to compare weights of objects by using a balance scale. ● How to measure and compare weights using nonstandard units. ● How to compare capacities of containers using the terms *holds more, holds less*, and *holds the same amount.*	● Compare events according to duration.

Suggested Resources/Technology Tools

Math in Focus Resources Chapter 3: Measurement
Math in Focus Resources Chapter 10: Sorting

Resources and Manipulatives
Student Activity Cards
White Boards
Connecting Cubes
Paper lips
Other Non-Standard Units
Counters
Numeral Cards
Balance Scale

Online Resources
HMH Ed: Your Friend in Learning

www.morestarfall.com
www.youtube.com/harrykindergarten
https://www.mathgames.com/kindergarten Grade K Concepts by Topic
https://www.ixl.com/math/kindergarten Grade K Concepts by Topic
https://www.splashmath.com/measurement-games-for-kindergarteners Measurement Games

Literacy Connections
Math Journal
A Pig is Big by Douglas Florian
Big and Little by Steve Jenkins
Biggest, Strongest, Fastest by Steve Jenkins
Inch by Inch by Leo Lionni

Art Connections

Draw objects to compare sizes (tall flower and short flower)

Science Connections
Measure ingredients for experiments-measure objects for theme of the month (ex. Insects-flowers)

Tier 1 Modifications and Accommodations

Including special education students, Multilingual Language Learners (MLLs), students at risk of school failure, gifted and talented students, and students with 504 plans;

General Modifications for students struggling to learn:

Small group instruction within the classroom
Differentiation through content, process, product,and environment
Individual feedback and praise towards what is done correctly based upon effort, attitude and strategy.
Help students manage individual stressors for the student and plan alternate pathways for completion of assignments.

Special Education - Extra Practice pages, anchor charts, scaffolded explanations of topics, manipulatives, extra time for work, group work, visual aids, modeling, hands-on learning activities, small group work for more individualized attention

*These are only suggested ideas to modify instruction, modifications and accommodations should be tailored to each student's IEP and needs. Also, see textbook for Differentiated Instruction ideas in each chapter.

MLL - Using simplified language, modeling, visual aids, manipulatives, vocabulary with images and examples

504 - Extra Practice pages, anchor charts, scaffolded explanations of topics, manipulatives, extra time for work, group work, visual aids, modeling, hands-on learning activities, small group work for more individualized attention

Gifted and Talented - Enrichment book, higher-level questions, challenge packets, KenKen and other puzzles, leading group work

Career Readiness, Life Literacies, and Key Skills NJSLS

Please select all standards that apply to this unit of study:

- Act as a responsible and contributing community members and employee
- Attend to financial well-being
- Consider the environmental, social and economic impacts of decisions
- Demonstrate creativity and innovation
- Utilize critical thinking to make sense of problems and persevere in solving them
- Model integrity, ethical leadership and effective management
- Plan education and career paths aligned to personal goals
- Use technology to enhance productivity increase collaboration and communicate effectively
- Work productively in teams while using cultural/global competence

Suggestions on integrating these standards can be found at: https://www.nj.gov/education/standards/clicks/

Unit 4

Geometry

Summary and Rationale

Geometry helps students describe the world around them. In kindergarten, geometry instruction focuses on expanding and enhancing children's prior knowledge and understanding of shapes that they have acquired by observing their surroundings. Students learn more precise names for shapes and how to describe them, and begin to compare and contrast them. It is helpful to provide many concrete examples of flat and solid shapes to help students make real-world connections and it is critical that they are able to identify examples and non-examples of different shapes. Knowing the basic properties of two and three-dimensional shapes is the first step to understanding geometry. Creating patterns using shapes will enable students to later better understand more complex patterns such as those involving numbers.

Sorting and classifying tasks help students to identify patterns and describe geometric objects.. When students classify and sort objects by one, two, and three attributes exposes students to a wide variety of color, shape, size, and pattern and geometry related vocabulary. Students will learn to match, group, and sort objects based on their similarities and differences.

Recommended Pacing

Math in Focus Chapter 5: Flat and Solid Shapes: 1-2 weeks
Math in Focus Chapter 10: Sorting

Standards

Geometry	
K.G.1	Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). 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.2	Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). Correctly name shapes regardless of their orientations or overall size.
K.G.3	Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). Identify shapes as two-dimensional (lying in a plane, "flat").
Mathematical Practices	
K-12.MP.1	Make sense of problems and persevere in solving them.
K-12.MP.2	Reason abstractly and quantitatively.
K-12.MP3	Construct viable arguments and critique the reasoning of others.

K-12.MP.4	Model with mathematics.
K-12.MP.5	Use appropriate tools strategically.
K-12.MP.6	Attend to precision.
K-12.MP.7	Look for and make use of structure.
K-12.MP.8	Look for and express regularity in repeated reasoning.
Interdisciplinary Connections	
ELA	
SL.K.1.	Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon norms for discussions (e.g., listening to others with care and taking turns speaking about the topics and texts under discussion). B. Continue a conversation through multiple exchanges.
SL.K.5.	Add drawings or other visual displays to descriptions as desired to provide additional detail.
SL.K.6.	Speak audibly and express thoughts, feelings, and ideas clearly.
Integration of Technology	
8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
Career Readiness, Life Literacies and Key Skills	
9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
9.2.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.
9.4.2.CI.1	Demonstrate openness to new ideas and perspectives.
9.4.2.CI..2	Demonstrate originality and inventiveness in work.
9.4.2.CT.1	Gather information about an issue and collaboratively brainstorm ways to solve the problem.
9.4.2.CT.2	Identify possible approaches and resources to execute a plan.
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

9.4.2.TL.1	Identify the basic features of a digital tool and explain the purpose of the tool.

Instructional Focus

Enduring Understandings:	**Essential Questions:**
Shapes can be described, identified, compared, and classified. Some shapes have flat faces, edges, and corners, and some do not. Shapes and objects can be classified using one, two, or three attributes such as color, size, shape, and other special features. Shapes and objects can be sorted using one or two attributes such as color, size, shape, and other special features.	What are the names of some shapes? Where do we find flat shapes around us? In what ways can geometric solids be matched to real-life objects? How can I put shapes together and take them apart to form other shapes? Why do we classify shapes and objects? How do we classify shapes and objects? Why and how do we sort shapes and objects?

Evidence of Learning (Assessments)

Math in Focus Assessment Guide Chapter 5: Flat and Solid Shapes
Math in Focus Cumulative Review 2: (Chapters 4 & 5)
Math in Focus Assessment Guide Chapter 10: Sorting

Math Spring Summative Assessment
Homework
Classwork
Class Participation

Objectives (SLO)

Students will know:	Students will be able to:
● Parts of a Shape: *face, edge, corner* ● Solid Shape Names: *cube, cone, cylinder, sphere, pyramid* ● Flat Shape Names: *circle, triangle, square, rectangle, hexagon* ● Descriptive Words: *big, small* ● Shape patterns ● Some shapes have flat faces, edges, and corners, and some do not. ● How to *sort.*	● Recognize and name basic solid and flat shapes. ● Describe basic solid and flat shapes. ● Recognize the relationship between solid and flat shapes. ● Draw flat shapes. ● Identify basic flat shapes within a scene. ● Make a picture using basic flat shapes. ● Identify and extend a shape pattern. ● Classify shapes or objects using one attribute, two attributes, and three attributes. (color, size, shape, special features)

● How to identify attributes and pick out the"odd one out" in a set of shapes or objects. ● How to sort and classify shapes or objects according to up to three attributes.	● Identify shapes and objects that do not belong to a set. ● Sort shapes and objects using one attribute or two attributes. (color, size, shape, special features

Suggested Resources/Technology Tools

Math in Focus Resources Chapter 5: Flat and Solid Shapes
Math In Focus Virtual Manipulatives
Math in Focus Resources Chapter 10: Sorting

Resources and Manipulatives
Student Activity Cards
Plane Shapes
Solid Shapes
Attribute Blocks

Online Resources
HMH Ed: Your Friend in Learning

www.morestarfall.com
https://www.mathgames.com/kindergarten Grade K Concepts by Topic
https://www.ixl.com/math/kindergarten Grade K Concepts by Topic
https://www.splashmath.com/geometry-games-for-kindergarteners Geometry Games
http://www.abcya.com/fuzz_bugs_patterns.htm Patterns
https://www.youtube.com/watch?v=svrkthG2950&disable_polymer=true Jack Hartmann Name the Shapes Video
https://jr.brainpop.com/math/geometry/solidshapes/ Solid Shapes Video
https://www.youtube.com/watch?v=guNdJ5MtX1A Solid Shapes Video
https://jr.brainpop.com/math/geometry/planeshapes/ Plane Shapes Video
https://www.youtube.com/watch?v=xJxq0kR8yNc Plane Shapes Video
https://www.youtube.com/watch?v=zPZegz690Mg Jack Hartmann Solid Shapes Video

Literacy Connections
Math Journal
The Wings on a Flea: A Book about Shapes by Ed Emberly
What is a Square? By Rebecca Kai Dotlich
Cubes, Cones, Cylinders, and Spheres by Tana Hoban
The Shape of Things by Dayle Ann Dodds

Art Connections
Make shape collages and sculptures

Tier 1 Modifications and Accommodations

Including special education students, Multilingual Language Learners (MLLs), students at risk of school failure, gifted and talented students, and students with 504 plans;

General Modifications for students struggling to learn:

Small group instruction within the classroom
Differentiation through content, process, product,and environment
Individual feedback and praise towards what is done correctly based upon effort, attitude and strategy.
Help students manage individual stressors for the student and plan alternate pathways for completion of assignments.

Special Education - Extra Practice pages, anchor charts, scaffolded explanations of topics, manipulatives, extra time for work, group work, visual aids, modeling, hands-on learning activities, small group work for more individualized attention

*These are only suggested ideas to modify instruction, modifications and accommodations should be tailored to each student's IEP and needs. Also, see textbook for Differentiated Instruction ideas in each chapter.

MLL - Using simplified language, modeling, visual aids, manipulatives, vocabulary with images and examples

504 - Extra Practice pages, anchor charts, scaffolded explanations of topics, manipulatives, extra time for work, group work, visual aids, modeling, hands-on learning activities, small group work for more individualized attention

Gifted and Talented - Enrichment book, higher-level questions, challenge packets, KenKen and other puzzles, leading group work

Career Readiness, Life Literacies, and Key Skills NJSLS

Please select all standards that apply to this unit of study:

Act as a responsible and contributing community members and employee
Attend to financial well-being
Consider the environmental, social and economic impacts of decisions
Demonstrate creativity and innovation
Utilize critical thinking to make sense of problems and persevere in solving them
Model integrity, ethical leadership and effective management
Plan education and career paths aligned to personal goals
Use technology to enhance productivity increase collaboration and communicate effectively
Work productively in teams while using cultural/global competence

Suggestions on integrating these standards can be found at: https://www.nj.gov/education/standards/clicks/

Unit 5

Addition & Subtraction

Summary and Rationale

In this unit, students learn to show addition using objects, pictures, models, numbers, and words. Using symbols to represent mathematical situations is one of the beginning skills of algebra.

Addition is one of four number operations in mathematics. Simple addition and interpreting number sentences from numbers stories forms the basis to more complex addition situations that include three or more addends.

Story problems are a common context for applying subtraction ideas. Subtraction stories provide children with opportunities to demonstrate understanding of simple separating and comparison subtraction problems. The activities in this unit connect and continue to develop basic concepts in number, algebra, and problem solving strands.

Subtraction is one of the four number operations in mathematics. Simple subtraction and interpreting number sentences form number stories forms the basis to more complex subtraction situations.

Recommended Pacing

Math in Focus Chapter 7: Addition
Math in Focus Chapter 8: Subtraction

Standards

Counting and Cardinality	
K.CC.1	Know number games and the count sequence. Count to 100 by ones and by tens.
K.CC.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).
K.CC.4	Understand the relationship between numbers and quantities; connecting counting to cardinality.
K.CC.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. (Include groups with up to 10 objects.)
Operations & Algebraic Thinking	
K.OA.1	Represent addition with objects, fingers, mental images, drawings (drawings need not show details, but should show the mathematics in the problem), sounds (e.g., claps), acting out situations, verbal explanations, expressions or equations.

K.OA.2	Solve addition and subtraction word problems, and add and subtract within 10,e.g.,by using objects or drawing to represent the problem.
K.OA.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 drawing or equation (e.g., 5=2+3 and 5=4+1).
K.OA.5	Fluently add and subtract within 5.
Mathematical Practices	
K-12.MP.1	Make sense of problems and persevere in solving them.
K-12.MP.2	Reason abstractly and quantitatively.
K-12.MP.4	Model with mathematics.
K-12.MP.6	Attend to precision.
K-12.MP.8	Look for and express regularity in repeated reasoning.
Interdisciplinary Connections	
ELA	
SL.K.1.	Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon norms for discussions (e.g., listening to others with care and taking turns speaking about the topics and texts under discussion). B. Continue a conversation through multiple exchanges.
SL.K.5.	Add drawings or other visual displays to descriptions as desired to provide additional detail.
SL.K.6.	Speak audibly and express thoughts, feelings, and ideas clearly.
Science	
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.
K-ESS3-1	Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
Integration of Technology	

8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
Career Readiness, Life Literacies and Key Skills	
9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
9.2.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.
9.4.2.CI.1	Demonstrate openness to new ideas and perspectives.
9.4.2.CI..2	Demonstrate originality and inventiveness in work.
9.4.2.CT.1	Gather information about an issue and collaboratively brainstorm ways to solve the problem.
9.4.2.CT.2	Identify possible approaches and resources to execute a plan.
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
9.4.2.TL.1	Identify the basic features of a digital tool and explain the purpose of the tool.

Instructional Focus

Enduring Understandings:	Essential Questions:
Addition is the joining of two sets. Pictures and manipulatives can be used to model addition. Subtraction describes the process of separating from a whole. Pictures and manipulatives can be used to model subtraction.	What happens when we combine groups or sets? Why do I need to know how to add? What happens when we take items away from a group? Why do I need to know how to subtract?

Evidence of Learning (Assessments)

Math in Focus Assessment Guide Chapter 7: Addition
Math in Focus Assessment Guide Chapter 8: Subtraction
Math in Focus Cumulative Review 3 (Chapters 6 through 8)

Math Spring Summative Assessment
Math Centers

Homework
Classwork
Class Participation

Objectives (SLO)

Students will know:

- How to deduce "addition" sentences from "addition" stories and write them using the symbols + and =.
- Mathematical vocabulary: *plus, is equal to, numbers sentence*
- Fluency with "addition" facts to 5.
- How to form subtraction sentences from subtraction stories and write them using the symbols - and =.
- Mathematical vocabulary: *minus, left, how many more*
- Compare sets by one-to-one correspondence, and then write subtraction sentences to represent the subtraction situation.
- Fluency with subtraction facts to 5.

Students will be able to:

- Use symbols and numerals to write number sentences.
- Represent stories and sentences about "addition.".
- Use symbols and numerals to write number sentences.
- Represent subtraction stories with subtraction sentences.
- Compare two sets and show the number sentence to answer *how many more*.

Suggested Resources/Technology Tools

Math in Focus Resources Chapter 7: Addition
Math in Focus Resources Chapter 8: Subtraction

<u>Resources and Manipulatives</u>
Numeral Cards
Symbol Cards
White Boards
Connecting Cubes
Counters

<u>Online Resources</u>
HMH Ed: Your Friend in Learning

https://www.mathgames.com/kindergarten Grade K Concepts by Topic
https://www.ixl.com/math/kindergarten Grade K Concepts by Topic
https://www.splashmath.com/addition-games-for-kindergarteners Addition Games
https://www.splashmath.com/subtraction-games-for-kindergarteners Subtraction Games
http://www.abcya.com/subtraction_game.htm Balloon Pop Subtraction
http://www.abcya.com/kindergarten_word_problems_add_subtract.htm Add and Subtract to 10
http://www.abcya.com/sum_of_all_dice.htm Add the Sum of the Dice
http://www.abcya.com/addition.htm Marble Addition
https://www.mathplayground.com/math_monster_addition.html Addition to 10
https://www.mathplayground.com/puzzle_pics_subtraction_facts_to_20.html Subtraction to 10

https://jr.brainpop.com/math/additionandsubtraction/basicadding/ Basic Adding Video
https://jr.brainpop.com/math/additionandsubtraction/basicsubtraction/ Basic Subtraction Video

Literacy Connections
Math Journal
The Napping House by Audrey Wood
One Monday Morning by Uri Shulevitz
Quack and Count by Keith Baker
12 Ways to Get to 11 by Eve Merriam
Ten In the Bed by Penny Dale
Five Little Monkeys jumping on the Bed by Eileen Christelow
Dr. Seuss- use stories for subtraction manipulatives or to write number sentences (ex. Fox in Sox)

Art Connections
Draw number stories

Tier 1 Modifications and Accommodations

Including special education students, Multilingual Language Learners (MLLs), students at risk of school failure, gifted and talented students, and students with 504 plans;

General Modifications for students struggling to learn:

Small group instruction within the classroom
Differentiation through content, process, product,and environment
Individual feedback and praise towards what is done correctly based upon effort, attitude and strategy.
Help students manage individual stressors for the student and plan alternate pathways for completion of assignments.

Special Education - Extra Practice pages, anchor charts, scaffolded explanations of topics, manipulatives, extra time for work, group work, visual aids, modeling, hands-on learning activities, small group work for more individualized attention

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Gifted and Talented - Enrichment book, higher-level questions, challenge packets, KenKen and other puzzles, leading group work

Career Readiness, Life Literacies, and Key Skills NJSLS

Please select all standards that apply to this unit of study:

Act as a responsible and contributing community members and employee
Attend to financial well-being
Consider the environmental, social and economic impacts of decisions
Demonstrate creativity and innovation

Utilize critical thinking to make sense of problems and persevere in solving them
Model integrity, ethical leadership and effective management
Plan education and career paths aligned to personal goals
Use technology to enhance productivity increase collaboration and communicate effectively
Work productively in teams while using cultural/global competence

Suggestions on integrating these standards can be found at: https://www.nj.gov/education/standards/clicks/

Unit 6

Everyday Math

Summary and Rationale

Sequence and order are important concepts in all school subjects and in daily life. When children learn to count, they learn that numbers follow sequential order. Numbers can be used for different purposes and they can also be represented in different ways. One example is the relationship between cardinal and ordinal numbers. Learning to order things, be it events, physical position, or preferences, sets the pace for basic understanding of sequence and patterns.

The unit presents another application of sequence- the days of the week and the months of the year. Everything children do, from attending school, to playing sports, to watching television, is related to the concept of time. Children should recognize the names of the days of the week and the months of the year and understand their relationship. The dates in a month also help strengthen numerical sense. Knowing the days of the week and the months of the year is the most basic form of time awareness.

Kindergarten students should be encouraged to look for patterns in their environment, such as tile patterns or the patterns in routine events. Most kindergarteners already recognize simple patterns and many find them appealing because of their need for organization and structure. The simple patterns children use and create in kindergarten provide a basis for increasingly complex patterns. Extending and creating patterns not only reinforces the properties of shapes, but also sets the foundation for more complex patterns such as number patterns.

Using money is a real-world application of concepts taught in the numbers and operations strand of mathematics. Students apply counting strategies when counting coins such as pennies, nickels, and dimes. Learning to count coins also complements what students already know about sorting, likeness, and differences, counting, adding, subtracting, and using number sentences.

Recommended Pacing

Continuous- throughout the school year

Standards

Measurement	
K.M.3	Understand that certain objects are coins and dollar bills, and that coins and dollar bills represent money. Identify the values of all U.S. coins and one-dollar bills.
Mathematical Practices	
K-12.MP.1	Make sense of problems and persevere in solving them.

K-12.MP3	Construct viable arguments and critique the reasoning of others.
K-12.MP.4	Model with mathematics.
K-12.MP.5	Use appropriate tools strategically.
K-12.MP.6	Attend to precision.
K-12.MP.7	Look for and make use of structure.
Interdisciplinary Connections	
ELA	
SL.K.1.	Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups. A. Follow agreed-upon norms for discussions (e.g., listening to others with care and taking turns speaking about the topics and texts under discussion). B. Continue a conversation through multiple exchanges.
SL.K.5.	Add drawings or other visual displays to descriptions as desired to provide additional detail.
SL.K.6.	Speak audibly and express thoughts, feelings, and ideas clearly.
Integration of Technology	
8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
Career Readiness, Life Literacies and Key Skills	
9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
9.1.2.FL.1	Differentiate the various forms of money and how they are used (e.g., coins, bills, checks, debit and credit cards).
9.1.2.FP.1	Explain how emotions influence whether a person spends or saves.
9.1.2.FP.2	Differentiate between financial wants and needs.
9.1.2.FP.3	Identify the factors that influence people to spend or save (e.g., commercials, family, culture, society).
9.1.2.PB.2	Explain why an individual would choose to save money.
9.2.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job

9.2.2.CAP.2	Explain why employers are willing to pay individuals to work.
9.4.2.CI.1	Demonstrate openness to new ideas and perspectives.
9.4.2.CI..2	Demonstrate originality and inventiveness in work.
9.4.2.CT.1	Gather information about an issue and collaboratively brainstorm ways to solve the problem.
9.4.2.CT.2	Identify possible approaches and resources to execute a plan.
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
9.4.2.IML2	Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).
9.4.2.IML.4	Compare and contrast the way information is shared in a variety of contexts (e.g., social, academic, athletic)

Instructional Focus

Enduring Understandings:	Essential Questions:
Ordinal words can be used to sequence events. Examples are first, next, last, first, second, third, before and after. Ordinal words can be used to describe physical position and ranks of preference. Calendars are used to show days, weeks, and months of a year. Patterns are used everywhere Examples are word patterns, art patterns, math patterns, and behavior patterns. Patterns can be described, reproduced, extended, and created. Each coin represents a specific money value. Coins have values and are combined to create larger amounts of money.	What words can be used to describe physical position? What words can be used to sequence events? Why is sequencing events important? What are the days of the week? What are the months of the year? How can the months of the year be compared? What is a pattern? How do we make patterns? How do we determine what comes next in a given pattern? Why is it important to identify the coins? Why do I need to know how to count the value of coins? Why do we have money?

Evidence of Learning (Assessments)

Calendar Math Activities
Math Centers
Homework
Classwork
Class Participation

Objectives (SLO)

Students will know:

- How to order 3- and 4-step events using the terms *first, next, last, second*, and *third*.
- How to order physical position as well as relate order to the terms *before* and *after*.
- How to order their preferences, make picture graphs, and make deductions based on the picture graphs.
- How to name and order the days of the week
- How to name and order the months of the year
- Other terms related to time: *day, week, year, today, tomorrow, yesterday*
- Comparative words: *warmer, cooler*
- Pattern Unit
- Repeating Patterns
- How to create and extend repeating patterns by identifying the pattern unit and duplicating it.
- How to identify coins and a one-dollar bill by appearance and value*: penny, nickel, dime, quarter*
- Other vocabulary: *cent, change, one-dollar bill*
- How to add coins to pay for objects with a combined value of up to 10 cents.
- The concept of receiving change for a payment.

Students will be able to:

- Sequence events.
- Use and understand *first, next,* and *last* to sequence events.
- Use and understand *first, second*, and *third* to sequence events, in terms of physical position, and to rank personal preferences.
- Understand *before* and *after i*n terms of physical position.
- Make picture graphs based on preferences.
- Name and know the days of the week and the months of the year and how many there are.
- Use and understand *today, tomorrow*, and *yesterday.*
- Read and understand a weekly calendar.
- Order the days of the week and the months of a year.
- Make and interpret pictographs.
  Recognize, extend, and create a repeating pattern.
- Identify a missing portion of a repeating pattern.
- Create ABABAB, AABAAB, ABBABB, and ABCABC repeating patterns.
- Identify a one-dollar bill, penny, nickel, dime, and quarter and the value of each.
- Add coins up to 10 cents.
- Use pennies to buy up to three objects (up to 10 cents).
- Identify and recognize different combinations of coins that make up 10 cents.

Suggested Resources/Technology Tools

Math Centers
Calendar math Activities

<u>Resources and Manipulatives</u>
Student Activity Cards
Attribute Blocks
Teacher Activity Cards

Plastic Coins
Calendar
Online Resources
HMH Ed: Your Friend in Learning

www.moneyinstructor.com
www.usmint.gov
https://www.mathgames.com/kindergarten Grade K Concepts by Topic
https://www.ixl.com/math/kindergarten Grade K Concepts by Topic
http://www.abcya.com/learning_coins.htm Learning and Sorting Coins
https://jr.brainpop.com/math/time/calendaranddates/ Calendar Video
https://jr.brainpop.com/math/money/dollarsandcents/ Dollars and Cents Video
https://www.youtube.com/watch?v=pnXJGNo08v0&list=PLQK2XiUY9C2gXua-_3AB_nI49hpPVq01y&index=17&t=0s Coins Video
https://jr.brainpop.com/math/geometry/patterns/ Patterns Video

Literacy Connections
Math Journal
The Grouchy Ladybug by Eric Carle
What Time is it Mr. Crocodile? By Judy Sierra
Pattern Fish by Trudy Harris
The Coin Counting Book by Rozanne Williams
Benny's Pennies by Pat Brisson
Henry's Pennies by Louise Greep McNamara

Tier 1 Modifications and Accommodations

Including special education students, Multilingual Language Learners (MLLs), students at risk of school failure, gifted and talented students, and students with 504 plans;

General Modifications for students struggling to learn:

Small group instruction within the classroom
Differentiation through content, process, product,and environment
Individual feedback and praise towards what is done correctly based upon effort, attitude and strategy.
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