

Englewood Public School District Math

KINDERGARTEN

Unit 3: Counting On, Patterns, Number Facts, Sorting, and Length & Height

Overview: In this unit, students will learn how to count on and count back using manipulatives, mental math, and their fingers. Students will also identify and create patterns and begin to learn how to compose and decompose numbers through 20. They will learn about comparing, measuring, and identifying differences in length and weight of objects using nonstandard units. Lastly, they will classify things by one or two attributes.

Time Frame: 45 Days

Enduring Understandings:

- *Numbers can be compared to objects and one another.*
- *Objects can be matched up, sorted into collections, and identified by attributes.*
- *Math story problems can be represented and solved using numbers and/or objects.*
- *Counting on and counting back help us to understand how numbers increase and decrease in value.*
- *Numbers can be composed and decomposed.*
- *There are many ways to measure objects.*

Essential Questions: Students will keep considering...

- *Why do we use numbers?*
- *How do numbers relate and compare to one another?*
- *What is a pattern and why do we study patterns?*
- *Why do we compose and decompose numbers?*
- *How can objects be classified and sorted?*
- *How does estimation help you find reasonable measurement?*
- *When do you need to measure?*
- *Why are number facts important to learn?*

Standards	Topics and Objectives	Activities	Resources	Assessments
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<p>K.CC.A.1. Count to 100 by ones and by tens.</p> <p>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)</p> <p>K.CC.B.4. Understand the relationship between numbers and quantities; connect counting to cardinality.</p> <p>K.CC.B.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.</p> <p>K.CC.B.4b. 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</p>	<p>Topics: Counting on & counting back, patterns, number facts, length and height, classifying and sorting</p> <p>Students will:</p> <ul style="list-style-type: none"> Count on to 10 Count back from 10 Extend the concept of counting back using fingers. Apply the concept of counting back using other representations Make a connection between using one-to-one correspondence to find how many more Revisit number conservation Learn repeating patterns Identify a pattern unit Make a connection between recognizing pattern units and 	<p>Students will watch a video about becoming an architect and how math is used in that career. (9.2.4.A.3, 9.2.4.A.4)</p> <p>Students will practice Calendar Patterns on a daily basis to learn days of the week and months of the year.</p> <p>Students will have daily math centers to reinforce previously taught math skills and to practice writing numbers. During centers students will be pulled for small group or differentiated instruction based upon student needs and math topics.</p> <p>Students will read and recite a rhyme about a number train and counting on your fingers to match the train cars. (SL.K.1, RL.K.10) (CRP2)</p> <p>Students will look at the Big</p>	<p>YouTube: <i>Careers for Kids: I Want to Be an Architect! - Kids Dream Jobs - Can You Imagine That?</i> https://youtu.be/zvewCudtFZs</p> <p>Math text: <i>Math In Focus Chapter 10</i></p> <ul style="list-style-type: none"> <i>Physical Postition Lesson 10.3</i> <i>Winning Order Lesson 10.4</i> <p>Materials:</p> <ul style="list-style-type: none"> Calendar <i>Every Day Counts: Calendar Math</i> <p>Materials:</p> <ul style="list-style-type: none"> Exact path Independent Practice Hands-on-Math (manipulative/activity kit) 	<p>Benchmark Assessments:</p> <ul style="list-style-type: none"> Common Formative Assessment Exact Path <p>Formative Assessments: Instructors confer with students to investigate their knowledge of math strategies and number sense</p> <p>Teacher observation and anecdotal notes</p> <p>Class participation</p> <p>Do-Now/entrance slip</p> <p>Checks for Understanding</p> <p>Mathematical Discourse Questions Curriculum Associates <i>iReady: Promoting Mathematical Discourse</i></p>
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in which they were counted.					https://www2.curriculumassociates.com/products/ready-100-q-promoting-math-discourse.aspx
K.CC.B.4c. Understand that each successive number name refers to a quantity that is one larger.				Math In Focus Chapter 12	
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.	<ul style="list-style-type: none"> • completing repeating patterns • Use attribute blocks to make or extend patterns • Extend the concept of using other attributes to create repeating patterns • Compose and decompose numbers through 10 • Learn number facts to 10 • Learn combining sets to 10 • Compose and decompose numbers to 20 • Compare heights • Compare lengths • Compare lengths and heights using nonstandard units • Sort objects by their attributes 	<p>Book and count the number of t-shirts on a clothesline and count them from left to right and right to left and discuss if the number of t-shirts is the same. (CRP4)</p> <p>Students will revisit using fingers to count, and learn how to count on and the term how many more.</p> <p>Students will learn how to count back and find differences using fingers.</p> <p>Students will be introduced to repeating patterns and how to identify a pattern unit. Students will look at pictures of repeating patterns like day and night, and the four seasons. Students will also use total physical response to clap out patterns. (CRP6)</p> <p>Students will work in partners using student activity cards and attribute blocks to make a pattern. After they create patterns</p>	<ul style="list-style-type: none"> • Big Book B, pp. 16-17 • Big Book B, pp. 18-19 • Teacher Activity Cards 12.1a-j • Number cubes (1 per pair) • Student Book B, Part 1, pp. 47-48 • Big Book B, pp. 20-21 • Colored pencils (1 box per child) • Big Book B, pp. 22-23 • Student Numeral Cards 0-10 (2 sets per group) • String, Adhesive tape • Counters • Sticky notes • String 	<p>Grab & Go Centers</p> <p>Cross-Curricular Center Activities</p> <p>Pair-sharing</p> <p>Exact Path</p> <p>Summative Assessments:</p> <p>Student Assessments (chapter tests, unit tests & enrichment tests)</p> <p>Performance Tasks/Projects</p> <p>Exact Path</p> <p>Alternative Assessments:</p> <p>Students will respond to oral questioning and</p>	
K.OA.A.1. Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.				Math In Focus Chapter 13	
K.OA.A.3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g. using objects or drawings, and			<ul style="list-style-type: none"> • Big Book B, pp. 24-25 		

record each decomposition by a drawing or equation (e.g. $5 = 3 + 2$ 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 (by the end of Kindergarten).

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 (e.g. $18 = 10 + 8$); Understand that these numbers are composed of ten ones and one, two, three, four, five,

with blocks they can duplicate and extend patterns using virtual manipulatives.

Students will be introduced to composing numbers through 10 by watching a short video about composing numbers. Students will then use connecting cubes, paper, and colored pencils to show different color combinations of grandma's sweater buttons, that all add up to ten. (CRP11)

Students will make a connection between composing and decomposing numbers through 10 and extend the concept of how greater numbers can be broken up into lesser numbers using student numeral cards, colored pencils, counters, and their student books. (SL.K.1)

- Pencils (3), Erasers (3)
 - Attribute blocks (12 per group- 4 big and 4 small of Shape A and 4 small of Shape B)
 - Student Activity Cards 13.2a-h (1 set per pair)
 - Student Book B, Part 1, pp. 53-55
 - Colored pencils (1 box per child)
 - Paper
 - Virtual manipulatives
- restate or rephrase response to animated math models
- Students will participate in class discussions

Math In Focus Chapter 14

YouTube: Grandma's Sweater (Composing numbers Song)

<https://youtu.be/gXwuwJqYwM4>

Math In Focus Chapter 14

- Connecting cubes (55 yellow, 55 blue)

six, seven, eight, or nine ones.

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 differences. 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.

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

Students will be introduced to combining sets to make 10 and they will extend the concept of combining sets. Students will look at the class big book and determine the number of students at the table (10), the number of sandwiches (8) and determine if there are enough for everyone. Ask students how many more sandwiches are needed. (CRP2, CRP4, CRP8)

Students will have a tea party in order to learn how to combine sets and make a total to match the required number. (NJSLSA.SL.1)

- Paper (1 sheet per child)
- Colored pencils (1 box per child)
- Student Numeral Cards 0-10 (6 sets)
- Student Book B, Part 1, pp. 56-59
- Big Book B, pp. 26-27
- Sandwiches (TR42), 20
- Apples (TR43), 20
- Glasses (TR44), 20
- Connecting cubes, 30 per group (10 red, 10 yellow, 10 blue)
- Student Book B, Part 1, pp. 60-61
- Five-frame (TR45), 2 copies
- Adhesive tape
- Magnets, 10
- Ten-frame (TR46), 2 copies
- Adhesive tape
- Magnets, 20
- Five-frame (TR45), 2 copies
- Ten-frame (TR46), 2 copies per pair
- Counters, 20 per pair
- Big Book B, pp. 28-29

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?”

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

MP.2 Reason abstractly and quantitatively.

MP.4 Model with mathematics.

MP.7 Look for and make use of structure.

MP.8 Look for and express regularity in repeated reasoning

Students will watch a short video about decomposing numbers. (CRP11)

Students will compose and decompose numbers to 20 using five-frames and ten-frames.

Students will compare numbers using a number train, counters and a number line.

Students will apply the concept of using a number line to find a missing part in a part-part-whole situation
As an introduction to chapter 15 students will watch a video about comparing lengths. Students will discuss the length of different objects in the classroom environment. (CRP2, CRP4, CRP8, CRP11) (NJSLSA.SL1, SL.K.1)

Students will revisit how to identify long and short objects; revisit how to identify longer, shorter,

- Teacher Numeral Cards 0-20,
- Teacher Activity Cards 14.3a-e
- Adhesive tape
- Counters (15 per group)
- Number Line 0-15 (TR47) (1 per group)

YouTube: Decomposing Numbers

<https://www.youtube.com/watch?v=ICRiPnDink4>

Math In Focus ***Chapter 15***

YouTube: Comparing Lengths

longest, and shortest objects by looking at pictures with a variety of objects and answering questions about what they see and which objects are longer and shorter. (SL.K.1, NJSLA.SL1)

Students will make a connection by comparing lengths of paperclip snakes. They will work in small groups to complete this activity. (SL.K.1)

Students will be introduced to the concept of measuring length using connecting cubes as a nonstandard unit. They will use connecting cubes to measure, the Big Book, pencil, stapler, and eraser and any other object they have time to measure. Pairs will then write down the number of cubes used and draw a picture of the object they used. (NJSLA.W4, NJSLA.SL1, SL.K.1)

Students will compare heights using nonstandard

<https://youtu.be/Ad9NkMHsT4o>

Math In Focus

Chapter 15

- Big Book B, pp. 30-33
- Numeral Cards 11-20 (TR48) (1 set per group)
- Connecting Cubes
- Paper clips
- Classroom objects such as pencils, books, stapler, eraser, and pencil cases.
- Drinking straws
- Thick white string
- Markers
- Adhesive tape

Math In Focus

Chapter 15

- Connecting cubes (30)
- Big Book
- pencil
- stapler
- eraser
- Student Book B, Part 2, pp. 6-9

units. Students will be introduced to tallest and shortest vocabulary and pictures of varying sizes. Then students will work in teams to measure objects with string to determine the objects' lengths.

As an introduction to the unit, students will watch a short video song about sorting.

Students will work in pairs to sort objects by their attributes: They will sort by color, size, and shape. They will explain how they sorted the objects and then use virtual manipulatives to continue sorting and explaining their reasoning. (CRP2, CRP4, CRP8, CRP11) (SL.K.1) (6.1.4.D.13, 6.1.4.D.19, 6.1.4.D.20, 6.1.4.A.1)

Math In Focus
Chapter 15

- Big Book B, pp. 34-35
- Thick, white string (3 long pieces), markers (3 different colors)
- Tall book
- short book
- thick white string (1 piece)
- markers (2 different colors)
- connecting cubes (20)

Math In Focus
Chapter 16

YouTube: I Can Sort
<https://youtu.be/c5KBoDRm5J0>

Math In Focus
Chapter 16

- Connecting cubes
- Counters
- Attribute blocks
- Virtual manipulatives
- Paper clip
- Classroom objects, such as pencils, crayons, pencil cases and their contents

- A colorful picture book
- paper

Recommended Reading:

- Hague, Kathleen. *Numbears*. New York, NY: Henry Holt & Company, 1986. (ISBN 0-8050-1679-1)
- Hellen, Nancy. *The Bus Stop*. Shapleigh, ME: Orchard Books, 1988. (ISBN 0-531-05765-8)
- Hutchins, Pat. *I Hunter*. New York: Mulberry Books, 1982. (ISBN 0-688-06522-8)
- Kitamura, Satoshi. *When Sheep Cannot Sleep: The Counting Book*. Farrar, Strauss, Giroux, 1986.
- Maestro, Betsy. *Harriet Goes to the Circus: A Number Concept Book*. New York: Crown, 1977. (ISBN 0-517-55303-1)

- McGrath, Barbara Barbieri. *The M&M's Counting Book*. Watertown, MA : Charlesbridge Publishing, 1994. (ISBN 0-88106-853-5)
- Merriam, Eve. *12 Ways to Get to 11*. New York: Simon & Schuster, 1993. ISBN 0-671-75544-7) (addition)
- Owen, Annie. *Annie's One to Ten*. New York: Alfred A. Knopf, 1988. (ISBN 0-394-82791-0)
- Hoban, Tana. *Circles, Triangles and Squares*. New York: Macmillan, 1974. (ISBN 0-02744830-4)
- Hoban, Tana. *Is It Larger? Is It Smaller?* New York: Greenwillow Books, 1985. (ISBN 0-688-04028-4)
- Hoban, Tana. *Round, Round, Round*. New York, NY: Scholastic, Inc., 1983. (ISBN 0-590-33364-X)

- Hoban, Tana. *Shapes, Shapes, Shapes*. New York: Greenwillow Books, 1986. (ISBN 0-688-05833-7)

**Core Instructional/
supplemental materials:**

Think Central

<https://www-k6.thinkcentral.com/ePC/login.do>

Ten Frames

Watch this [video](#) to further build your knowledge about ten frames.

Math Facts

Check out these [games](#) that help students to learn their math facts. If you are interested to know what the required math fluencies are for each grade level from K-6, according to the NJSL and

PARCC, you can view them [here](#).

[Math is Fun](#) (K-12)

www.mathsisfun.com

This site offer mathematics in an enjoyable and easy-to-learn manner, and covers content from Kindergarten through 12th grade.

Integration of 21st Century Standards NJSL 9:

9.2.4.A.3 Investigate both traditional and non-traditional careers and relate information to personal likes and dislikes.

9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Accommodations and Modifications:

Students with special needs: Support staff will be available to aid students related to IEP specifications. 504 accommodations will also be attended to by all instructional leaders. Physical expectations and modifications, alternative assessments, and scaffolding strategies will be used to support this learning. The use of Universal Design for Learning (UDL) will be considered for all students as teaching strategies are considered. Additional safety precautions will be made along with additional staff so all student can fully participate in the standards associated with this Math curriculum.

ELL/ESL students: Students will be supported according to the recommendations for “can do’s” as outlined by WIDA - https://www.wida.us/standards/CAN_DOs/

This particular unit has limited language barriers due to the physical nature of the curriculum.

Students at risk of school failure: Formative and summative data will be used to monitor student success at first signs of failure student work will be reviewed to determine support this may include parent consultation, basic skills review and differentiation strategies. With considerations to UDL, time may be a factor in overcoming developmental considerations. More time and will be made available with a certified instructor to aid students in reaching the standards.

Gifted and Talented Students: Students excelling in mastery of standards will be challenged with complex, high level challenges related to the complexity of the Math requirements. This will include allowing more opportunities to demonstrate creativity and the design of original choreography.

English Language Learners	Special Education	At-Risk	Gifted and Talented
<ul style="list-style-type: none">• Speak and display terminology and movement• Teacher modeling• Peer modeling• Develop and post routines• Label Math and classroom materials• Word walls• Use visuals• Provide peer tutoring• Chants, songs, choral reading• Work toward longer passages as skills in English increase• Introduce key vocabulary before lesson• Teacher reads aloud daily• Preferential seating• Small group instruction• Use audio books• Allow extra time to complete	<ul style="list-style-type: none">• Utilize modifications & accommodations delineated in the student’s IEP• Work with paraprofessional• Use multi-sensory teaching approaches to provide helpful visual, auditory, and tactile reinforcement of ideas.• Work with a partner• Provide concrete examples and relate all new concepts to previously learned concepts or to typical life skills at home (i.e., open and close a door for a pulling or pushing movement).• Solidify and refine concepts through repetition.• Change work requirements to reduce activity time	<ul style="list-style-type: none">• Using visual demonstrations, illustrations, and models• Allow extra time to complete assignments or tests• Peer modeling• Teacher modeling• Give directions/instructions verbally and in simple written format.• Peer Support• Increase one on one time• Teachers may modify instructions by modeling what the student is expected to do• Instructions may be printed out in large print and hung up for the student to see during the time of the lesson.• Review behavior expectations and make adjustments for personal space or other behaviors as needed.• Oral prompts can be given.	<ul style="list-style-type: none">• Curriculum compacting• Inquiry-based instruction• Independent study• Higher order thinking skills• Adjusting the pace of lessons• Interest based content• Real world scenarios• Student Driven Instruction• Ask open-ended questions• Use centers and group students according to ability and interest• Create an enhanced set of introductory activities• Organize and offer flexible small group learning activities• Use centers, contracts, or stations• Debrief students

assignments or tests <ul style="list-style-type: none"> ● Assign a picture or movement to vocabulary words ● Small group instruction-guided reading and guided writing ● Oral prompts can be given. 	<ul style="list-style-type: none"> ● Preferential seating ● Pre-teaching and re-teaching skills and concepts ● Front load vocabulary ● Chants, songs, choral reading ● Introduce key vocabulary before lesson ● Teacher reads aloud daily ● Use audio books ● Allow extra time to complete assignments or tests ● Use a scribe for non-writers ● Large print texts and or Braille, or audio books ● Augmentative communication system ● Assistive Technology ● Oral prompts can be given. ● Allow answers to be given orally or dictated 	<ul style="list-style-type: none"> ● Allow answers to be given orally or dictated 	
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Interdisciplinary Connections:

ELA - NJSLS/ELA:

RL.K.10. Actively engage in group reading activities with purpose and understanding.

SL.K.1. Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.

NJSLSA.W4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

NJSLSA.SL1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

Science:

K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

Integration of Technology Standards NJSL 8:

8.1.2.A.1: Identify the basic features of a digital device and explain its purpose.

8.1.2.E.1: Use digital tools and online resources to explore a problem or issue.

8.1.2.B.1: Illustrate and communicate original ideas and stories using multiple digital tools and resources.

Career Ready Practices:

CRP2. Apply appropriate academic and technical skills.

CRP4. Communicate clearly and effectively and with reason.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

CRP6. Demonstrate Creativity and innovation.

CRP11. Use technology to enhance productivity.

Vocabulary: day, week, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, today, tomorrow, yesterday, month, year, January, February, March, April, May, June, July, August, September, October, November, December, warmer, cooler, repeating pattern, pattern unit, long, longer, longest, short, shorter, shortest, tall, taller, tallest, color, shape, size, pattern, same, different, sort