

# Branchburg Township Public Schools

Office of Curriculum and Instruction

## Kindergarten Math Curriculum



Adopted by the Board of Education September 2023

This curriculum is aligned with the 2016 New Jersey Student Learning Standards in Mathematics

## Curriculum Scope and Sequence

|                     |             |                                  |              |
|---------------------|-------------|----------------------------------|--------------|
| <b>Content Area</b> | Mathematics | <b>Course Title/Grade Level:</b> | Kindergarten |
|---------------------|-------------|----------------------------------|--------------|

|                                | Topic/Unit Name   | Suggested Pacing    |
|--------------------------------|---|---------------------|
| <a href="#"><u>Unit #1</u></a> | Math in Our World   | September - October |
| <a href="#"><u>Unit #2</u></a> | Numbers 1-10  | October - November  |
| <a href="#"><u>Unit #3</u></a> | Flat Shapes All Around Us (+ Unit 7 Section B)            | November - December |
| <a href="#"><u>Unit #4</u></a> | Understanding Addition and Subtraction                    | January             |
| <a href="#"><u>Unit #5</u></a> | Composing and Decomposing Numbers 1-10                    | February - March    |
| <a href="#"><u>Unit #6</u></a> | Numbers 0-20  | March               |
| <a href="#"><u>Unit #7</u></a> | Solid Shapes All Around Us (Section A + Review Section B) | April               |
| <a href="#"><u>Unit #8</u></a> | Pulling It All Together                                   | April - May         |

|  |                          |   |                     |
|--|--------------------------|---|---------------------|
| <b>Unit 1 Title</b>  | <b>Math in Our World</b> | <b>Approximate Pacing</b>   | September - October |
| <b>STANDARDS</b>   |                          |   |                     |
| <b>NJSLS Math</b>  |                          |   |                     |
| <p>K.CC.A. Know number names and the count sequence</p> <p>K.CC.A.1 Count to 100 by ones and 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 Count to tell the number of 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.G.B B. Analyze, compare, create, and compose shapes.</p> <p>Standards for Mathematical Practice</p> <p>1 Make sense of problems and persevere in solving them.</p> <p>2 Reason abstractly and quantitatively.</p> <p>3 Construct viable arguments and critique the reasoning of others.</p> <p>4 Model with mathematics.</p> <p>5 Use appropriate tools strategically.</p> <p>6 Attend to precision.</p> <p>7 Look for and make use of structure.</p> <p>8 Look for and express regularity in repeated reasoning.</p> |                          |   |                     |
| <b>Interdisciplinary Connections:</b>  |                          | <b>Computer Science &amp; Design Thinking:</b>  |                     |
| <p>NJSLSA.ELA.Literacy.SL.K</p> <p>SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.</p> <p>SL.K.1.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).</p> <p>SL.K.1.B Continue a conversation through multiple exchanges.</p> <p>SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.</p> <p>SL.K.5 Add drawings or other visual displays to descriptions as desired to provide additional detail. <i>Example: Students will draw representations for two</i></p>   |                          | <p>Computer networks can be used to connect individuals to other individuals, places, information, and ideas. The Internet enables individuals to connect with others worldwide.</p> <p>8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network. Example: students choose an app on the iPad to practice their math skills during math workshop with technology daily)</p> |                     |

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| <p><i>given numbers and determine which group is larger/smaller.</i></p> <p>SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.<br/> <i>Example: Subitizing practice: Children are shown a set of dots or items and then he or she will describe it to the class, sharing what they saw and how they saw it. (i.e. I saw 2 dots there and one dot there and I counted OR I saw one dot, one dot, one dot and counted 1, 2, 3)</i></p> <p><i>Example: Students will learn the routines of use center activities where they will need to focus on habits of how to work together.</i></p>  |  |
| <b>Career Readiness, Life Literacies, and Key Skills:</b>  |  |
| <p>There are actions an individual can take to help make this world a better place.<br/> 9.1.2.CR.1: Recognize ways to volunteer in the classroom, school and community <i>Example: When launching the math workshop students will learn about working together, cleaning up rotations for others, partnerships etc.</i></p> <p>Different types of jobs require different knowledge and skills.<br/> 9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job <i>Example: When discussing numbers and how to identify them as well as correctly count objects talk about the jobs that you would need to be able to use this skill in - illicit answers from students</i></p> <p>There are ways to keep the things we value safely at home and other places.<br/> 9.1.2.RM.1: Describe how valuable items might be damaged or lost and ways to protect them. <i>Example: During the launch of the unit students will learn how we can keep our materials safe and how to respect our classroom environment and math tools.</i></p> |  |
| <b>UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS</b>   |  |
| <ul style="list-style-type: none"> <li>*How do we count?</li> <li>*Why do we count?</li> <li>*What happens when we combine groups?</li> <li>*What happens when we take groups apart?</li> <li>* Numbers have names and we can use them to count.</li> <li>* Everything can be counted.</li> <li>* Number names tell us how many objects are in groups and allow us to compare groups.</li> </ul>   |  |
| <b>STUDENT LEARNING OBJECTIVES</b>   |  |
| <b>Key Knowledge</b>   | <b>Process/Skills/Procedures/Application of Key Knowledge</b>  |
| <p><b><i>Students will know:</i></b></p> <ul style="list-style-type: none"> <li>*How to explore and use math tools.</li> <li>*How to share mathematical ideas with a partner.</li> <li>*how to recognize and name groups of up to 4 objects and images without counting.</li> <li>*how to answer “are there enough” questions.</li> <li>*count groups of up to 10 objects.</li> </ul>  | <p><b><i>Students will be able to:</i></b></p> <ul style="list-style-type: none"> <li>*Say the count sequence to 10.</li> <li>*Say one number for each object.</li> <li>*Answer how many without counting again.</li> <li>*Show quantities on fingers.</li> <li>*Recognize and name groups of 1, 2, or 3 objects or images without counting.</li> <li>*Recognize and name groups of 4 objects or images without counting.</li> </ul> |

\*Identify groups with the same number of objects (for groups of up to 4 objects).

**ASSESSMENT OF LEARNING**

**Summative Assessment**  
(Assessment at the end of the learning period)

- Unit 1 Assessment**
- [Unit 1: Math in Our World](#)

**Formative Assessments**  
(Ongoing assessments during the learning period to inform instruction)

- slate routines
- small-group notes
- Illustrative Section Checkpoints
- [Unit 1 Checkpoints A,B,C,D](#)

**Alternative Assessments** (Any learning activity or assessment that asks students to *perform* to demonstrate their knowledge, understanding and proficiency)

- \*Act It Out Activity: students connect language to mathematical representation
- \*How Many Do You See Activity: students recognize and name small groups of dots and describe how they see them
- \*Questions About Us Activity: students associate one number with one person as they count students in the class.
- \*Center Recording Sheets
- \*Illustrative Student Workbook Unit 1

**Benchmark Assessments**  
(used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)

[Benchmark Assessment](#) Half given Beginning of year and full Given Mid Year and End Of Year

**RESOURCES**

**Core instructional materials:**

Illustrative Teacher Guide - Grade K Unit 1

**Supplemental materials:**

- [Additional Resources On Drive](#)
- [Counting Collection 1 Resource](#)
- [Counting Collection 2 Resource](#)
- Guided Math Raegan Tunstall

|                                   |
|-----------------------------------|
| <b>Modifications for Learners</b> |
| See <a href="#">appendix</a>      |

|   |                       |                           |                    |
|---|-----------------------|---------------------------|--------------------|
| <b>Unit 2 Title</b>   | <b>Numbers 0 - 10</b> | <b>Approximate Pacing</b> | October - November |
| <b>STANDARDS</b>  |                       |                           |                    |
| <b>NJSLS Math</b>   |                       |                           |                    |
| K.CC.A.1 Count to 100 by ones and tens  |                       |                           |                    |
| K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). |                       |                           |                    |

K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality.  
 K.CC.B.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.  
 K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.  
 K.CC.C.7 Compare two numbers between 1 and 10 presented as written numerals.

**Standards for Mathematical Practice**

- 1 Make sense of problems and persevere in solving them.
- 2 Reason abstractly and quantitatively.
- 3 Construct viable arguments and critique the reasoning of others.
- 4 Model with mathematics.
- 5 Use appropriate tools strategically.
- 6 Attend to precision.
- 7 Look for and make use of structure.
- 8 Look for and express regularity in repeated reasoning.

| <b>Interdisciplinary Connections:</b> | <b>Computer Science &amp; Design Thinking:</b> |
|---------------------------------------|--|
|---------------------------------------|--|

NJSLSA.ELA.Literacy.SL.K  
 SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.  
 SL.K.1.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).  
 SL.K.1.B Continue a conversation through multiple exchanges.  
 SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.  
 SL.K.5 Add drawings or other visual displays to descriptions as desired to provide additional detail. *Example: Students will draw representations for two given numbers and determine which group is larger/smaller.*  
 SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.  
*Example: Students are encouraged to participate in discussions regarding comparing objects using terms such as “fewer,” “more,” and “same.”*  
*Example: Students will continue to use center activities where they will need to focus on habits of how to work together.*

Computer networks can be used to connect individuals to other individuals, places, information, and ideas. The Internet enables individuals to connect with others worldwide.  
 8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network. *Example: students choose an app on their chromebook to practice their math skills during math workshop with technology daily)*

| <b>Career Readiness, Life Literacies, and Key Skills:</b> |
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|---|

9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2). *Example: Students show flexibility and*

*multiple ways of seeing numbers when subitizing and problem solving. Students are open to the methods/strategies of others when ways are shared.*  
 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a). *Example: Subitizing warm-up for recognition of numbers.*

**UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS**

- \*Why do we count?
- \*How many?
- \*How can I count images in an organized arrangement?
- \*I can compare written numbers 1-10.
- \*Numbers are a symbol to represent a quantity.
- \*You can add to or take away from a quantity in several ways.

**STUDENT LEARNING OBJECTIVES**

**Key Knowledge**

**Process/Skills/Procedures/Application of Key Knowledge**

- Students will know:**
- \*how to connect quantities with spoken number words
  - \*how to count and compare up to 10 objects and know the number remains the same regardless of the arrangement of the objects
  - \*how to understand the relationship between number and quantity.
  - \*how to compare written numbers 1-10

- Students will be able to:**
- \*Say one number for each object.
  - \*Answer how many without counting again.
  - \*Answer how many about a group that has been rearranged without counting again.
  - \*Use the structure of 5 (in 5-frames or fingers) to count on from 5 to tell how many.
  - \*Compare the number of objects in groups.
  - \*Use “more,” “fewer,” and “the same number” to describe comparisons.
  - \*Make groups with more, fewer, or the same number of objects than a given group.
  - \*Match groups of objects or images to the spoken number word that tells how many.
  - \*Match groups of objects or images to the written number that tells how many.
  - \*Count out 1–10 objects or draw 1-10 images to match a given number.
  - \*Write numbers 1–10.
  - \*Recognize numbers 1–10.
  - \*Represent numbers with drawings or objects in order to compare.
  - \*Use knowledge of the count sequence or understanding of magnitude of numbers to compare numbers.
  - \*Use “more,” “less,” and “the same number” to describe comparisons of written numbers.

**ASSESSMENT OF LEARNING**

**Summative Assessment**  
 (Assessment at the end of the learning period)

- Unit 2 Assessment**
- [Unit 2- Numbers 1-10](#)



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| <p><b>Formative Assessments</b><br/>(Ongoing assessments during the learning period to inform instruction)</p>   | <p>-slate routines<br/>-small-group notes<br/>-Illustrative section checkpoints</p> <ul style="list-style-type: none"> <li>• <a href="#">Unit 2 Section A Checkpoint</a></li> <li>• <a href="#">Unit 2 Section B Checkpoint</a></li> <li>• <a href="#">Unit 2 Section C Checkpoint</a></li> <li>• <a href="#">Unit 2 Section D Checkpoint</a></li> </ul>   |
| <p><b>Alternative Assessments</b> (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>   | <p>*Choral count Activity: students practice the verbal count sequence to 30<br/>*How Many Do You See Activity: students represent quantities with their fingers and work toward recognizing quantities presented on fingers without having to count<br/>*How Many Do You See Activity: students recognize and name small groups of dots and describe how they see them<br/>*Questions About Us Activity: students associate one number with one person as they count students in the class.<br/>*Act It Out Activity: students connect language to mathematical representation<br/>*Center Recording Sheets<br/>*Illustrative Student Workbook Unit 2</p> |
| <p><b>Benchmark Assessments</b><br/>(used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>   | <p><a href="#">Benchmark Assessment</a> Half given Beginning of year and full Given Mid Year and End Of Year</p>   |
| <b>RESOURCES</b>   |  |
| <p><b>Core instructional materials:</b></p> <p>Illustrative Teacher Unit Guide- Grade K Unit 2</p>   |  |
| <p><b>Supplemental materials:</b><br/><a href="#">Additional Resources On Drive</a><br/><a href="#">Counting Collection 1 Resource</a><br/><a href="#">Counting Collection 2 Resource</a><br/>Guided Math Raegan Tunstall<br/>Developing Number Concepts</p> |  |
| <b>Modifications for Learners</b>  |  |
| <p>See <a href="#">appendix</a></p>  |  |

| Unit 3 Title   | Flat Shapes All Around Us (+ Unit 7 Section B) | Approximate Pacing | November - December |
|--|--|--------------------|---------------------|
| <b>STANDARDS</b>   |  |                    |                     |
| <b>NJSLS Math</b>  |  |                    |                     |
| <p>K.G.A.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.</p> <p>K.G.A.2 Correctly name shapes regardless of their orientations or overall size.</p> <p>K.G.A.3 Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).</p> <p>K.G.B.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).</p> <p>K.G.B.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.</p> <p>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?”</p> |  |                    |                     |

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

K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

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

K.CC.B.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.

K.CC.C Compare numbers.

K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. Include groups with up to ten objects.

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

K.MD.A Describe and compare measurable attributes.

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

K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.

K.MD.B.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. Limit category counts to be less than or equal to 10.

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, six, seven, eight, or nine ones.

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.

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

K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g.,  $5 = 2 + 3$  and  $5 = 4 + 1$ ).

K.OA.A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

K.OA.A.5 Fluently add and subtract within 5.

Standards for Mathematical Practice

- 1 Make sense of problems and persevere in solving them.
- 2 Reason abstractly and quantitatively.
- 3 Construct viable arguments and critique the reasoning of others.
- 4 Model with mathematics.
- 5 Use appropriate tools strategically.
- 6 Attend to precision.
- 7 Look for and make use of structure.
- 8 Look for and express regularity in repeated reasoning.

**Interdisciplinary Connections:**

**Computer Science & Design Thinking:**

|  |  |
|--|--|
| <p>NJSLSA.ELA.Literacy.SL.K</p> <p>SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.</p> <p>SL.K.1.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).</p> <p>SL.K.1.B Continue a conversation through multiple exchanges.</p> <p>SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.</p> <p>SL.K.5 Add drawings or other visual displays to descriptions as desired to provide additional detail. <i>Example: Students will draw representations for two given numbers and determine which group is larger/smaller.</i></p> <p>SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly. <i>Example: Students are encouraged to participate in discussions regarding the attributes of shapes, using informal language to describe, compare and sort them. They will also be introduced to the “Which One Doesn’t Belong” routine in this unit, which emphasizes the student’s ability to explain why an image doesn’t belong.</i></p> <p><i>Example: Students will continue to use center activities where they will need to focus on habits of how to work together.</i></p> | <p>Computer networks can be used to connect individuals to other individuals, places, information, and ideas. The Internet enables individuals to connect with others worldwide.</p> <p>8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.</p> <p><i>Example: Students choose an app on the iPad or chromebook to practice their math skills during math workshop with technology daily).</i></p> |
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**Career Readiness, Life Literacies, and Key Skills:**

Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.

9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3). *Example: In Section A Lesson 7, students get to work with straws to build shapes. Students initially compare the length of the straws and then use the straws to build shapes.*

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive). *Example: In Section B Lesson 12, students will fill in pattern block puzzles in different ways, showing that they can use multiple strategies to solve a problem.*

**UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS**

- \*What are the names and attributes of flat (two-dimensional) shapes?
- \*Where do we see flat shapes in our environment?
- \*How are flat shapes alike? How are they different?
- \*Congruent shapes are still “the same” even if they are in different orientations.
- \*I can compose larger shapes using smaller shapes.
- \*Positional words (above, below, next to, beside) can help describe the shapes I compose.

**STUDENT LEARNING OBJECTIVES**

| Key Knowledge   | Process/Skills/Procedures/Application of Key Knowledge  |
|---|---|
| <p><b>Students will know:</b></p> <ul style="list-style-type: none"> <li>*how to recognize and describe shapes in the environment.</li> <li>*how to use informal language to describe and compare shapes and their attributes.</li> <li>*how to put shapes together to form larger shapes.</li> <li>*how to describe and compare three dimensional shapes.</li> <li>*how to compare the weight and capacity of objects.</li> <li>*how to compose shapes from smaller shapes.</li> </ul> | <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>*Tell what is the same or different about two or more shapes.</li> <li>*Sort shapes into groups.</li> <li>*Compare the length of objects.</li> <li>*Identify circles, triangles, rectangles, and squares.</li> <li>*Identify the pattern blocks needed to fill a puzzle.</li> <li>*Recognize shapes that are the same regardless of orientation.</li> <li>*Count the number of pattern blocks used to make a shape.</li> <li>*Compare the number of pattern blocks used to make a shape.</li> <li>*Build solid shapes from components.</li> <li>*Put solid shapes together to compose new shapes.</li> </ul>   |
| <b>ASSESSMENT OF LEARNING</b>   |   |
| <p><b>Summative Assessment</b><br/>(Assessment at the end of the learning period)</p>   | <p><b>Unit 3 Assessment</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Unit 3-Flat Shapes All Around Us</a></li> </ul>  |
| <p><b>Formative Assessments</b><br/>(Ongoing assessments during the learning period to inform instruction)</p>  | <ul style="list-style-type: none"> <li>-slate routines</li> <li>-small-group notes</li> <li>-Illustrative Section Checkpoints <ul style="list-style-type: none"> <li>• <a href="#">Unit 3 Section A Checkpoint</a></li> <li>• <a href="#">Unit 3 Section B Checkpoint</a></li> <li>• <a href="#">Unit 7 Section B Checkpoint</a></li> </ul> </li> </ul>   |
| <p><b>Alternative Assessments</b> (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>  | <ul style="list-style-type: none"> <li>*Which One Doesn't Belong Activity: students compare different images and analyze the characteristics or attributes of the images.</li> <li>*Choral Count Activity: students practice the verbal count sequence to 30.</li> <li>*What Do You Know About ____? Activity: students share what they know about a given mathematical idea/concept.</li> <li>*Notice and Wonder Activity: students notice and wonder about an image that elicits mathematical discussion.</li> <li>*How Many Do You See Activity: students subitize or use grouping strategies to describe the images they see.</li> <li>*Center Recording Sheets</li> <li>*Illustrative Student Workbook Unit 3 and 7</li> </ul> |
| <p><b>Benchmark Assessments</b><br/>(used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>  | <p><a href="#">Benchmark Assessment</a> Half given Beginning of year and full Given Mid Year and End Of Year</p>  |
| <b>RESOURCES</b>  |   |

**Core instructional materials:**

Illustrative Teacher Guide - Grade K Unit 3

**Supplemental materials:****[Additional Resources On Drive](#)**

Guided Math Raegan Tunstall

Developing Number Concepts

**Modifications for Learners**

See [appendix](#)

| Unit 4 Title   | Understanding Addition and Subtraction | Approximate Pacing | January |
|--|--|--------------------|---------|
| <b>STANDARDS</b>   |  |                    |         |
| <b>NJSLS Math</b>  |  |                    |         |
| <p>K.CC.A Know number names and the count sequence</p> <p>K.CC.A1. Count to 100 by ones and by tens.</p> <p>K.CC.A2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).</p> <p>K.CC.A3. 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. Count to tell the number of objects.</p> <p>K.CC.B.4.c Understand that each successive number name refers to a quantity that is one larger</p> <p>K.CC.OA. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.</p> <p>K.CC.OA.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.</p> <p>K.CC.OA.2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.</p> <p>Standards for Mathematical Practice</p> |  |                    |         |

|   |   |
|---|---|
| <p>1 Make sense of problems and persevere in solving them.<br/> 2 Reason abstractly and quantitatively.<br/> 3 Construct viable arguments and critique the reasoning of others.<br/> 4 Model with mathematics.<br/> 5 Use appropriate tools strategically.<br/> 6 Attend to precision.<br/> 7 Look for and make use of structure.<br/> 8 Look for and express regularity in repeated reasoning.</p>   |   |
| <b>Interdisciplinary Connections:</b>   | <b>Computer Science &amp; Design Thinking:</b>  |
| <p>SL.K.1, SL.K.1.A, SL.K.1.B, SL.K.3, SL.K.6 (Speaking &amp; Listening)<br/> Students will share and present number stories that they will create and act out with partners.<br/> Students will collaborate with partners and members of their small group when working in Centers to describe how they solved problems.</p> <p>Students will continue to work in center activities where they will need to focus on habits of how to work together.</p> | <p>Computer networks can be used to connect individuals to other individuals, places, information, and ideas. The Internet enables individuals to connect with others worldwide.<br/> 8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network. <i>Example: Students choose an app on the iPad or chromebook to practice their math skills during math workshop with technology daily).</i></p> |
| <b>Career Readiness, Life Literacies, and Key Skills:</b>   |   |
| <p>Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.<br/> 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive). <i>Example: Students show different ways to make a number by drawing spots on ladybugs. Such as 3 can be made as 2 and 1 or 3 and 0.</i></p>   |   |
| <b>UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS</b>  |   |
| <p>*How do we count as high as we can go? How can we remember which number comes next?<br/> *How can we tell story problems?<br/> *How can we use objects or drawings to represent story problems?<br/> *How can numbers represent story problems?</p> <p>*Expressions can be used to represent story problems<br/> *Expressions are a statement of two numbers connected by an operator (plus or a minus) (ex: <math>2 + 3</math>)</p>                   |   |
| <b>STUDENT LEARNING OBJECTIVES</b>  |   |
| <b>Key Knowledge</b>  | <b>Process/Skills/Procedures/Application of Key Knowledge</b>   |

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| <p><b>Students will know:</b></p> <ul style="list-style-type: none"> <li>*addition as putting together and subtraction as taking from.</li> <li>*how to represent and solve add to, result unknown and take from, result unknown story problems within 10.</li> <li>*how to find the value of addition and subtraction expressions within 10.</li> <li>*how to relate addition and subtraction expressions to story problems.</li> </ul> | <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>*Keep track of which objects or images have been counted.</li> <li>*Count to find the total or difference.</li> <li>*Add or take away objects to represent addition and subtraction.</li> <li>*Accurately retell a story problem in their own words.</li> <li>*Understand the action in a story problem and act it out or demonstrate it with objects or drawings.</li> <li>*Use objects or drawings to represent a story problem.</li> <li>*Explain how objects or drawings represent a story problem.</li> <li>*Explain how an expression connects to a drawing or story problem.</li> <li>*Fill in an expression to represent a drawing.</li> <li>*Use fingers, objects, or drawings to find the value of an expression.</li> <li>*Count all to determine the total when 0 or 1 are added.</li> <li>*Use knowledge of the count sequence to determine the total when 1 is added.</li> </ul>  |
| <b>ASSESSMENT OF LEARNING</b>  |  |
| <p><b>Summative Assessment</b><br/>(Assessment at the end of the learning period)</p>  | <p><b>Unit 4 Assessment</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Unit 4 Assessment - Understanding Addition and Subtraction</a></li> </ul>   |
| <p><b>Formative Assessments</b><br/>(Ongoing assessments during the learning period to inform instruction)</p>   | <ul style="list-style-type: none"> <li>-slate routines</li> <li>-small-group notes</li> <li>-Illustrative Section Checkpoints <ul style="list-style-type: none"> <li>• <a href="#">Unit 4 Section A Checkpoint</a></li> <li>• <a href="#">Unit 4 Section B Checkpoint</a></li> <li>• <a href="#">Unit 4 Section C Checkpoint</a></li> </ul> </li> </ul>  |
| <p><b>Alternative Assessments</b> (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>   | <ul style="list-style-type: none"> <li>*Which One Doesn't Belong Activity: students compare different images and analyze the characteristics or attributes of the images.</li> <li>*Questions About Us Activity: students associate one number with one person as they count students in the class.</li> <li>*Choral Count Activity: students practice the verbal count sequence to 40/to count on from a given number</li> <li>*How Many Do You See Activity: students subitize or use grouping strategies to describe the images they see.</li> <li>*Act It Out Activity: students connect language to mathematical representation</li> <li>*Notice and Wonder Activity: students notice and wonder about an image that elicits mathematical discussion.</li> <li>*What Do You Know About ____? Activity: students share what they know about a given mathematical idea/concept.</li> <li>*Center Recording Sheets</li> <li>*Illustrative Student Workbook Unit 4</li> </ul> |
| <p><b>Benchmark Assessments</b><br/>(used to establish baseline)</p>   | <p><a href="#">Benchmark Assessment</a> Half given Beginning of year and full Given Mid Year and End Of Year</p>   |



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| achievement data and measure progress towards grade level standards; given 2-3 X per year)   |  |
| <b>RESOURCES</b>   |  |
| <b>Core instructional materials:</b><br><b>Illustrative Teacher Unit Guide - Grade K Unit 4</b>  |  |
| <b>Supplemental materials:</b><br><br><a href="#">Additional Resources On Drive</a><br><a href="#">Counting Collection 1 Resource</a><br><a href="#">Counting Collection 2 Resource</a><br>Guided Math Raegan Tunstall |  |
| <b>Modifications for Learners</b>  |  |
| See <a href="#">appendix</a>   |  |

| Unit 5 Title  | Composing and Decomposing Numbers 1-10 | Approximate Pacing | February - March |
|---|--|--------------------|------------------|
| <b>STANDARDS</b>  |  |                    |                  |
| <b>NJSLS Math</b>   |  |                    |                  |
| <p>K.CC.A.1 Count to 100 by 1s and tens</p> <p>K.CC.A.2 Count forward beginning from a given number within the known sequence -instead of having to begin at 1</p> <p>K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem</p> <p>K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., <math>5 = 2 + 3</math> and <math>5 = 4 + 1</math>)</p> <p>K.OA.A.5 Demonstrate fluency for addition and subtraction within 5</p> <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</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 Count to tell the number of objects</p> <p>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</p> <p>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</p> |  |                    |                  |

- Standards for Mathematical Practice
- 1 Make sense of problems and persevere in solving them.
  - 2 Reason abstractly and quantitatively.
  - 3 Construct viable arguments and critique the reasoning of others.
  - 4 Model with mathematics.
  - 5 Use appropriate tools strategically.
  - 6 Attend to precision.
  - 7 Look for and make use of structure.
  - 8 Look for and express regularity in repeated reasoning.

**Interdisciplinary Connections:**

NJSLSA.ELA.Literacy.SL.K  
 SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.  
 SL.K.1.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).  
 SL.K.1.B Continue a conversation through multiple exchanges.  
 SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.  
 SL.K.5 Add drawings or other visual displays to descriptions as desired to provide additional detail. *Example: Students will draw representations for two given numbers and determine which group is larger/smaller.*  
 SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.  
*Example: Students are encouraged to participate in discussions regarding various ways to solve number stories.*  
*Example: Students will continue to use center activities where they will need to focus on habits of how to work together.*

**Computer Science & Design Thinking:**

Computer networks can be used to connect individuals to other individuals, places, information, and ideas. The Internet enables individuals to connect with others worldwide.  
 8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.  
*Example: students choose an app on the chromebook to practice their math skills during math workshop with technology daily*

**Career Readiness, Life Literacies, and Key Skills:**

Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.  
 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive). *Example: When presented with a story problem, students will determine more than one solution using strategies such as: drawings, objects, expressions, or words.*

**UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS**

**Essential Questions**

| <p>*How can I use my fingers and/or a 10 frame to show different compositions and decompositions of 10?</p> <p>*How can I represent numbers being composed or decomposed using written expressions?</p> <p>*I can compose and decompose numbers within 10 and represent the compositions and decompositions.</p> <p>*The equal sign means that “both sides have the same value”.</p>   |   |
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| <b>STUDENT LEARNING OBJECTIVES</b>   |   |
| <b>Key Knowledge</b>   | <b>Process/Skills/Procedures/Application of Key Knowledge</b>   |
| <p><b>Students will know:</b></p> <p>*how to compose and decompose numbers up to 9 in more than 1 way.</p> <p>*how to write expressions to represent decompositions.</p> <p>*how to solve put together, total unknown, put together/take apart, both addends unknown, add to, result unknown, and take from, result unknown story problems.</p> <p>*how to for any number 1 to 9, find the number that makes 10 when added to the given number.</p> <p>.</p> | <p><b>Students will be able to:</b></p> <p>*Understand that numbers can be composed or decomposed in different ways.</p> <p>*Compose and decompose numbers in different ways.</p> <p>*Represent decompositions with a drawing.</p> <p>*Represent decompositions with an expression.</p> <p>*Accurately retell a story problem in their own words.</p> <p>*Use objects or drawings to represent a story problem.</p> <p>*Explain how objects or drawings represent a story problem.</p> <p>*Use labels, colors , numbers, or other methods to represent the two groups in a story problem.</p> <p>*Recognize that a full 10-frame contains 10 counters and that 2 hands have 10 fingers.</p> <p>*Relate equations to compositions and decompositions of 10.</p> <p>*Given a number, use the structure of 10-frames or fingers to determine how many more are needed to make 10.</p> <p>*Given a number, use connecting cubes to determine how many more are needed to make 10.</p> <p>*Given a number, know how many more are needed to make 10.</p> |
| <b>ASSESSMENT OF LEARNING</b>  |   |
| <b>Summative Assessment</b><br>(Assessment at the end of the learning period)  | <p><b>Unit 5 Assessment</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Unit 5- Composing and Decomposing Numbers 1-10</a></li> </ul>  |
| <b>Formative Assessments</b><br>(Ongoing assessments during the learning period to inform instruction)   | <p>-slate routines</p> <p>-small-group notes</p> <p>-Illustrative section checkpoints</p> <ul style="list-style-type: none"> <li>• <a href="#">Unit 5 Section A Checkpoint</a></li> <li>• <a href="#">Unit 5 Section B Checkpoint</a></li> <li>• <a href="#">Unit 5 Section C Checkpoint</a></li> </ul>   |
| <b>Alternative Assessments</b> (Any learning activity or assessment)   | <p>*Notice and Wonder Activity: students notice and wonder about an image that elicits mathematical discussion.</p> <p>*Which One Doesn't Belong Activity: students compare different images and analyze the characteristics or attributes</p>  |

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| <p>that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>  | <p>of the images.<br/>           *Choral Count Activity: students practice the verbal count sequence to 70/to count on from a given number<br/>           *Act It Out Activity: students connect language to mathematical representation<br/>           *Number Talk Activity: students have discussions about strategies and understandings while developing fluency with the counting sequence and adding/subtracting within 5.<br/>           *How Many Do You See Activity: students subitize or use grouping strategies to describe the images they see.<br/>           *What Do You Know About ____? Activity: students share what they know about a given mathematical idea/concept.<br/>           *Center Recording Sheets<br/>           *Illustrative Student Workbook Unit 5</p> |
| <p><b>Benchmark Assessments</b><br/>           (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>   | <p><a href="#">Benchmark Assessment</a> Half given Beginning of year and full Given Mid Year and End Of Year</p>   |
| <b>RESOURCES</b>  |  |
| <p><b>Core instructional materials:</b></p> <p>Illustrative Teacher Unit Guide - Grade K Unit 5</p>   |  |
| <p><b>Supplemental materials:</b><br/> <a href="#">Additional Resources On Drive</a><br/> <a href="#">Counting Collection 1 Resource</a><br/> <a href="#">Counting Collection 2 Resource</a><br/>           Guided Math Raegan Tunstall<br/>           Developing Number Concepts</p> |  |
| <b>Modifications for Learners</b>   |  |
| <p>See <a href="#">appendix</a></p>   |  |

| Unit 6 Title   | Numbers 0-20 | Approximate Pacing | March |
|--|--------------|--------------------|-------|
| <b>STANDARDS</b>   |              |                    |       |
| <b>NJSLS Math</b>  |              |                    |       |
| <p>K.CC.A.1. Count to 100 by ones and by tens.</p> <p>K.CC.A.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).</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. Count to tell the number of 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 in which they were counted.</p> <p>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.</p> <p>K.OA.A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.</p> <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.</p> <p>K.OA.A.2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.</p> <p>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.</p> <p>K.OA.A.5. Demonstrate fluency for addition and subtraction within 5.</p> <p>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</p> |              |                    |       |

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, six, seven, eight, or nine ones.

Standards for Mathematical Practice

- 1 Make sense of problems and persevere in solving them.
- 2 Reason abstractly and quantitatively.
- 3 Construct viable arguments and critique the reasoning of others.
- 4 Model with mathematics.
- 5 Use appropriate tools strategically.
- 6 Attend to precision.
- 7 Look for and make use of structure.
- 8 Look for and express regularity in repeated reasoning.

| Interdisciplinary Connections: | Computer Science & Design Thinking: |
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NJSLSA.ELA.Literacy.SL.K  
 SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.  
 SL.K.1.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).  
 SL.K.1.B Continue a conversation through multiple exchanges.  
 SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.  
 SL.K.5 Add drawings or other visual displays to descriptions as desired to provide additional detail. *Example: Students will draw representations for two given numbers and determine which group is larger/smaller.*  
 SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.  
*Example: Students will participate in the "What is Missing" instructional routine. They will collaborate through turning and talking with their math partner to describe their thinking and reasoning, then share their thinking with the class. Ex: "\_\_\_ + 6 = 16. What is missing, how do you know?"*  
*Example: Students will continue to work in center activities where they will need to focus on habits of how to work together.*

Computer networks can be used to connect individuals to other individuals, places, information, and ideas. The Internet enables individuals to connect with others worldwide.  
 8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.  
*Example: students choose an app on the iPad to practice their math skills during math workshop with technology daily*

| Career Readiness, Life Literacies, and Key Skills: |
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Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

*Example: Students will work together in Centers. They will need to problem-solve with partners and groups to solve problems that might arise during group/partner activities and games. (Deciding who goes first, deciding roles, determining who to work with, solving problems that arise while working, etc.)*

### UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS

#### Essential Questions

- \*How do we write numbers ?
  - \*How can we break numbers apart into groups of tens and ones?
  - \*How can we represent numbers in many different ways?
  - \*How can we add groups of ten and ones together to make a teen number?
- \*A teen number (11-19) is represented by a complete group of ten and more ones.  
 \*Teen numbers (11-19) can be represented by equations. (Ex:  $10 + 3 = 13$ )

### STUDENT LEARNING OBJECTIVES

| Key Knowledge  | Process/Skills/Procedures/Application of Key Knowledge   |
|--|--|
| <p><b>Students will know:</b></p> <ul style="list-style-type: none"> <li>*how to count groups of up to 20.</li> <li>*how to understand numbers 11-19 as 10 ones and some more ones.</li> <li>*how to represent quantities up to 20 with a written number.</li> </ul> | <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>*Say the count sequence to 20.</li> <li>*Answer how many without counting again.</li> <li>*Keep track of objects/images that have been counted.</li> <li>*After a group of objects that have been counted is rearranged, know that the total number of objects remains the same without recounting.</li> <li>*Count all to find the total.</li> <li>*Know that a full 10 - frame or all the fingers on two hands represents 10 without counting.</li> <li>*Count or recognize the ones outside of the 10 ones and use a <math>10 + \square</math> fact to find the total.</li> <li>*Write numbers 11 – 20.</li> <li>*Identify a group of 10 images in a group of 11 – 19 images.</li> <li>*Count on from 10 to find the total.</li> </ul> |

### ASSESSMENT OF LEARNING

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| <p><b>Summative Assessment</b><br/>(Assessment at the end of the learning period)</p>                          | <p><a href="#">Unit 6 Assessment</a></p>  |
| <p><b>Formative Assessments</b><br/>(Ongoing assessments during the learning period to inform instruction)</p> | <ul style="list-style-type: none"> <li>-slate routines</li> <li>-small-group notes</li> <li>-Illustrative Section Checkpoints                             <ul style="list-style-type: none"> <li>● <a href="#">Unit 6 Section A Checkpoint</a></li> </ul> </li> </ul> |

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|  | <ul style="list-style-type: none"> <li>• <a href="#">Unit 6 Section B Checkpoint</a></li> <li>• <a href="#">Unit 6 Section C Checkpoint</a></li> </ul>  |
| <p><b>Alternative Assessments</b> (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p> | <p>*Choral Count Activity: students practice the verbal count sequence to 90/to count on from a given number</p> <p>*Number Talk Activity: students have discussions about strategies and understandings while developing fluency with the counting sequence and adding/subtracting within 5.</p> <p>*Notice and Wonder Activity: students notice and wonder about an image that elicits mathematical discussion.</p> <p>*Estimation Exploration Activity: students practice the skill of estimating a reasonable number based on experience and known information</p> <p>*How Many Do You See Activity: students subitize or use grouping strategies to describe the images they see.</p> <p>*What Do You Know About ____? Activity: students share what they know about a given mathematical idea/concept.</p> <p>*Which One Doesn't Belong Activity: students compare different images and analyze the characteristics or attributes of the images.</p> <p>*Center Recording Sheets</p> <p>*Illustrative Student Workbook Unit 6</p> |
| <p><b>Benchmark Assessments</b> (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>                     | <p><a href="#">Benchmark Assessment</a> Half given Beginning of year and full Given Mid Year and End Of Year</p>  |
| <b>RESOURCES</b>   |   |
| <p><b>Core instructional materials:</b><br/> <b>Illustrative Teacher Unit Guide - Grade K Unit 6</b></p>   |   |
| <p><b>Supplemental materials:</b></p> <p><a href="#">Additional Resources On Drive</a><br/> Guided Math Raegan Tunstall<br/> Developing Number Concepts</p>                    |   |
| <b>Modifications for Learners</b>  |   |
| <p>See <a href="#">appendix</a></p>  |   |



| Unit 7 Title   | Solid Shapes All Around Us | Approximate Pacing | April |
|--|----------------------------|--------------------|-------|
| <b>STANDARDS</b>   |                            |                    |       |
| <b>NJSLS Math</b>  |                            |                    |       |
| <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.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.</p> <p>K.CC.C Compare numbers.</p> <p>K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.</p> <p>K.CC.C.7 Compare two numbers between 1 and 10 presented as written numerals.</p> <p>K.G.A.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.</p> <p>K.G.A.2 Correctly name shapes regardless of their orientations or overall size.</p> <p>K.G.A.3 Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).</p> <p>K.G.B.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).</p> <p>K.G.B.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes</p> <p>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?”</p> <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.</p> <p>K.OA.A.2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.</p> <p>K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., <math>5 = 2 + 3</math> and <math>5 = 4 + 1</math>).</p> <p>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.</p> <p>K.OA.A.5. Demonstrate fluency for addition and subtraction within 5.</p> |                            |                    |       |

K.MD.A Describe and compare measurable attributes.  
 K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.  
 K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.  
 K.MD.B.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Standards for Mathematical Practice  
 1 Make sense of problems and persevere in solving them.  
 2 Reason abstractly and quantitatively.  
 3 Construct viable arguments and critique the reasoning of others.  
 4 Model with mathematics.  
 5 Use appropriate tools strategically.  
 6 Attend to precision.  
 7 Look for and make use of structure.  
 8 Look for and express regularity in repeated reasoning.

| <b>Interdisciplinary Connections:</b>  | <b>Computer Science &amp; Design Thinking:</b>   |
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| <p>NJSLSA.ELA.Literacy.SL.K<br/>           SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.<br/>           SL.K.1.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).<br/>           SL.K.1.B Continue a conversation through multiple exchanges.<br/>           SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.<br/>           SL.K.5 Add drawings or other visual displays to descriptions as desired to provide additional detail. <i>Example: Students will draw representations for two given numbers and determine which group is larger/smaller.</i><br/>           SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.<br/> <i>Example: Students will use language to describe the attributes of shapes with the class/partner. Students will make arguments for how to sort/group shapes into similar categories.</i><br/> <i>Example: Students will continue to work in center activities where they will need to focus on habits of how to work together.</i></p> | <p>Computer networks can be used to connect individuals to other individuals, places, information, and ideas. The Internet enables individuals to connect with others worldwide.<br/>           8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.<br/> <i>Example: students choose an app on the iPad to practice their math skills during math workshop with technology daily</i></p> |

**Career Readiness, Life Literacies, and Key Skills:**

Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

*Example: Students will work together in Centers. They will need to problem-solve with partners and groups to solve problems that might arise during group/partner activities and games. (Deciding who goes first, deciding roles, determining who to work with)*

**UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS**

- \*How can I solve story problems using shapes?
- \*What is the difference between a solid shape and a flat shape?
- \*What are the names and attributes of solid shapes?
- \*How are solid shapes the same? How are they different?
- \*How can I describe the weight of a solid shape?

**STUDENT LEARNING OBJECTIVES**

**Key Knowledge**

**Process/Skills/Procedures/Application of Key Knowledge**

**Students will know:**

- \*how to compose shapes from smaller shapes.
- \*how to count and compare numbers and solve story problems involving shapes.
- \*how to describe and compare three dimensional shapes.
- \*how to compare the weight and capacity of objects.
- \*how to compose shapes from smaller shapes.

**Students will be able to:**

- \*Count all to determine the total.
- \*Write a number to represent a quantity up to 20.
- \*Accurately retell a story problem in their own words.
- \*Use objects, drawings, or equations to represent a story problem.
- \*Explain connections between objects, drawings, story problems, and equations.
- \*Distinguish between flat and solid shapes.
- \*Use their own language to describe and compare attributes of solid shapes.
- \*Use comparison language to describe the weight or capacity of objects.
- \*Build solid shapes from components.
- \*Put solid shapes together to compose new shapes.
- \*Use positional words to describe the locations of solid shapes.

**ASSESSMENT OF LEARNING**

**Summative Assessment**

(Assessment at the end of the learning period)

**Unit 7 Assessment**

- [Unit 7 -Solid Shapes All Around Us](#)

**Formative Assessments**

(Ongoing assessments during the learning period to inform instruction)

- slate routines
- small-group notes
- Illustrative Section Checkpoints
  - [Unit 7 Section A Checkpoint](#)

**Alternative Assessments (Any learning activity or assessment)**

- \*Choral Count Activity: students practice the verbal count sequence by 10s/to count on from a given number
- \*Number Talk Activity: students have discussions about strategies and understandings while developing fluency with

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| <p>that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>  | <p>the counting sequence and adding/subtracting within 5.<br/>         *Notice and Wonder Activity: students notice and wonder about an image that elicits mathematical discussion.<br/>         *Estimation Exploration Activity: students practice the skill of estimating a reasonable number based on experience and known information<br/>         *What Do You Know About ____? Activity: students share what they know about a given mathematical idea/concept.<br/>         *Which One Doesn't Belong Activity: students compare different images and analyze the characteristics or attributes of the images.<br/>         *Center Recording Sheets<br/>         *Illustrative Student Workbook Unit 7</p> |
| <p><b>Benchmark Assessments</b><br/>         (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>   | <p><a href="#">Benchmark Assessment</a> Half given Beginning of year and full Given Mid Year and End Of Year</p>  |
| <p><b>RESOURCES</b></p>   |   |
| <p><b>Core instructional materials:</b></p> <p>Illustrative Teacher Guide - Grade K Unit 7</p>  |   |
| <p><b>Supplemental materials:</b><br/> <a href="#">Additional Resources On Drive</a><br/>         Guided Math Raegan Tunstall<br/>         Developing Number Concepts</p> |   |
| <p><b>Modifications for Learners</b></p>  |   |
| <p>See <a href="#">appendix</a></p>   |   |

| Unit 8 Title  | Putting it All Together | Approximate Pacing | April - May |
|---|-------------------------|--------------------|-------------|
| <b>STANDARDS</b>  |                         |                    |             |
| <b>NJSLS Math</b>   |                         |                    |             |
| <p>K.CC.A.1. Count to 100 by ones and by tens.</p> <p>K.CC.A.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).</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. Count to tell the number of objects.</p> <p>K.CC.B.4. Understand the relationship between numbers and quantities; connect counting to cardinality.</p> <p>K.CC.B.4.c Understand that each successive number name refers to a quantity that is one larger.</p> <p>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.</p> <p>K.CC.C6. 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</p> <p>K.MD.B.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.</p> <p>K.NBT.A1. 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., <math>18 = 10 + 8</math>); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.</p> <p>K.OA.A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.</p> <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.</p> <p>K.OA.A.2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.</p> <p>K.OA.A.3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., <math>5 = 2 + 3</math> and <math>5 = 4 + 1</math>).</p> <p>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.</p> <p>K.OA.A.5. Demonstrate fluency for addition and subtraction within 5.</p> <p>Standards for Mathematical Practice</p> <p>1 Make sense of problems and persevere in solving them.</p> <p>2 Reason abstractly and quantitatively.</p> <p>3 Construct viable arguments and critique the reasoning of others.</p> |                         |                    |             |

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| <p>4 Model with mathematics.<br/> 5 Use appropriate tools strategically.<br/> 6 Attend to precision.<br/> 7 Look for and make use of structure.<br/> 8 Look for and express regularity in repeated reasoning.</p>  |  |
| <b>Interdisciplinary Connections:</b>  | <b>Computer Science &amp; Design Thinking:</b>   |
| <p>NJSLSA.ELA.Literacy.SL.K<br/> SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.<br/> SL.K.1.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).<br/> SL.K.1.B Continue a conversation through multiple exchanges.<br/> SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.<br/> SL.K.5 Add drawings or other visual displays to descriptions as desired to provide additional detail. <i>Example: Students will draw representations for two given numbers and determine which group is larger/smaller.</i><br/> SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.<br/> <i>Example: Students will create "Number Books" in this unit. When the Number Books are complete, students will speak to compare and contrast the Number Books made by different students.</i><br/> <i>Example: Students will continue to work in center activities where they will need to focus on habits of how to work together.</i></p> | <p>Computer networks can be used to connect individuals to other individuals, places, information, and ideas. The Internet enables individuals to connect with others worldwide.<br/> 8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.<br/> <i>Example: students choose an app on the iPad to practice their math skills during math workshop with technology daily</i></p> |
| <b>Career Readiness, Life Literacies, and Key Skills:</b>  |  |
| <p>Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.<br/> 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).<br/> <i>Example: Students will work together in Centers. They will need to problem-solve with partners and groups to solve problems that might arise during group/partner activities and games. (Deciding who goes first, deciding roles, determining who to work with, solving problems that arise while working, etc.)</i></p>  |  |
| <b>UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS</b>   |  |
| <p><b>Essential Questions</b><br/> *How do we represent and write numbers up to 20?<br/> *How do we count and compare groups of objects and images?</p>  |  |

- \*Fluently add and subtract within 5
- \*Use an understanding of 10 to work with numbers to 20

### STUDENT LEARNING OBJECTIVES

| Key Knowledge  | Process/Skills/Procedures/Application of Key Knowledge   |
|--|--|
| <p><b>Students will know:</b></p> <ul style="list-style-type: none"> <li>*how to count and compare groups of objects and images.</li> <li>*how to represent and write quantities and numbers up to 20.*Knowledge of the count sequence to add and subtract 1 from a given number.</li> <li>*how to fluently add and subtract within 5.</li> <li>*how to use understanding of 10 to work with numbers to 20.</li> </ul> | <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>*Count, read, and write numbers up to 20. *Use numbers and knowledge of the count sequence to compare groups of objects.</li> <li>*Use knowledge of the count sequence to find how many after one is added or taken away from a given number.</li> <li>*Use objects, drawings, numbers, words, and expressions or equations to represent quantities up to 20.</li> <li>*Count all to find the sum.</li> <li>*Use their knowledge of the count sequence to find certain sums.</li> <li>*Know certain sums.</li> <li>*Represent all, then cross off or remove to find the difference.</li> <li>*Use their knowledge of the count sequence to find certain differences.</li> <li>*Know certain differences.</li> <li>*find how many more are needed to make 10 given a number 1-9.</li> <li>*Use 10 as a benchmark to estimate and count.</li> <li>*Use 10 as a benchmark to compose and decompose numbers in different ways.</li> <li>*Relate equations to compositions and decompositions of numbers.</li> </ul> |

### ASSESSMENT OF LEARNING

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| <p><b>Summative Assessment</b><br/>(Assessment at the end of the learning period)</p>   | <p><b>Unit 8 Assessment</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Putting It All Together</a></li> </ul>  |
| <p><b>Formative Assessments</b><br/>(Ongoing assessments during the learning period to inform instruction)</p>                                  | <ul style="list-style-type: none"> <li>-slate routines</li> <li>-small-group notes</li> <li>-Illustrative Section Checkpoints               <ul style="list-style-type: none"> <li>• <a href="#">Unit 8 Section A Checkpoint</a></li> <li>• <a href="#">Unit 8 Section B Checkpoint</a></li> <li>• <a href="#">Unit 8 Section C Checkpoint</a></li> <li>• <a href="#">Unit 8 Section D Checkpoint</a></li> </ul> </li> </ul> |
| <p><b>Alternative Assessments</b> (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge,</p> | <ul style="list-style-type: none"> <li>*Choral Count Activity: students practice the verbal count sequence forward and backward to 100/to count on from a given number</li> <li>*Number Talk Activity: students have discussions about strategies and understandings while developing fluency with the counting sequence and adding/subtracting.</li> </ul>  |

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| understanding and proficiency)   | <p>*Notice and Wonder Activity: students notice and wonder about an image that elicits mathematical discussion.</p> <p>*Estimation Exploration Activity: students practice the skill of estimating a reasonable number based on experience and known information</p> <p>*How Many Do You See Activity: students subitize or use grouping strategies to describe the images they see.</p> <p>*What Do You Know About ____? Activity: students share what they know about a given mathematical idea/concept.</p> <p>*Which One Doesn't Belong Activity: students compare different images and analyze the characteristics or attributes of the images.</p> <p>*Center Recording Sheets</p> <p>*Illustrative Student Workbook Unit 8</p> |
| <p><b>Benchmark Assessments</b><br/>(used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p> | <p><a href="#">Benchmark Assessment</a> Half given Beginning of year and full Given Mid Year and End Of Year</p>  |
| <b>RESOURCES</b>   |   |
| <p><b>Core instructional materials:</b></p> <p>Illustrative Teacher Unit Guide - Grade K Unit 8</p>  |   |
| <p><b>Supplemental materials:</b></p> <p><a href="#">Additional Resources On Drive</a><br/>Guided Math Raegan Tunstall<br/>Developing Number Concepts</p>      |   |
| <b>Modifications for Learners</b>  |   |
| <p>See <a href="#">appendix</a></p>  |   |