West Windsor-Plainsboro Regional School District
Kindergarten Mathematics

Updated August 2023

Math Equity Statement

ALL learners should have access to rigorous, high-level mathematical content in an environment where risk-taking, deep conceptual understanding, and growth mindset are the norm.

Catalyzing Change

Our District strategic goals lay the foundation for teaching and learning from a productive stance. *Catalyzing Change in Early Childhood and Elementary School Mathematics: Initiating Critical Conversations* pushes us to consider equitable mathematics practices and move from deficit to productive beliefs (NCTM, 2020). Our goal is to have each student see themselves as doers, knowers, and sense makers of mathematics. Leveraging *Catalyzing Change*, we have three focused areas to understand our work to help each and every student develop a positive math identity and have agency within their learning.

The three areas of focus in our math learning continue to be:

1. *Build a mathematics community* through routines & structures (experience wonder, joy, and beauty in mathematics, while building agency through making conjectures, justifying thinking, and building on one another's ideas)

2. *Deepen mathematical understanding* to develop confident and capable learners through grade level appropriate goals.

3. *Develop strong foundational skills* emphasizing reasoning and sense making to ensure the highest-quality mathematics education for each and every child.

Math Workshop

Math workshop is a model of instruction that allows all students to be engaged in mathematics learning, provide space for reflection, and for all students to realize their abilities as mathematicians. Math workshop model provides the structures for student choice, problem solving, targeted small group instruction, time throughout the year to practice the critical concepts of the grade level (Lempp, 2017).

For students, our classrooms need to be places where they are comfortable taking intellectual risks. In *From Reading to Math*, Sienna (2009) outlines four values to support students in taking risks and creating discourse. The values are:

- Value the thinking process as well as correct answers.
- Value problems for which more than one answer is possible.
- Value inquisitive responses.
- Value tolerance for mistakes. (Siena, 2009, p. 68).

Math workshop allows for these values to come through creating a supportive, collaborative learning environment for each and every student.

Number Sense Routines

We define a number sense routine as "an engaging, accessible, purposeful routine to begin your math class that promotes a community of positive mathematics and discussion" (Lempp, 2017, pg.146). It is usually done in the first 5-10 minutes of a math class. Number sense routines are the foundation of supporting social-emotional learning in mathematics. These routines invite all learners into the community while building positive math identity and sense making. It is where students begin to see themselves as doers, knowers, and sense-makers of mathematics.

Fluency

Fluency is the ability to apply procedures efficiently, flexibly, and accurately. Fluency is multifaceted and encompasses basic fact fluency, computational fluency and procedural fluency (Bay-Williams & SanGiovanni, 2021, p. 2). Bay-Williams and SanGiovanni (2021) define efficiency, flexibility, and accuracy as:

> *Efficiency:* Solving a procedure in a reasonable amount of time by selecting an appropriate strategy and readily implementing that strategy
> *Flexibility:* Knowing multiple procedures and applying or adapting strategies to solve procedural problems (Baroody & Dowker, 2003; Star, 2005 as cited by Bay-Williams & SanGiovanni, 2021, p.3).
> *Accuracy:* Correctly solving a procedure. (Bay-Williams & SanGiovanni, 2021, p. 3)

Additionally, Jennifer Bay-Williams and John SanGiovanni state, "Because effective instruction of (real) fluency values actions such as selecting, understanding, and evaluating strategies, as well as flexibility and reasonableness, students are able to develop strategic competence and adaptive reasoning. *These competencies positively shape their mathematics identity, while also nurturing their mathematical agency"* (NCTM, Figuring Out Fluency Presentation, New Orleans, 2022).

Kindergarten Big Ideas & Standards

In Kindergarten, instructional time should focus on two critical areas: (1) representing and comparing whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics (NJDOE, NJSL-M, 2016).

A complete copy of the 2016 New Jersey Student Learning Standards for Kindergarten Mathematics may be found on the [NJDOE's New Jersey Student Learning Standards for Mathematics webpage](.).

Unit 1: Numbers to Five and Ten

Content Area: Elementary Mathematics
Course & Grade Level: Mathematics, Kindergarten

Summary and Rationale
Unit 1 helps us establish our rich learning community so that students can see themselves as doers, knowers, and sense makers of math. We will establish this rich community through the study of the counting sequence to 20 and quantities to 10. Understanding where students are in their early numeracy skills is crucial, and time will be spent assessing these skills through different activities. Students will grapple with the question, "How many?" Five frames will help students look for and make use of structure.

Recommended Pacing
Approximately 20 days

New Jersey Student Learning Standards for Mathematics

Standard: K.CC.A Know number names and the count sequence.	
CPI #	**Cumulative Progress Indicator (CPI)**
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).

Standard: K.CC.B Count to tell number of objects.	
CPI #	**Cumulative Progress Indicator (CPI)**

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

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.

Standard: K.CC.C Compare numbers.	
CPI #	**Cumulative Progress Indicator (CPI)**
K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.[1] ([1]Include groups with up to ten objects.)

Standard: K.OA.A Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	
CPI #	**Cumulative Progress Indicator (CPI)**
K.OA.A.3	Decompose numbers less than or equal to 10 into pairs in more than one way.

Standard: Standards for Mathematical Practice	
CPI #	**Cumulative Progress Indicator (CPI)**
K.MP.3	Construct viable arguments and critique the reasoning of others.
K.MP.5	Use appropriate tools strategically.
K.MP.6	Attend to precision.
K.MP.7	Look for and make use of structure.

New Jersey Student Learning Standards for Career Readiness, Life Literacies and Key Skills	
Standard: 9.4 Life Literacies and Key Skills: Critical Thinking & Problem Solving: Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.	
CPI #	**Cumulative Progress Indicator (CPI)**
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).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
Standard: 9.4 Life Literacies and Key Skills: Technology Literacy: Digital tools have a purpose.	
CPI #	**Cumulative Progress Indicator (CPI)**
9.4.2.TL.6	Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).
New Jersey Student Learning Standards for Computer Science and Design Thinking	
Standard: 8.1 Computer Science: Data & Analysis: Data can be used to make predictions about the world.	
CPI #	**Cumulative Progress Indicator (CPI)**
8.1.2.DA.3	Identify and describe patterns in data visualizations.
8.1.2.DA.4	Make predictions based on data using charts or graphs.
Standard: 8.2 Design Thinking: Engineering Design Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.	
CPI #	**Cumulative Progress Indicator (CPI)**
8.2.2.ED.2	Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
Interdisciplinary Standards	
English Language Arts	
CPI #	**Cumulative Progress Indicator (CPI)**
W.2.8	Recall information from experiences or gather information from provided sources to answer a question.
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.
Social Studies	
Standard: 6.1 U.S. History: America in the World: Civics, Government, and Human Rights: Participation and Deliberation When all members of the group are given the opportunity to participate in the decision making process, everyone's voice is heard.	
CPI #	**Cumulative Progress Indicator (CPI)**
6.1.2.Civics PD.1	Engage in discussions effectively by asking questions, considering facts, listening to the ideas of others, and sharing opinions.
6.1.2.Civics PD.2	Establish a process for how individuals can effectively work together to make decisions.
Standard: 6.1 U.S. History: America in the World: Civics, Government, and Human Rights: Processes and Rules Rules and people who have authority are necessary to keep everyone safe, resolve conflicts, and treat people fairly.	
CPI #	**Cumulative Progress Indicator (CPI)**
6.1.2.Civics PR.3	Analyze classroom rules and routines and describe how they are designed to benefit the common good.
Instructional Focus	
Unit Enduring Understandings	

Unit Enduring Understandings
- Mathematicians use numbers to make sense of the world.
- Patterns are repeating arrangements.

- Patterns can be identified and extended.
- Mathematicians use math tools.

Unit Essential Questions

- Why do we use numbers?
- How can we use math tools to help with counting?
- What is a pattern?
- How do you know what comes next in a pattern?

Objectives

We are learning to/that:

- Count to 5 and 10 by 1s.
- Write numbers from 0 to 10.
- Use one-to-one correspondence.
- Identify the number of objects as the last number said when counting a group of objects.
- Count up to 10 objects arranged in a line, rectangular array, or circle to answer "how many?" questions.
- Count up to 5 objects in a scattered configuration to answer "how many?" questions.
- Identify whether the number of objects in one group is greater than, less than, or equal to the number objects in another group for groups of up to 10 objects.

Evidence of Learning

Assessment

The assessment plan may include teacher-designed formative and summative assessments, district common assessments, self-assessments, and analysis of standardized benchmark and interim assessment data. During each common, formative, and summative assessment, teachers will provide accommodations and alternative assessment opportunities that adhere to 504 and IEP requirements. Alternative assessments are individualized for the needs of all students. Throughout the unit, students will be engaged in activities that involve finding patterns, making generalizations, drawing conclusions, and communicating their ideas with others. Teachers will have many opportunities to observe students' growth in these areas, as well as with specific math skills and concepts throughout this unit.

- ☑ Formative Assessment
- ☑ Summative Assessment
- ☑ Alternative Assessment
- ☑ Benchmark Assessment

Resources

Foundational Text:
Bridges in Mathematics Kindergarten by The Math Learning Center
Instructional & Professional Resources:

- Exemplars*, Problem Solving for the 21st Century*
- K-5 Math Teaching Resources
- *Math in Practice: Teaching Kindergarten Math* by Marcy Myers, Susan O'Connell, & John SanGiovanni
- DreamBox Learning (Digital Tool)

Additional Supports

WW-P Accommodations and Assessment (Reference Tool and Glossary)

Unit 2: Numbers to Ten

Content Area: Elementary Mathematics

Course & Grade Level: Mathematics, Kindergarten

Summary and Rationale

Unit 2 continues to develop students' early numeracy skills of counting and recognizing quantities. Time is spent on subitizing, number sequence, 1 to 1 correspondence, and cardinality, as explored in unit 1. In unit 2, students will also compare numbers and quantities. Students will answer the questions, "Which is more?" and "Which is less?" Students will begin early addition with a story on combinations of five. Shapes and patterns will also be introduced.

Recommended Pacing

Approximately 20 days

New Jersey Student Learning Standards for Mathematics

Standard: K.CC.A Know number names and the count sequence.

CPI #	Cumulative Progress Indicator (CPI)
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).

Standard: K.CC.B Count to tell the number of objects.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality. a. 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. b. 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.
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.

Standard: K.CC.C Compare numbers.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.[1] ([1]Include groups with up to ten objects.)

Standard: K.OA.A Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

CPI #	Cumulative Progress Indicator (CPI)
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).

Standard: Standards for Mathematical Practice

CPI #	Cumulative Progress Indicator (CPI)
K.MP.1	Make sense of problems and persevere in solving them.
K.MP.2	Reason abstractly and quantitatively.
K.MP.3	Construct viable arguments and critique the reasoning of others.
K.MP.4	Model with mathematics.
K.MP.5	Uses appropriate tools strategically.

K.MP.6	Attend to precision.
K.MP.7	Look for and make use of structure.
K.MP.8	Look for and express regularity in repeated reasoning.

New Jersey Student Learning Standards for Career Readiness, Life Literacies and Key Skills
Standard: 9.4 Life Literacies and Key Skills: Critical Thinking and Problem-solving: Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.

CPI #	Cumulative Progress Indicator (CPI)
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).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

Standard: 9.4 Life Literacies and Key Skills: Technology Literacy: Digital tools have a purpose.

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9.4.2.TL.6	Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).

New Jersey Student Learning Standards for Computer Science and Design Thinking
Standard: 8.1 Computer Science: Data & Analysis: Data can be used to make predictions about the world.

CPI #	Cumulative Progress Indicator (CPI)
8.1.2.DA.3	Identify and describe patterns in data visualizations.
8.1.2.DA.4	Make predictions based on data using charts or graphs.

Standard: 8.2 Design Thinking: Engineering Design Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.

CPI #	Cumulative Progress Indicator (CPI)
8.2.2.ED.2	Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Interdisciplinary Standards
English Language Arts

CPI #	Cumulative Progress Indicator (CPI)
W.2.8	Recall information from experiences or gather information from provided sources to answer a question.
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.

Social Studies
Standard: 6.1 U.S. History: America in the World: Civics, Government, and Human Rights: Participation and Deliberation When all members of the group are given the opportunity to participate in the decision making process, everyone's voice is heard.

CPI#	Cumulative Progress Indicator (CPI)
6.1.2.CivicsPD.1	Engage in discussions effectively by asking questions, considering facts, listening to the ideas of others, and sharing opinions.

Instructional Focus

Unit Enduring Understandings
- Mathematicians think critically about numbers and patterns to make sense of their world.
- Mathematicians are flexible in their thinking about numbers.

Unit Essential Questions
- How can numbers be represented?
- How and why do we count?

Objectives

We are learning to/that:
- Count to 30 by 1s.
- Count collections of objects in different ways.
- Model counting using visual models and manipulatives.
- Identify combinations of 5.
- Identify combinations of 10.
- Determine whether the number of objects in one group is greater than, less than, or equal to the number in a different group.

Evidence of Learning

Assessment

The assessment plan may include teacher-designed formative and summative assessments, district common assessments, self-assessments, and analysis of standardized benchmark and interim assessment data. During each common, formative, and summative assessment, teachers will provide accommodations and alternative assessment opportunities that adhere to 504 and IEP requirements. Alternative assessments are individualized for the needs of all students. Throughout the unit, students will be engaged in activities that involve finding patterns, making generalizations, drawing conclusions, and communicating their ideas with others. Teachers will have many opportunities to observe students' growth in these areas, as well as with specific math skills and concepts throughout this unit.

- ☑ Formative Assessment
- ☑ Summative Assessment
- ☑ Alternative Assessment
- ☑ Benchmark Assessment

Resources

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Additional Supports

WW-P Accommodations and Assessment (Reference Tool and Glossary)

Unit 3: Doubles, Add, and Subtract

Content Area: Elementary Mathematics

Course & Grade Level: Mathematics, Kindergarten

<table>
<tr><td colspan="2" align="center">Summary and Rationale</td></tr>
<tr><td colspan="2">Unit 3 continues to provide opportunities for students to explore counting and cardinality and comparing sets. Students learn to count by 2s, which leads to exploring doubling and even numbers. Five and ten frames help students springboard into writing equations and understanding that an equation indicates equality between two quantities. The story is the structure of numbers rather than fluency at this point.</td></tr>
<tr><td colspan="2" align="center">Recommended Pacing</td></tr>
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<tr><td>CPI #</td><td>Cumulative Progress Indicator (CPI)</td></tr>
<tr><td>K.CC.A.2</td><td>Count forward beginning from a given number within the known sequence (instead of having to begin at 1).</td></tr>
<tr><td>K.CC.A.3</td><td>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).</td></tr>
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<tr><td>CPI #</td><td>Cumulative Progress Indicator (CPI)</td></tr>
<tr><td>K.CC.B.4.b</td><td>Understand the relationship between numbers and quantities; connect counting to cardinality.
    b. 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.</td></tr>
<tr><td>K.CC.B.5</td><td>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.</td></tr>
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Standard: 9.4 Life Literacies and Key Skills: Critical Thinking and Problem-solving: Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.	
CPI #	Cumulative Progress Indicator (CPI)
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).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

New Jersey Student Learning Standards for Computer Science and Design Thinking	
Standard: 8.1 Computer Science: Data & Analysis: Data can be used to make predictions about the world.	
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CPI #	Cumulative Progress Indicator (CPI)
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Interdisciplinary Standards	
English Language Arts	
CPI #	Cumulative Progress Indicator (CPI)
W.2.8	Recall information from experiences or gather information from provided sources to answer a question.
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.
Social Studies	
Standard: 6.1 U.S. History: America in the World: Civics, Government, and Human Rights: Participation and Deliberation When all members of the group are given the opportunity to participate in the decision making process, everyone's voice is heard.	
CPI#	Cumulative Progress Indicator (CPI)
6.1.2.Civics PD.1	Engage in discussions effectively by asking questions, considering facts, listening to the ideas of others, and sharing opinions.

Instructional Focus	

Unit Enduring Understandings
- Mathematicians recognize patterns in numbers.
- Mathematicians understand how numbers are structured.

Unit Essential Questions
- Why do we look for patterns in numbers?
- How and why do we count?
- How can numbers be represented?

Objectives

We are learning to/that:
- Write numerals from 0 to 10 to represent a number or group.
- Display one-to-one correspondence when counting.
- Count collections up to 20 objects in different ways.
- Determine whether the number of objects in one group is greater than, less than, or equal to the number in a different group.
- Represent addition with objects, fingers, verbal explanations, drawings, expressions, or equations.
- Represent subtraction with objects, fingers, verbal explanations, drawings,expressions, or equations.

- Decompose numbers ten or less into pairs in a variety of ways.

Evidence of Learning

Assessment

The assessment plan may include teacher-designed formative and summative assessments, district common assessments, self-assessments, and analysis of standardized benchmark and interim assessment data. During each common, formative, and summative assessment, teachers will provide accommodations and alternative assessment opportunities that adhere to 504 and IEP requirements. Alternative assessments are individualized for the needs of all students. Throughout the unit, students will be engaged in activities that involve finding patterns, making generalizations, drawing conclusions, and communicating their ideas with others. Teachers will have many opportunities to observe students' growth in these areas, as well as with specific math skills and concepts throughout this unit.

☑ Formative Assessment

☑ Summative Assessment

☑ Alternative Assessment

☑ Benchmark Assessment

Resources

Foundational Text:

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Instructional & Professional Resources:

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- K-5 Math Teaching Resources
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Additional Supports

WW-P Accommodations and Assessment (Reference Tool and Glossary)

Unit 4: Paths to Adding, Subtracting, and Measuring
Content Area: Elementary Mathematics
Course & Grade Level: Mathematics, Kindergarten

Summary and Rationale
Students spent a lot of time discrete counting in the first three units. Unit 4 explores interval counting through the number line (a great tool in kindergarten and beyond) and length measurement. Students will also continue to practice counting forward and backward. We will continue to explore equality through measuring length and work with money, specifically pennies and nickels.

Recommended Pacing
Approximately 20 days

New Jersey Student Learning Standards for Mathematics

Standard: K.CC.A Know number names and the count sequence.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.A.1	Count to 100 by ones and by tens.
K.CC.A.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
K.CC.A.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20.

Standard: K.CC.B Count to tell the number of objects.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
	a. 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.
	b. 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.
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.

Standard: K.CC.C Compare numbers.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.[1] ([1]Include groups with up to ten objects.)
K.CC.C.7	Compare two numbers between 1 and 10 presented as written numerals.

Standard: K.OA.A Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

CPI #	Cumulative Progress Indicator (CPI)
K.OA.A.1	Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings[2], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ([2]Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)
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.5	Demonstrate fluency for addition and subtraction within 5.

Standard: K.MD.A Describe and compare measurable attributes.

CPI #	Cumulative Progress Indicator (CPI)
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.*

Standard: K.MD.B Classify objects and count the number of objects in each category.

CPI #	Cumulative Progress Indicator (CPI)
K.MD.B.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Standard: Standards for Mathematical Practice

CPI #	Cumulative Progress Indicator (CPI)
K.MP.1	Make sense of problems and persevere in solving them.
K.MP.2	Reason abstractly and quantitatively.
K.MP.6	Attend to precision.
K.MP.7	Look for and make use of structure.
K.MP.8	Look for and express regularity in repeated reasoning.

New Jersey Student Learning Standards for Career Readiness, Life Literacies and Key Skills

Standard: 9.4 Life Literacies and Key Skills: Critical Thinking and Problem-solving: Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.

CPI #	Cumulative Progress Indicator (CPI)
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).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

New Jersey Student Learning Standards for Computer Science and Design Thinking

Standard: 8.1 Computer Science: Data & Analysis: Data can be used to make predictions about the world.

CPI #	Cumulative Progress Indicator (CPI)
8.1.2.DA.3	Identify and describe patterns in data visualizations.
8.1.2.DA.4	Make predictions based on data using charts or graphs.

Standard: 8.2 Design Thinking: Engineering Design Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.

CPI #	Cumulative Progress Indicator (CPI)
8.2.2.ED.2	Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Interdisciplinary Standards

English Language Arts

CPI #	Cumulative Progress Indicator (CPI)
W.2.8	Recall information from experiences or gather information from provided sources to answer a question.
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.

Social Studies

Standard: 6.1 U.S. History: America in the World: Civics, Government, and Human Rights: Participation and Deliberation When all members of the group are given the opportunity to participate in the decision making process, everyone's voice is heard.

CPI#	Cumulative Progress Indicator (CPI)
6.1.2.Civics PD.1	Engage in discussions effectively by asking questions, considering facts, listening to the ideas of others, and sharing opinions.

Instructional Focus

Unit Enduring Understandings

- Mathematical problems can be solved in more than one way.
- Quantities can be taken apart and put together.

Unit Essential Questions

- How can a mathematical problem be solved?
- How can quantities be taken apart and put together?

Objectives

We are learning to/that:

- Count to 50 by 1s.
- Count backward from a given number, rather than starting at 1.
- Identify the number of objects as the last number said when counting a group of objects.
- Represent addition with objects, fingers, verbal explanations, drawings or equations.
- Represent subtraction with objects, fingers, verbal explanations, drawings or equations.
- Adds with sums to 10.
- Fluently adds with sums to 5.
- Classify objects into categories.
- To consider the relationships between numbers and quantities.
- Make comparisons about which are greater and which are less.

Evidence of Learning

Assessment

The assessment plan may include teacher-designed formative and summative assessments, district common assessments, self-assessments, and analysis of standardized benchmark and interim assessment data. During each common, formative, and summative assessment, teachers will provide accommodations and alternative assessment opportunities that adhere to 504 and IEP requirements. Alternative assessments are individualized for the needs of all students. Throughout the unit, students will be engaged in activities that involve finding patterns, making generalizations, drawing conclusions, and communicating their ideas with others. Teachers will have many opportunities to observe students' growth in these areas, as well as with specific math skills and concepts throughout this unit.

- ☑ Formative Assessment
- ☑ Summative Assessment
- ☑ Alternative Assessment
- ☑ Benchmark

Resources

Foundational Text:
Bridges in Mathematics Kindergarten by The Math Learning Center
Instructional & Professional Resources:

- Exemplars*, Problem Solving for the 21st Century*
- K-5 Math Teaching Resources
- *Math in Practice: Teaching Kindergarten Math* by Marcy Myers, Susan O'Connell, & John SanGiovanni
- DreamBox Learning (Digital Tool)

Additional Supports

WW-P Accommodations and Assessment (Reference Tool and Glossary)

Unit 5: Two-Dimensional Geometry

Content Area: Elementary Mathematics
Course & Grade Level: Mathematics, Kindergarten

Summary and Rationale
Students are naturally intrigued by shapes and finding them in the world around them. Unit 5 formalizes language and students will begin to sort and classify shapes based on attributes. Students use this sorting to collect data that will serve as the beginnings for looking at inequalities between sets.

Recommended Pacing
Approximately 20 days

New Jersey Student Learning Standards for Mathematics

Standard: K.CC.C Compare numbers.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.[1] ([1]Include groups with up to ten objects.)

Standard: K.OA.A Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

CPI #	Cumulative Progress Indicator (CPI)
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).

Standard: K.MD.B Classify objects and count the number of objects in each category.

CPI #	Cumulative Progress Indicator (CPI)
K.MD.B.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.[3] ([3]Limit category counts to be less than or equal to 10.)

Standard: K.G.A Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

CPI #	Cumulative Progress Indicator (CPI)
K.G.A.1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.
K.G.A.2	Correctly name shapes regardless of their orientations or overall size.
K.G.A.3	Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

Standard: K.G.B Analyze, compare, create, and compose shapes.

CPI #	Cumulative Progress Indicator (CPI)
K.G.B.4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).
K.G.B.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
K.G.B.6	Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*

Standard: Standards for Mathematical Practice

CPI #	Cumulative Progress Indicator (CPI)
K.MP.1	Make sense of problems and persevere in solving them.

K.MP.2	Reason abstractly and quantitatively.
K.MP.3	Construct viable arguments and critique the reasoning of others.
K.MP.4	Model with mathematics.
K.MP.5	Uses appropriate tools strategically.
K.MP.6	Attend to precision.
K.MP.7	Look for and make use of structure.
K.MP.8	Look for and express regularity in repeated reasoning.

New Jersey Student Learning Standards for Career Readiness, Life Literacies and Key Skills	
Standard: 9.4 Life Literacies and Key Skills: Critical Thinking and Problem-solving: Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.	
CPI #	**Cumulative Progress Indicator (CPI)**
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).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

New Jersey Student Learning Standards for Computer Science and Design Thinking	
Standard: 8.1 Computer Science: Data & Analysis: Data can be used to make predictions about the world.	
CPI #	**Cumulative Progress Indicator (CPI)**
8.1.2.DA.3	Identify and describe patterns in data visualizations.
8.1.2.DA.4	Make predictions based on data using charts or graphs.
Standard: 8.2 Design Thinking: Engineering Design Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.	
CPI #	**Cumulative Progress Indicator (CPI)**
8.2.2.ED.2	Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Interdisciplinary Standards	
English Language Arts	
CPI #	**Cumulative Progress Indicator (CPI)**
W.2.8	Recall information from experiences or gather information from provided sources to answer a question.
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.
Social Studies	
Standard: 6.1 U.S. History: America in the World: Civics, Government, and Human Rights: Participation and Deliberation When all members of the group are given the opportunity to participate in the decision making process, everyone's voice is heard.	
CPI#	**Cumulative Progress Indicator (CPI)**
6.1.2.Civics PD.1	Engage in discussions effectively by asking questions, considering facts, listening to the ideas of others, and sharing opinions.

Instructional Focus	
Unit Enduring Understandings	

- Mathematicians think critically about numbers and patterns to make sense of their world.
- Shapes can be found in the world around us.
- Objects can be sorted.
- All objects have a shape with a specific name.

Unit Essential Questions

- How do we use shapes in the world around us?

- How can shapes be described?
- In what ways can objects be sorted?

Objectives

We are learning to/that:
- Classify objects into categories, count the number of objects in different categories.
- Sort, identify, compare, and describe two dimensional shapes.
- Compose simple shapes to form larger shapes.
- Sort, classify and describe objects by shape and size.
- Describe and identify objects in the environment using geometric shapes names.
- Create shapes using a variety of materials.
- Identify two and three dimensional objects.
- Identify shapes in typical and atypical orientations, varying sizes, and side lengths.
- Identify whether the number of objects in one group is greater than, less than, or equal to the number or objects in another group for groups of up to 10 objects.
- Decompose numbers less than or equal to 10 into pairs in more than one way.

Evidence of Learning

Assessment

The assessment plan may include teacher-designed formative and summative assessments, district common assessments, self-assessments, and analysis of standardized benchmark and interim assessment data. During each common, formative, and summative assessment, teachers will provide accommodations and alternative assessment opportunities that adhere to 504 and IEP requirements. Alternative assessments are individualized for the needs of all students. Throughout the unit, students will be engaged in activities that involve finding patterns, making generalizations, drawing conclusions, and communicating their ideas with others. Teachers will have many opportunities to observe students' growth in these areas, as well as with specific math skills and concepts throughout this unit.

- ☑ Formative Assessment
- ☑ Summative Assessment
- ☑ Alternative Assessment
- ☑ Benchmark Assessment

Resources

Foundational Text:
Bridges in Mathematics Kindergarten by The Math Learning Center
Instructional & Professional Resources:
- Exemplars*, Problem Solving for the 21st Century*
- K-5 Math Teaching Resources
- *Math in Practice: Teaching Kindergarten Math* by Marcy Myers, Susan O'Connell, & John SanGiovanni
- DreamBox Learning (Digital Tool)

Additional Supports

WW-P Accommodations and Assessment (Reference Tool and Glossary)

Unit 6: Three-Dimensional Shapes & Numbers Beyond Ten

Content Area: Elementary Mathematics

Course & Grade Level: Mathematics, Kindergarten

Summary and Rationale

In unit 6, students will continue to work on counting by 1s, focusing on one-to-one correspondence and cardinality. Mastery of forward and backward counting sequences, one-to-one correspondence, and cardinality help students determine sums and differences as they begin addition and subtraction tasks. Students' prior work with 2-D shapes now extends to 3-D shapes. Students are also introduced to the concept of ten and some more 1s. Students use visual models to count by 10 and show how teen numbers are built.

Recommended Pacing

20 days

New Jersey Student Learning Standards for Mathematics

Standard: K.CC.A Know number names and the count sequence.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.A.1	Count to 100 by ones and by tens.
K.CC.A.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
K.CC.A.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20.

Standard: K.CC.B Count to tell the number of objects.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality. a. 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. b. 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. c. Understand that each successive number name refers to a quantity that is one larger
K.CC.B.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Standard: K.CC.C Compare numbers.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.[1] ([1]Include groups with up to ten objects.)
K.CC.C.7	Compare two numbers between 1 and 10 presented as written numerals.

Standard: K.OA.A Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

CPI #	Cumulative Progress Indicator (CPI)
K.OA.A.1	Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings[2], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ([2]Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)

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.5	Demonstrate fluency for addition and subtraction within 5.

Standard: K.NBT.A Work with numbers 11–19 to gain foundations for place value.

CPI #	Cumulative Progress Indicator (CPI)
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.

Standard: K.MD.B Classify objects and count the number of objects in each category.

CPI #	Cumulative Progress Indicator (CPI)
K.MD.B.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.[3] ([3]Limit category counts to be less than or equal to 10.)

Standard: K.G.A Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

CPI #	Cumulative Progress Indicator (CPI)
K.G.A.1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
K.G.A.2	Correctly name shapes regardless of their orientations or overall size.
K.G.A.3	Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

Standard: K.G.B Analyze, compare, create, and compose shapes.

CPI #	Cumulative Progress Indicator (CPI)
K.G.B.4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).
K.G.B.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

Standard: Standards for Mathematical Practice

CPI #	Cumulative Progress Indicator (CPI)
K.MP.1	Make sense of problems and persevere in solving them.
K.MP.2	Reason abstractly and quantitatively.
K.MP.4	Model with mathematics.
K.MP.6	Attend to precision.
K.MP.7	Look for and make use of structure.
K.MP.8	Look for and express regularity in repeated reasoning.

New Jersey Student Learning Standards for Career Readiness, Life Literacies and Key Skills

Standard: 9.4 Life Literacies and Key Skills: Critical Thinking and Problem-solving: Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.

CPI #	Cumulative Progress Indicator (CPI)
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).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

New Jersey Student Learning Standards for Computer Science and Design Thinking

Standard: 8.1 Computer Science: Data & Analysis: Data can be used to make predictions about the world.	
CPI #	**Cumulative Progress Indicator (CPI)**
8.1.2.DA.3	Identify and describe patterns in data visualizations.
8.1.2.DA.4	Make predictions based on data using charts or graphs.
Standard: 8.2 Design Thinking: Engineering Design Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.	
CPI #	**Cumulative Progress Indicator (CPI)**
8.2.2.ED.2	Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Interdisciplinary Standards	

English Language Arts	
CPI #	**Cumulative Progress Indicator (CPI)**
W.2.8	Recall information from experiences or gather information from provided sources to answer a question.
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.
RI.K.1	With prompting and support, ask and answer questions about key details in a text.

Science: Engineering and Design	
CPI #	**Cumulative Progress Indicator (CPI)**
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.

Social Studies	
Standard: 6.1 U.S. History: America in the World: Civics, Government, and Human Rights: Participation and Deliberation When all members of the group are given the opportunity to participate in the decision making process, everyone's voice is heard.	
CPI#	**Cumulative Progress Indicator (CPI)**
6.1.2.Civics PD.1	Engage in discussions effectively by asking questions, considering facts, listening to the ideas of others, and sharing opinions.

Instructional Focus	

Unit Enduring Understandings
- Shapes can be found in the world around us.
- Objects can be sorted.
- Quantities can be represented differently.

Unit Essential Questions
- How do we use shapes in the world around us?
- In what ways can objects be sorted?
- How can quantities be represented?
- How can we compare and contrast two and three-dimensional shapes?

Objectives

We are learning to/that:
- Count to 60 by 1s**.**
- Count forward from a given number, rather than starting at 1.
- Write numbers from 0 to 20.
- Write numbers from 0 to 20 to represent a number of objects.
- Count 20 objects or more one by one, saying the numbers in the standard order and pairing each object with only one number name.

- Identify the number of objects as the last number said when counting a group of objects.
- Count up to 20 objects arranged in a line, rectangular array, or circle to answer "how many?" questions.
- Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group for groups of up to 10 objects.
- Compare two numbers from 1 to 10 presented as written numerals.
- Represent addition with acting out situations, drawings, and equations.
- Add with sums to 10.
- Solve addition and subtraction story problems.
- Fluently add to sums of 5.
- Decompose numbers less than or equal to 10 in pairs in more than one way and record.
- Decompose numbers 11-19 into a group of 10 and some 1s.
- Identify and describe shapes in the environment.
- Identify shapes regardless of orientation or size.
- Identify shapes as 2-D or 3-D.
- Analyze and compare 2-D and 3-D shapes.
- Use informal language to describe the parts and attributes of 2-D and 3-D shapes as well as the similarities and differences between two different 2-D and 3-D shapes.
- Model 3-D shapes in the world by building them.

Evidence of Learning

Assessment

The assessment plan may include teacher-designed formative and summative assessments, district common assessments, self-assessments, and analysis of standardized benchmark and interim assessment data. During each common, formative, and summative assessment, teachers will provide accommodations and alternative assessment opportunities that adhere to 504 and IEP requirements. Alternative assessments are individualized for the needs of all students. Throughout the unit, students will be engaged in activities that involve finding patterns, making generalizations, drawing conclusions, and communicating their ideas with others. Teachers will have many opportunities to observe students' growth in these areas, as well as with specific math skills and concepts throughout this unit.

☑ Formative Assessment

☑ Summative Assessment

☑ Alternative Assessment

☑ Benchmark Assessment

Resources

Foundational Text:
Bridges in Mathematics Kindergarten by The Math Learning Center
Instructional & Professional Resources:
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- DreamBox Learning (Digital Tool)

Additional Supports

WW-P Accommodations and Assessment (Reference Tool and Glossary)

Unit 7: Weight & Place Value

Content Area: Elementary Mathematics	
Course & Grade Level: Mathematics, Kindergarten	

Summary and Rationale

Unit 7 explores weight and place value. Students' ability to sort by mathematical attributes continues to grow with the exploration of weight and capacity. The emphasis is on the language students use to describe objects in increasingly precise and then comparative ways. The act of measuring adds to the level of precision that students use when observing and describing objects. We continue to build on students' prior work with teen numbers, recognizing that numbers 11-20 are composed of 10s and some more 1s. Students will also begin to count by 10s.

Recommended Pacing

20 days

New Jersey Student Learning Standards for Mathematics

Standard: K.CC.A Know number names and the count sequence.

CPI #	Cumulative Progress Indicator (CPI)
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).

Standard: K.CC.B Count to tell the number of objects.

CPI #	Cumulative Progress Indicator (CPI)
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.

Standard: K.CC.C Compare numbers.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.[1] ([1]Include groups with up to ten objects.)
K.CC.C.7	Compare two numbers between 1 and 10 presented as written numerals.

Standard: K.OA.A Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

CPI #	Cumulative Progress Indicator (CPI)
K.OA.A.1	Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings[2], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ([2]Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)
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.5	Demonstrate fluency for addition and subtraction within 5.

Standard: K.NBT.A Work with numbers 11–19 to gain foundations for place value.

CPI #	Cumulative Progress Indicator (CPI)
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.

Standard: K.MD.A Describe and compare measurable attributes.

CPI #	Cumulative Progress Indicator (CPI)
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.*

Standard: K.MD.B Classify objects and count the number of objects in each category.

CPI #	Cumulative Progress Indicator (CPI)
K.MD.B.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.[3] ([3]Limit category counts to be less than or equal to 10.)

Standard: Standards for Mathematical Practice

CPI #	Cumulative Progress Indicator (CPI)
K.MP.1	Make sense of problems and persevere in solving them.
K.MP.2	Reason abstractly and quantitatively.
K.MP.3	Construct viable arguments and critique the reasoning of others.
K.MP.5	Use appropriate tools strategically.
K.MP.6	Attend to precision.
K.MP.7	Look for and make use of structure.

New Jersey Student Learning Standards for Career Readiness, Life Literacies and Key Skills

Standard: 9.4 Life Literacies and Key Skills: Critical Thinking and Problem-solving: Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.

CPI #	Cumulative Progress Indicator (CPI)
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).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

Standard: 9.4 Life Literacies and Key Skills: Technology Literacy: Digital tools have a purpose.

CPI #	Cumulative Progress Indicator (CPI)
9.4.2.TL.4	Navigate a virtual space to build context and describe the visual content.

New Jersey Student Learning Standards for Computer Science and Design Thinking

Standard: 8.1 Computer Science: Data & Analysis: Data can be used to make predictions about the world.

CPI #	Cumulative Progress Indicator (CPI)
8.1.2.DA.3	Identify and describe patterns in data visualizations.
8.1.2.DA.4	Make predictions based on data using charts or graphs.

Standard: 8.2 Design Thinking: Engineering Design Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.

CPI #	Cumulative Progress Indicator (CPI)
8.2.2.ED.2	Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Interdisciplinary Standards

English Language Arts	
CPI #	Cumulative Progress Indicator (CPI)

W.2.8	Recall information from experiences or gather information from provided sources to answer a question.
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.
RI.K.1	With prompting and support, ask and answer questions about key details in a text.

Social Studies

Standard: 6.1 U.S. History: America in the World: Civics, Government, and Human Rights: Participation and Deliberation When all members of the group are given the opportunity to participate in the decision making process, everyone's voice is heard.

CPI#	Cumulative Progress Indicator (CPI)
6.1.2.Civics PD.1	Engage in discussions effectively by asking questions, considering facts, listening to the ideas of others, and sharing opinions.

Instructional Focus

Unit Enduring Understandings

- Objects around us can be measured, described and compared.
- Quantities can be counted and compared using numbers, words and numerals.
- Quantities can be taken apart and put together.

Unit Essential Questions

- Why are objects measured and compared?
- How can quantities be represented?

Objectives

We are learning to/that:

- Count to 100 by 1s.
- Count to 100 by 10s.
- Reads numbers 0-20.
- Write numbers from 0-20 to represent a number of objects.
- Count up to 20 objects arranged in a line, rectangular array, or circle to answer "how many?" questions.
- Compares two numbers from 1-10 presented as written numerals.
- Represent addition with objects, fingers, verbal explanations, drawings or equations.
- Represent subtraction with objects, fingers, verbal explanations, drawings or equations.
- Adds with sums to 10.
- Solve addition and subtraction story problems.
- Decompose numbers less than or equal to 10 into pairs in more than one way, and record.
- Compose numbers from 11 to 19 by adding the required number of 1's to a 10.
- Use a drawing to represent the 10 and 1s in any number from 11-19.
- Use an equation to represent any number from 11 to 19 as the sum of 10 and some more 1s.
- Describe weight of an object.
- Directly compare the weights of two objects, and describe the difference between their weights.
- Classify objects into categories, count the number of objects in different categories.
- Use informal language to describe the parts and attributes of 2D and 3D shapes as well as the similarities and differences between two different 2D and 3D shapes.
- Model 3D shapes in the world by building them.

Evidence of Learning

Assessment

The assessment plan may include teacher-designed formative and summative assessments, district common assessments, self-assessments, and analysis of standardized benchmark and interim assessment data. During each common, formative, and summative assessment, teachers will provide accommodations and alternative

assessment opportunities that adhere to 504 and IEP requirements. Alternative assessments are individualized for the needs of all students. Throughout the unit, students will be engaged in activities that involve finding patterns, making generalizations, drawing conclusions, and communicating their ideas with others. Teachers will have many opportunities to observe students' growth in these areas, as well as with specific math skills and concepts throughout this unit.
☑ Formative Assessment
☑ Summative Assessment
☑ Alternative Assessment
☑ Benchmark Assessment

Resources
Foundational Text: *Bridges in Mathematics Kindergarten* by The Math Learning Center   **Instructional & Professional Resources:**   • Exemplars*, Problem Solving for the 21st Century*   • K-5 Math Teaching Resources   • *Math in Practice: Teaching Kindergarten Math* by Marcy Myers, Susan O'Connell, & John SanGiovanni   • DreamBox Learning (Digital Tool)

Additional Supports
WW-P Accommodations and Assessment (Reference Tool and Glossary)

Unit 8: Computing & Measuring

Content Area: Elementary Mathematics

Course & Grade Level: Mathematics, Kindergarten

Summary and Rationale

Unit 8 deepens students' understanding of subtraction as both an act of taking some away from a total and as an act of comparing and determining the difference between two quantities. Students spend time with non-standard units of measurement to reinforce estimation, measuring, comparing and later place value. The year wraps up with reinforcing strong connections between the three facets of a number: the verbal sequence associated with the number, the quantities numbers represent, and written notation.

Recommended Pacing

20 days

New Jersey Student Learning Standards for Mathematics

Standard: K.CC.A Know number names and the count sequence.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.A.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
K.CC.A.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20.

Standard: K.CC.C Compare numbers.

CPI #	Cumulative Progress Indicator (CPI)
K.CC.A.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 for groups of up to ten objects.

Standard: K.OA.A Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

CPI #	Cumulative Progress Indicator (CPI)
K.OA.A.1	Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings[2], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ([2]Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)
K.OA.A.2	Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
K.OA.A.3	Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).
K.OA.A.4	For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.
K.OA.A.5	Demonstrate fluency for addition and subtraction within 5.

Standard: K.NBT.A Work with numbers 11–19 to gain foundations for place value.

CPI #	Cumulative Progress Indicator (CPI)
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.

Standard: K.MD.A Describe and compare measurable attributes.

CPI #	Cumulative Progress Indicator (CPI)

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.*

Standard: Standards for Mathematical Practice

CPI #	Cumulative Progress Indicator (CPI)
K.MP.1	Make sense of problems and persevere in solving them.
K.MP.2	Reason abstractly and quantitatively.
K.MP.3	Construct viable arguments and critique the reasoning of others
K.MP.4	Model with mathematics.
K.MP.5	Uses appropriate tools strategically.
K.MP.6	Attend to precision.
K.MP.7	Look for and make use of structure.
K.MP.8	Look for and express regularity in repeated reasoning.

New Jersey Student Learning Standards for Career Readiness, Life Literacies and Key Skills

Standard: 9.4 Life Literacies and Key Skills: Critical Thinking and Problem-solving: Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.

CPI #	Cumulative Progress Indicator (CPI)
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).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

New Jersey Student Learning Standards for Computer Science and Design Thinking

Standard: 8.1 Computer Science: Data & Analysis: Data can be used to make predictions about the world.

CPI #	Cumulative Progress Indicator (CPI)
8.1.2.DA.3	Identify and describe patterns in data visualizations.
8.1.2.DA.4	Make predictions based on data using charts or graphs.

Standard: 8.2 Design Thinking: Engineering Design Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.

CPI #	Cumulative Progress Indicator (CPI)
8.2.2.ED.2	Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Interdisciplinary Standards

English Language Arts

CPI #	Cumulative Progress Indicator (CPI)
W.2.8	Recall information from experiences or gather information from provided sources to answer a question.
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.

Science and Engineering Practices

Make observations (firsthand or from media) to collect data that can be used to make comparisons. (K-PS3-1)

Social Studies

Standard: 6.1 U.S. History: America in the World: Civics, Government, and Human Rights: Participation and Deliberation When all members of the group are given the opportunity to participate in the decision making process, everyone's voice is heard.

CPI#	Cumulative Progress Indicator (CPI)
6.1.2.Civics PD.1	

Instructional Focus

Unit Enduring Understandings

- Objects around us can be measured, described and compared.
- Sets of objects can be grouped and counted so that we can compare them in terms of greater than, less than, or equal to.

Unit Essential Questions

- How and why do we count?
- Why do we subtract?
- How and why are objects measured and compared?

Objectives

We are learning to/that:

- Count to 100 by 1s.
- Count forward from a given number.
- Write numerals from 0 to 20 to represent a number of objects.
- Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group for groups of up to 10 objects.
- Represent addition with objects, fingers, verbal explanations, drawings, expressions or equations.
- Represent subtraction with objects, fingers, verbal explanations, drawings, expressions or equations.
- Adds with sums to 10.
- Subtract with minuends to 10.
- Decompose numbers less than or equal to 10 into pairs in more than one way, and record.
- For any number from 1 to 9, find the number that makes 10 when added to that number.
- Record pairs of numbers whose sum is 10 using drawings or equations.
- Fluently add and subtract with sums and minuends to 5.
- Compose numbers from 11 to 19 by adding the required number of 1s to a 10.
- Use an equation to represent any number from 11 to 19 as the sum of 10 and some more 1s.
- Describe length of an object.
- Directly compare the lengths of two objects, and describe the difference between their lengths.

Evidence of Learning

Assessment

The assessment plan may include teacher-designed formative and summative assessments, district common assessments, self-assessments, and analysis of standardized benchmark and interim assessment data. During each common, formative, and summative assessment, teachers will provide accommodations and alternative assessment opportunities that adhere to 504 and IEP requirements. Alternative assessments are individualized for the needs of all students. Throughout the unit, students will be engaged in activities that involve finding patterns, making generalizations, drawing conclusions, and communicating their ideas with others. Teachers will have many opportunities to observe students' growth in these areas, as well as with specific math skills and concepts throughout this unit.

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Resources

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