

Red Bank Charter School

Kindergarten Mathematics Curriculum

Recommended Pacing Guide	
Domain 1: Counting and Cardinality	56 Days
Domain 2: Geometry	32 Days
Domain 3: Measurement and Data	45 Days
Domain 4: Number and Operations in Base Ten	47 Days

Suggested Accommodations For All Units
<p>English Language Learners:</p> <ul style="list-style-type: none">● Pair ELL student with student who speaks English and understands/ able to communicate with student's native language● Simplify content● Google Translator● Multi - language word wall● Provide extended time● Speak clearly and slowly, avoid slang and idiomatic expressions
<p>Special Education/504 Plans/Students with Disabilities:</p> <ul style="list-style-type: none">● Follow specific students accommodations and modifications as listed in individual student IEP or 504 plan
<p>Gifted and Talented:</p> <ul style="list-style-type: none">● Provide appropriate challenges for a wide ranging skills and development.● Participate in inquiry and project-based learning units of study.● Provide options, alternatives and choices to differentiate and broaden the curriculum
<p>Students at Risk of Failure:</p> <ul style="list-style-type: none">● Students Motivation<ul style="list-style-type: none">○ Interest○ Build confidence○ Independence○ Enjoyment
<p>Economically Disadvantaged:</p> <ul style="list-style-type: none">● Build a safe and nurturing atmosphere● Providing needed academic resources (paper, pencils, computer time,)● Be flexible with assignments
<p>Culturally Diverse:</p>

- Involve families in student learning
- Provide immediate praise and feedback
- Respect cultural traditions
- Provided students with necessary academic resources and materials
- Provide visuals

Domain 1: Counting and Cardinality

Duration: 56 Days

Standards/Learning Targets

New Jersey Student Learning Focus Standards:

Know number names and the count sequence.

- NJSLS.MATH.CONTENT.K.CC.A.1
- Count to 100 by ones and by tens. NJSLS.MATH.CONTENT.K.CC.A.2
- Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
- NJSLS.MATH.CONTENT.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).

Count to tell the number of objects.

- NJSLS.MATH.CONTENT.K.CC.B.4
- Understand the relationship between numbers and quantities; connect counting to cardinality.
- NJSLS.MATH.CONTENT.K.CC.B.4.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.
- NJSLS.MATH.CONTENT.K.CC.B.4.B
- Understand that the last number name says the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
- NJSLS.MATH.CONTENT.K.CC.B.4.C
- Understand that each successive number name refers to a quantity that is one larger.
- NJSLS.MATH.CONTENT.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.

Compare numbers.

- NJSLS.MATH.CONTENT.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

Primary Interdisciplinary Connections:

Literacy Connection

With adult support, students use trade books (read-alouds, big books) to learn about and discuss numbers.

- 3.2.K.4.RL.K.10 Actively engage in group reading activities with purpose and understanding.
- 3.2.K.1.RL.K.2 With prompting and support retell familiar stories including key details (e.g. who what where when why how).
- 3.6.K.1.W.K.2 Use a combination of drawing dictating and writing to compose informative explanatory texts in which they name what they are writing about and supply some information about the topic.

With adult support, students use vocabulary strategies to understand math vocabulary for each unit.

- 3.9.K.3.NJSLSA.L6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.
- SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
- A.Follow agreed-upon norms for discussions (e.g. listening to others with care and taking turns speaking about the topics and texts under discussion). B.Continue a conversation through multiple exchanges

Science Connection

With adult support, students will collect numerical data.

- K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface.
1.K-3.K.1.SEP-1 Make observations (firsthand or from media) to collect data that can be used to make comparisons.
- K-PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

Technology Standards:

- 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games museums).
- 8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.
- 8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.

21st Century Themes/Career Readiness:

Career Ready Practices

- CRP2. Apply appropriate academic and technical skills CRP4. Communicate clearly and effectively and with reason CRP6. Demonstrate creativity and innovation.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Personal Financial Literacy

- 9.1.4.B.1 - Differentiate between financial wants and needs.

Career Awareness, Exploration, and Preparation

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

Evidence of Student Learning

Formative Tasks:

- Teacher Observation

Alternative Assessments:

- End of unit project

<ul style="list-style-type: none"> ● Teacher Checklist ● Verbal question & answer ● Self-evaluation of performance and progress 	
<p>Summative Assessments:</p> <ul style="list-style-type: none"> ● Student participation ● Rubric score ● Performance Test 	<p>Benchmark Assessments:</p> <ul style="list-style-type: none"> ● Baseline SGO ● Mid-year SGO ● End of year SGO
<p>Knowledge & Skills</p>	
<p>Enduring Understandings:</p> <ul style="list-style-type: none"> ● Numbers can be represented in multiple ways. ● The same operations can be applied in problem situations that seem quite different from another. ● Being able to compute fluently means making smart choices about which tools to use and when to use them. ● Knowing the reasonableness of an answer comes from using good number sense and estimation strategies. 	<p>Essential Questions:</p> <ul style="list-style-type: none"> ● What makes an estimate reasonable? ● What makes an answer exact? ● What makes a strategy both effective and efficient? ● What makes a solution optimal?
<p>Core Instructional & Supplemental Materials</p>	
<p>Suggested Activities/Resources:</p> <ul style="list-style-type: none"> ● Vocabulary Cards Activities ● Counting Stories ● Blackline Masters ● Literature Kits ● Math Musicals ● Youtube Videos ● Jack Hartman - Let's Get Fit- Count to 100 ● https://www.youtube.com/watch?v=0TgLf3PMOc ● Jack Hartman- Count by 5's ● https://www.youtube.com/watch?v=amxVL9KUmq8 ● Calendar Skills ● Number Bingo Dry ● Erase Boards ● Smart Notebook ● Shaving Cream ● Sand Trays ● Number Cards 	<p>Varied Levels of Text/Resources:</p> <ul style="list-style-type: none"> ● Big Ideas Math Modeling Real Life - Teacher Resources ● https://www.bigideasmath.com/BIM/login ● Big Ideas Math Manipulative Kit ● Student Edition ● Teaching Edition ● Family Letters ● Warm-Ups ● Extra Practice ● Reteach ● Enrichment and Extension ● Prerequisite Skills Practice ● Pre and Post Course Assessments ● Course Benchmark Assessments ● Chapter Assessments

Domain 2: Geometry

Duration: 32 Days

Standards/Learning Targets

New Jersey Student Learning Focus Standards: Identify and describe shapes.

NJSLS.MATH.CONTENT.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.

NJSLS.MATH.CONTENT.K.G.A.2

- Correctly name shapes regardless of their orientations or overall size.

NJSLS.MATH.CONTENT.K.G.A.3

- Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“Solid”). Analyze, compare, create, and compose shapes.

NJSLS.MATH.CONTENT.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).

NJSLS.MATH.CONTENT.K.G.B.5

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

NJSLS.MATH.CONTENT.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?”
- 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).

NJSLS.MATH.CONTENT.K.G.B.5

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

NJSLS.MATH.CONTENT.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?"

Primary Interdisciplinary Connections:

Literacy Connection

With adult support, students use trade books (read-alouds, big books) to learn about and

discuss geometric shapes.

- 3.2.K.4.RL.K.10 Actively engage in group reading activities with purpose and understanding.
- 3.2.K.1.RL.K.2 With prompting and support retell familiar stories including key details (e.g. who what where when why how).
- 3.6.K.1.W.K.2 Use a combination of drawing dictating and writing to compose informative explanatory texts in which they name what they are writing about and supply some information about the topic.

With adult support, students use vocabulary strategies to understand math vocabulary for each unit.

- 3.9.K.3.NJSLSA.L6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.
- 3.8.K.1.SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups. A.Follow agreed-upon norms for discussions (e.g. listening to others with care and taking turns speaking about the topics and texts under discussion). B.Continue a conversation through multiple exchanges.

Technology Standards:

- 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games museums).
- 8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.
- 8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.

21st Century Themes/Career Readiness:

Career Ready Practices

- CRP2. Apply appropriate academic and technical skills
- CRP4. Communicate clearly and effectively and with reason
- CRP6. Demonstrate creativity and innovation.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Personal Financial Literacy

- 9.1.4.B.1 - Differentiate between financial wants and needs.

Career Awareness, Exploration, and Preparation

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

Evidence of Student Learning

Formative Tasks:

- Teacher Observation
- Teacher Checklist

Alternative Assessments:

- End of unit project

<ul style="list-style-type: none"> ● Verbal question & answer ● Self-evaluation of performance and progress 	
<p>Summative Assessments:</p> <ul style="list-style-type: none"> ● Student participation ● Rubric score ● Performance Test 	<p>Benchmark Assessments:</p> <ul style="list-style-type: none"> ● Baseline SGO ● Mid-year SGO ● End of year SGO
<p>Knowledge & Skills</p>	
<p>Enduring Understandings:</p> <ul style="list-style-type: none"> ● Two- and three-dimensional objects can be described, classified, and analyzed by their attributes. ● An object in a plane or in space can be oriented in an infinite number of ways while maintaining its size or shape. ● An object's location on a plane or in space can be described quantitatively. Linear measure, area, and volume are fundamentally different but may be related to one another in ways that permit calculation of one given the other. 	<p>Essential Questions:</p> <ul style="list-style-type: none"> ● Why do we compare contrast and classify objects? ● How do decomposing and recomposing shapes help us build our understanding of mathematics? ● How can transformations be described mathematically?
<p>Core Instructional & Supplemental Materials</p>	
<p>Suggested Activities/Resources:</p> <ul style="list-style-type: none"> ● Vocabulary Cards Activities ● Counting Stories ● Blackline Masters ● Literature Kits ● Math Musicals ● Calendar Skills ● Number Bingo Dry ● Erase Boards ● Smart Notebook ● Shaving Cream ● Sand Trays 	<p>Varied Levels of Text/Resources:</p> <ul style="list-style-type: none"> ● Big Ideas Math Modeling Real Life - Teacher Resources ● https://www.bigideasmath.com/BIM/login ● Big Ideas Math Manipulative Kit ● Student Edition ● Teaching Edition ● Family Letters ● Warm-Ups ● Extra Practice ● Reteach ● Enrichment and Extension ● Prerequisite Skills Practice ● Pre and Post Course Assessments ● Course Benchmark Assessments ● Chapter Assessments

Domain 3: Measurement and Data

Duration: 45 Days

Standards/Learning Targets

New Jersey Student Learning Focus Standards: Describe and compare measurable attributes.

NJSLS.MATH.CONTENT.K.MD.A.1

- Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

NJSLS.MATH.CONTENT.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.
- Classify objects and count the number of objects in each category.

NJSLS.MATH.CONTENT.K.MD.B.3

- Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.1

Primary Interdisciplinary Connections:

Literacy Connection

With adult support, students use trade books (read-alouds, big books) to learn about measurement and data.

- 3.2.K.4.RL.K.10 Actively engage in group reading activities with purpose and understanding.
- 3.2.K.1.RL.K.2 With prompting and support retell familiar stories including key details (e.g. who what where when why how).
- 3.6.K.1.W.K.2 Use a combination of drawing dictating and writing to compose informative explanatory texts in which they name what they are writing about and supply some information about the topic.

With adult support, students use vocabulary strategies to understand math vocabulary for each unit.

- 3.9.K.3.NJSLSA.L6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading writing speaking and listening at the college and career readiness level demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.
- SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
- A.Follow agreed-upon norms for discussions (e.g. listening to others with care and taking turns speaking about the topics and texts under discussion). B.Continue a conversation through multiple exchanges

Science Connection

With adult support, students will collect numerical data.

- K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface.

- 1.K-3.K.1.SEP-1 Make observations (firsthand or from media) to collect data that can be used to make comparisons.
- K-PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

Technology Standards:

- 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games museums).
- 8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.
- 8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.

21st Century Themes/Career Readiness:

Career Ready Practices

- CRP2. Apply appropriate academic and technical skills CRP4. Communicate clearly and effectively and with reason CRP6. Demonstrate creativity and innovation.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Personal Financial Literacy

- 9.1.4.B.1 - Differentiate between financial wants and needs.

Career Awareness, Exploration, and Preparation

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

Evidence of Student Learning

Formative Tasks:

- Teacher Observation
- Teacher Checklist
- Verbal question & answer
- Self-evaluation of performance and progress

Alternative Assessments:

- End of unit project

Summative Assessments:

- Student participation
- Rubric score
- Performance Test

Benchmark Assessments:

- Baseline SGO
- Mid-year SGO
- End of year SGO

Knowledge & Skills

Enduring Understandings:

- Linear measure, area, and volume are fundamentally different but may be related

Essential Questions:

- How are measurement and counting related?

to one another in ways that permit calculation of one given the other.

- How does what we measure affect how we measure?
- How can space be defined through numbers/measurement?

Core Instructional & Supplemental Materials

Suggested Activities/Resources:

- Vocabulary Cards Activities
- Counting Stories
- Blackline Masters
- Literature Kits
- Math Musicals
- Balance scales
- Rulers
- Cubes
- String
- Class objects

Varied Levels of Text/Resources:

- Big Ideas Math Modeling Real Life - Teacher Resources
- <https://www.bigideasmath.com/BIM/login>
- Big Ideas Math Manipulative Kit
- Student Edition
- Teaching Edition
- Family Letters
- Warm-Ups
- Extra Practice
- Reteach
- Enrichment and Extension
- Prerequisite Skills Practice
- Pre and Post Course Assessments
- Course Benchmark Assessments
- Chapter Assessments

Domain 4: Number and Operations in Base Ten

Duration: 47 Days

Standards/Learning Targets

New Jersey Student Learning Focus Standards: Extend the counting sequence.

NJSLS.MATH.CONTENT.1.NBT.A.1

- Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Understand place value.

NJSLS.MATH.CONTENT.1.NBT.B.2

- Understand that the two digits of a two-digit number represent amounts of tens and ones.
- Understand the following as special cases:

NJSLS.MATH.CONTENT.1.NBT.B.2.A

- 10 can be thought of as a bundle of ten ones — called a “ten”.

NJSLS.MATH.CONTENT.1.NBT.B.2.B

- The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.

NJSLS.MATH.CONTENT.1.NBT.B.2.C

- The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

NJSLS.MATH.CONTENT.1.NBT.B.3

- Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.

Use place value understanding and properties of operations to add and subtract.

NJSLS.MATH.CONTENT.1.NBT.C.4

- Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
- Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

NJSLS.MATH.CONTENT.1.NBT.C.5

- Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

NJSLS.MATH.CONTENT.1.NBT.C.6

- Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used

Primary Interdisciplinary Connections:

Literacy Connection

With adult support, students use trade books (read-alouds, big books) to learn about and discuss numbers.

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Personal Financial Literacy

- 9.1.4.B.1 - Differentiate between financial wants and needs.

Career Awareness, Exploration, and Preparation

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

Evidence of Student Learning**Formative Tasks:**

- Teacher Observation
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- Self-evaluation of performance and progress

Alternative Assessments:

- End of unit project

Summative Assessments:

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- Rubric score
- Performance Test

Benchmark Assessments:

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- Numbers can be represented in multiple ways.
- The same operations can be applied in problem situations that seem quite different from another.
- Being able to compute fluently means making smart choices about which tools to use and when to use them.
- Knowing the reasonableness of an answer comes from using good number sense and estimation strategies.

Essential Questions:

- What makes an estimate reasonable?
- What makes an answer exact?
- What makes a strategy both effective and efficient?
- What makes a solution optimal?

Core Instructional & Supplemental Materials**Suggested Activities/Resources:**

- Vocabulary Cards Activities

Varied Levels of Text/Resources:

- Big Ideas Math Modeling Real Life -

- Counting Stories
- Blackline Masters
- Literature Kits
- Math Musicals
- Calendar Skills
- Number Bingo Dry
- Erase Boards
- Smart Notebook
- Shaving Cream
- Sand Trays
- Number Cards

Teacher Resources

- <https://www.bigideasmath.com/BIM/login>
- Big Ideas Math Manipulative Kit
- Student Edition
- Teaching Edition
- Family Letters
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