

Red Bank Charter School

Grade 2 Mathematics Curriculum

Recommended Pacing Guide	
Unit 1: Operations and Algebraic Thinking	60 Days
Unit 2: Measurement and Data	40 Days
Unit 3: Number and Operations in Base Ten	65 Days
Unit 4: Geometry	15 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

Culturally Diverse:

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

Unit 1: Operations and Algebraic Thinking

Duration: 60 Days

Standards/Learning Targets

New Jersey Student Learning Focus Standards: Represent and solve problems involving addition and subtraction.

NJSLS.MATH.CONTENT.2.OA.A.1

- Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.¹ Add and subtract within 20.

NJSLS.MATH.CONTENT.2.OA.B.2

- Fluently add and subtract within 20 using mental strategies.² By end of Grade 2, know from memory all sums of two one-digit numbers.
- Work with equal groups of objects to gain foundations for multiplication.

NJSLS.MATH.CONTENT.2.OA.C.3

- Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s.
- Write an equation to express an even number as a sum of two equal addends.

NJSLS.MATH.CONTENT.2.OA.C.4

- Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns.
- Write an equation to express the total as a sum of equal addends.

Primary Interdisciplinary Connections:

English Language Arts

- 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.
- 3.7.K.1.NJSLSA.SL1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners building on others ideas and expressing their own clearly and persuasively.
- 3.7.K.2.NJSLSA.SL5 Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
- 3.5.K.2.NJSLSA.W6 Use technology including the Internet to produce and publish writing and to interact and collaborate with others.
- 3.5.K.3.NJSLSA.W9 Draw evidence from literary or informational texts to support analysis reflection and research.
- 3.3.2.3.RI.2.7 Explain how specific illustrations and images (e.g. a diagram showing how a machine works) contribute to and clarify a text.

Science Connections

- 1.2-1.1.1.CC-1 Patterns in the natural and human designed world can be observed.
- 1.2-1.1.2.CC-1 Simple tests can be designed to gather evidence to support or refute student ideas about causes.
- 1.2-4.2.1.DCI-2 Asking questions, making observations and gathering information are helpful in thinking about problems.

Technology Standards:

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

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.
- 9.1.4.A.1 Explain the difference between a career and a job and identify various jobs in the community and the related earnings.

Career Awareness, Exploration and Preparation

- 9.2.4.A.1 Identify reasons why people work, different types of work, and the work can help a person achieve personal and professional goals.
- 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:

- Change is fundamental to understanding functions.
- Numbers or objects that repeat unpredictable ways can be described or generalized.
- An operation can be “undone” by its inverse.
- Rules of arithmetic and algebra can be used together with notions of equivalence to transform equations and inequalities so solutions can be found.

Essential Questions:

- How can change be described mathematically?
- How are patterns of change related to the behavior of functions?
- How do mathematical models/representations shape our understanding of mathematics?

Core Instructional & Supplemental Materials

Suggested Activities/Resources:

- Vocabulary Cards
- Activities
- Blackline Masters
- Addition and Subtraction Bingo
- Dry Erase Boards

Varied Levels of Text/Resources:

- Big Ideas Math Student Edition
- Big Ideas Math.com Centers
- Big Ideas Math Manipulative Kits
- Literature Kits
- Math Musicals
- Family Letter
- Warm-Ups
- Extra Practice
- Reteach
- Enrichment and Extension
- Prerequisite Skills Practice
- Pre and Post Course Tests
- Course Benchmark Tests
- Chapter Tests

Standards/Learning Targets

New Jersey Student Learning Focus Standards: Measure and estimate lengths in standard units.

NJSLS.MATH.CONTENT.2.MD.A.1

- Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

NJSLS.MATH.CONTENT.2.MD.A.2

- Measure the length of an object twice, using length units of different lengths for the two measurements.
- Describe how the two measurements relate to the size of the unit chosen.

NJSLS.MATH.CONTENT.2.MD.A.3

- Estimate lengths using units of inches, feet, centimeters, and meters.

NJSLS.MATH.CONTENT.2.MD.A.4

- Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
- Relate addition and subtraction to length.

NJSLS.MATH.CONTENT.2.MD.B.5

- Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.

NJSLS.MATH.CONTENT.2.MD.B.6

- Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.
- Work with time and money.

NJSLS.MATH.CONTENT.2.MD.C.7

- Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

NJSLS.MATH.CONTENT.2.MD.C.8

- Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?
- Represent and interpret data.

NJSLS.MATH.CONTENT.2.MD.D.9

- Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object.

- Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

NJSLS.MATH.CONTENT.2.MD.D.10

- Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories.
- Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

Primary Interdisciplinary Connections:

English Language Arts

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- 3.7.K.1.NJSLSA.SL1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners building on others ideas and expressing their own clearly and persuasively.
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- 3.3.2.3.RI.2.7 Explain how specific illustrations and images (e.g. a diagram showing how a machine works) contribute to and clarify a text.

Science Connections

- 1.2-1.1.1.CC-1 Patterns in the natural and human designed world can be observed.
- 1.2-1.1.2.CC-1 Simple tests can be designed to gather evidence to support or refute student ideas about causes.
- 1.2-4.2.1.DCI-2 Asking questions, making observations and gathering information are helpful in thinking about problems.
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Technology Standards:

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21st Century Themes/Career Readiness:

Career Ready Practices

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Personal Financial Literacy

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

Essential Questions:

- How are measurement and counting related?
- How does what we measure affect how we measure?
- How can space be defined through numbers/measurement?
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Core Instructional & Supplemental Materials

Suggested Activities/Resources:

- Vocabulary Cards
- Activities
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Varied Levels of Text/Resources:

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Standards/Learning Targets

New Jersey Student Learning Focus Standards: Understand place value.**NJSLS.MATH.CONTENT.2.NBT.A.1**

- Understand that the three digits of a three-digit number represent amounts hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:

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

- 100 can be thought of as a bundle of ten tens — called a “hundred”.

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

- The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

NJSLS.MATH.CONTENT.2.NBT.A.2

- Count within 1000; skip-count by 5s, 10s, and 100s.

NJSLS.MATH.CONTENT.2.NBT.A.3

- Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

NJSLS.MATH.CONTENT.2.NBT.A.4

- Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

Use place value understanding and properties of operations to add and subtract.**NJSLS.MATH.CONTENT.2.NBT.B.5**

- Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

NJSLS.MATH.CONTENT.2.NBT.B.6

- Add up to four two-digit numbers using strategies based on place value and properties of operations.

NJSLS.MATH.CONTENT.2.NBT.B.7

- Add and subtract within 1000, 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.
- Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

NJSLS.MATH.CONTENT.2.NBT.B.8

- Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.

NJSLS.MATH.CONTENT.2.NBT.B.9

- Explain why addition and subtraction strategies work, using place value and the properties of operations.1

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- 1.2-1.1.1.CC-1 Patterns in the natural and human designed world can be observed
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21st Century Themes/Career Readiness:**Career Ready Practices**

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Career Awareness, Exploration and Preparation

- 9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
- 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades at 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:

- 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

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Unit 4: Geometry**Duration: 15 Days****Standards/Learning Targets****New Jersey Student Learning Focus Standards: Reason with shapes and their attributes.****NJSLS.MATH.CONTENT.2.G.A.1**

- Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.1 Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

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

- Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

NJSLS.MATH.CONTENT.2.G.A.3

- Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths.
- Recognize that equal shares of identical wholes need not have the same shape.

Primary Interdisciplinary Connections:**English Language Arts**

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Technology Standards:

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21st Century Themes/Career Readiness:

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Evidence of Student Learning

Formative Tasks:

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- 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:

Essential Questions:

- Why do we compare contrast and classify

- Two- and three-dimensional objects can be described, classified, and analyzed by their attributes.
- Objects in a plane or in space can be oriented in an infinite number of ways while maintaining its size or shape.
- Object's location on a plane or in space can be described quantitatively.
- Clear measure, area, and volume are fundamentally different but may be related to one another in ways that permit calculation of one given the other.

- objects?
- How do decomposing and recomposing shapes help us build our understanding of mathematics?
- How can transformations be described mathematically?

Core Instructional & Supplemental Materials

Suggested Activities/Resources:

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