



Totowa Public Schools

Mathematics

Grade 2

Aligned to NJSLS 2020 Standards

BOE Adopted: 08/31/2022

Revised 12/14/2022

Units of Study & Pacing Guide

<u>Unit of Study</u>	<u>Timeline</u>	<u>Notes</u>
Unit 1: Number Concepts & Numbers to 1,000	8 Weeks	
Unit 2: Basic Facts and Number Relationships & Two-Digit Addition	8 Weeks	
Unit 3: Two-digit Subtraction & Three Digit Addition/Subtraction	8 Weeks	
Unit 4: Money, Time & Length in Customary Units	6 Weeks	
Unit 5: Length in Metric Units, Data, Geometry, and Fraction Concepts	6 Weeks	

Title	Number Concepts & Numbers to 1,000
Unit Duration	8 Weeks
Unit Summary & Rationale	<i>In this unit students extend their understanding of the base-ten system by recognizing that the digits in each place represent amounts of hundreds, tens, or ones. Students write the word names of numbers. Students will use knowledge of place value concepts to compare and order numbers. Students will identify odd and even numbers. A numeral has meaning based upon the place values of its digits. Applying models of addition and subtraction can serve as a basis for basic computational methods. Counting by fives, tens, and multiples of hundreds extends students' understanding of the base-ten system.</i>
Unit Goals	
Essential Questions	<ul style="list-style-type: none"> • How do operations affect numbers? • How is an equation like a balance scale? • How do you use addition and subtraction to solve real world problems? • How does the position of a digit in a number affect its value? • How can we compare and contrast numbers?
Enduring Understandings	<ul style="list-style-type: none"> • Unit Enduring Understandings: • The significance of numbers affects the outcome of operations on them. • The totals on each side of an equal sign equal each other, similar to that of a balance scale. • Real-life situations regarding the increase or decrease of numbers/objects can be applied to addition and subtraction. • The overall value of a number is determined by its location within a number. • Two and three digit numbers can be compared based on the meaning of the hundreds, tens, and ones digits using the $<$, $>$, and $=$ symbols to record the results of the comparisons.

Learning Outcomes	<ul style="list-style-type: none"> • Be able to add and subtract within 20 to solve one and two step word problems with unknowns in any position. • Be able to represent a 3-digit number as specific amounts of 100s, 10s, and 1s. • Be able to identify ten tens as 100 and represent two hundred, three hundred,...nine hundred with 2, 3,.....9 hundred bundles (with zero tens and zero ones). • Be able to skip count by 5s and 10s up to 100....beginning at any multiple of 5. • Be able to read numbers to 1000 using base-ten numerals, number names, and expanded form. • Be able to write numbers to 1000 using base-ten numerals, number names, and expanded form. • Be able to use symbols $<$, $>$, $=$, to record the results of comparing two 3-digit numbers by decomposing the number into a number of 100s, 10s, and 1s.
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Assessment Evidence	
Formative	Collaborative Activities, Homework, Daily Classwork, Discussion Independent Class Assignment, Informal Observations of Students, Digital Personal Math Trainer, Games, Exit Slips, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day
Summative	LinkIt Benchmark Assessments, Tests, Mid-Chapter Checkpoint Assessments, Quizzes, Written Responses.
Alternative and Benchmark	<p>Alternative – Reteaching, One on One Conferencing, Learning Centers, Levels Homework, Higher Order Thinking Problems, Additional leveled practice, Student portfolio of work, oral assessments</p> <p>Benchmark - LinkIt Benchmark Assessments, Totowa TPA, Teacher generated assessments (unit tests, etc.)</p> <p>Formative, Summative, Alternative and Benchmark Assessments</p>

Resources to Promote Learning

Resources & Equipment Needed

Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Go Math! Resources, Assorted Manipulatives, Scrap paper, connecting cubes, number dice, crayons, pattern blocks, construction paper, graph paper, charts, number lines. [Approved Class Resource List](#)

Content & Interdisciplinary Standards

NJ 2020 SLS: Mathematics

NJSLS	Activity
<p>2.NBT.A.1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:</p> <p>2.NBT.A.1a. 100 can be thought of as a bundle of ten tens — called a “hundred.”</p> <p>2.NBT.A.1b. 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)</p>	<ul style="list-style-type: none"> • Students will write 2-digit and 3 digit numbers in expanded form. • Use base-ten blocks along with numerals on place-value mats to provide connections between physical and symbolic representations of a 2-digit and 3 digit numbers.
<p>2.NBT.A.2. Count within 1000; skip-count by 5s, 10s, and 100s.</p>	<ul style="list-style-type: none"> • Students can use hundred chart to skip count by 1’s, 5’s, and 10’s.
<p>2.NBT.A.3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.</p>	<ul style="list-style-type: none"> • Students will read 3-digit numbers represented in various ways including base-ten blocks, number names, and expanded form.
<p>2.OA.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.</p>	<ul style="list-style-type: none"> • Students will draw pictures and based on the picture determine if the number is odd or even.

<p>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.</p>	<ul style="list-style-type: none"> • Students will compare 3-digit numbers that can be made using the digits 0-9. Students will conclude that when 2 numbers have the same digit in the hundreds place, they need to compare digits in the tens place to determine which number is larger.
<p>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.</p>	

Mathematical Practices

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

NJ: 2016 SLS: English Language Arts

- W.2.1. Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a conclusion.
- W.2.8. Recall information from experiences or gather information from provided sources to answer a question
- RI.2.1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- SL.2.1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- L.2.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- SL.2.6. Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

2020 SLS: Computer Science & Design Thinking

NJSLS Performance Expectations (By the end of 2nd Grade)

- 8.2.2.ITH.3: Identify how technology impacts or improves life.
- 8.1.2.DA.3: Identify and describe patterns in data visualizations.

2020 SLS: Career Readiness, Life Literacies, and Key Skills

NJSLS Performance Expectations (By the end of 2nd Grade)

Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. These practices should be taught and reinforced in all content areas with increasingly higher levels of complexity and expectation as a student advances through a program of study.

- Act as a responsible and contributing community members and employee.
- Attend to financial well-being.
- Consider the environmental, social and economic impacts of decisions
- Demonstrate creativity and innovation.
- Utilize critical thinking to make sense of problems and persevere in solving them.
- Model integrity, ethical leadership and effective management.
- Plan education and career paths aligned to personal goals.
- Use technology to enhance productivity increase collaboration and communicate effectively.
- Work productively in teams while using cultural/global competence

- 9.1.2.CR.1: Recognize ways to volunteer in the classroom, school and community.
- 9.4.2.IML.1: Identify a simple search term to find information in a search engine or digital resource.
- 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
- 9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

Interdisciplinary/21st Century Connections

21st Century Connections

- Creativity and Innovation
- Critical thinking
- Collaboration and Teamwork
- Problem Solving

Title	Basic Facts and Relationships/2 Digit Addition/2 Digit Subtraction
Unit Duration	8 Weeks
Unit Summary & Rationale	<i>Students extend their understanding of place value and properties of operations with addition and subtraction to include numbers through 1000. They will also count within 1000 by ones, 5s, 10s, and 100s beginning at any multiple of 1, 5, 10, or 100. Students will recognize that groups of even numbers can be counted by 2s and groups of odd numbers will not pair up evenly. Students will write an equation to illustrate that all even numbers can be formed from the addition of two equal addends. Students will add and subtract fluently within 10 using mental math as well as add up to four two-digit numbers based on place value and properties of operations. The students will add and subtract within 50 using various strategies including place value and properties of operations.</i>
Unit Goals	
Essential Questions	<ul style="list-style-type: none"> • How can memorizing the basic addition and subtraction facts help me? • How does understanding place value help you solve double digit addition and subtraction problems? • What are efficient methods for finding sums and differences?
Enduring Understandings	<ul style="list-style-type: none"> • Knowledge of addition and subtraction facts makes the computation of larger numbers easier to solve. • Numbers can be aligned in accordance with place value to correctly add denominations of ten. • Flexible methods of computation involve grouping numbers in strategic ways. Mental math strategies can be used to solve problems involving numbers.
Learning Outcomes	<ul style="list-style-type: none"> • Be able to recognize that groups of even numbers can be counted by 2s and that in groups of odd numbers objects will not pair up evenly. • Be able to write an equation to illustrate that all even numbers can be formed from the addition of two equal addends. • Be able to add up to four two-digit numbers based on place value and properties of operations. • Be able to count within 1000 by ones, 5s, 10s, and 100s beginning at any multiple of 1, 5, 10, or 100.

- Be able to add and subtract fluently within ten using mental strategies.
- Be able to use various strategies such as place value, properties of operations, etc. to add and subtract numbers within 50

Assessment Evidence	
Formative	Collaborative Activities, Homework, Daily Classwork, Discussion Independent Class Assignment, Informal Observations of Students, Digital Personal Math Trainer, Games, Exit Slips, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day
Summative	LinkIt Benchmark Assessments, Tests, Mid-Chapter Checkpoint Assessments, Quizzes, Written Responses.
Alternative and Benchmark	<p>Alternative – Reteaching, One on One Conferencing, Learning Centers, Levels Homework, Higher Order Thinking Problems, Additional leveled practice, Student portfolio of work, oral assessments</p> <p>Benchmark - LinkIt Benchmark Assessments, Totowa TPA, Teacher generated assessments (unit tests, etc.)</p> <p>Formative, Summative, Alternative and Benchmark Assessments</p>
Resources to Promote Learning	
Resources & Equipment Needed	Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Go Math! Resources, Assorted Manipulatives, Scrap paper, connecting cubes, number dice, crayons, pattern blocks, construction paper, graph paper, charts, number lines. Approved Class Resource List
Content & Interdisciplinary Standards	
NJ 2020 SLS: Mathematics	
NJSLs	Activity
2.OA.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing	<ul style="list-style-type: none"> • Separate groups of no more than 20 objects into two equal groups. Students will determine that odd numbers will have some objects remaining while even numbers will not.

objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.	<ul style="list-style-type: none"> • Provide students with an even number, such as 24, and have them determine which two equal addends will form the number ($12 + 12$). Counters can be used if needed.
2.NBT.B.6. Add up to four two-digit numbers using strategies based on place value and properties of operations.	<ul style="list-style-type: none"> • Students will build on their flexible strategies for adding up to 4 two-digit numbers where regrouping is necessary.
2.NBT.A.2. Count within 1000; skip-count by 5s, 10s, and 100s.	<ul style="list-style-type: none"> • Use nickels, dimes, and dollar bills to skip count by 5, 10, and 100.
2.OA.2 Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	<ul style="list-style-type: none"> • Students will apply commutative and associative properties to their mental strategies for sums less or equal to 20 using the numbers 0 to 20.
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.	<ul style="list-style-type: none"> • Students will use dice to construct numbers to add and subtract within 50 using a variety of strategies.

Mathematical Practices

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

- W.2.1. Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a conclusion.
- W.2.8. Recall information from experiences or gather information from provided sources to answer a question
- RI.2.1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- SL.2.1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- L.2.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- SL.2.6. Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

2020 SLS: Computer Science & Design Thinking

NJSLS Performance Expectations (By the end of 2nd Grade)

- 8.2.2.ITH.3: Identify how technology impacts or improves life.
- 8.1.2.DA.3: Identify and describe patterns in data visualizations.
- 8.1.2.AP.4: Break down a task into a sequence of steps.

2020 SLS: Career Readiness, Life Literacies, and Key Skills

NJSLS Performance Expectations (By the end of 2nd Grade)

Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. These practices should be taught and reinforced in all content areas with increasingly higher levels of complexity and expectation as a student advances through a program of study.

- Act as a responsible and contributing community members and employee.
- Attend to financial well-being.
- Consider the environmental, social and economic impacts of decisions
- Demonstrate creativity and innovation.
- Utilize critical thinking to make sense of problems and persevere in solving them.
- Model integrity, ethical leadership and effective management.
- Plan education and career paths aligned to personal goals.
- Use technology to enhance productivity increase collaboration and communicate effectively.
- Work productively in teams while using cultural/global competence

- 9.1.2.CR.1: Recognize ways to volunteer in the classroom, school and community.

- 9.4.2.IML.1: Identify a simple search term to find information in a search engine or digital resource.
- 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
- 9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).
- 9.1.2.PB.2: Explain why an individual would choose to save money.
- 9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).

Interdisciplinary/21st Century Connections

21st Century Connections	<ul style="list-style-type: none"> • Creativity and Innovation • Critical thinking • Collaboration and Teamwork • Problem Solving
SEL	<ul style="list-style-type: none"> • Self-Management • Responsible Decision-Making <p>New Jersey Social and Emotional Learning Competencies and Sub-Competencies.docx</p>

Title	Three Digit Addition and Subtraction/ Money and Time
Unit Duration	8 Weeks
Unit Summary & Rationale	<i>Various measurements and word problems are continued in this unit. Students will solve one and two step word problems that include different lengths and measurements. Students will add and subtract within 100 to solve problems for various situations. The students will also use a number line to represent the solution of whole number sums and differences. The students continue their work with time with telling time to the nearest five minutes. The students are also introduced to the topic of money in this unit. Adding and subtracting fluently within 20 using mental strategies continues in this unit as well.</i>
Unit Goals	
Essential Questions	<ul style="list-style-type: none"> • What strategies do I use to effectively compute sums and differences mentally?

	<ul style="list-style-type: none"> • How can I model and solve problems by representing, adding, and subtracting amounts of money? • Why is it important to understand the values of coins and bills? How can I represent the same amount of money using different combinations of coins and bills? • What units are used to measure the attributes of time? How can I tell time using both analog and digital clocks? • How is measurement related to addition and subtraction?
Enduring Understandings	<ul style="list-style-type: none"> • Mental math strategies can be utilized to solve problems involving numbers such as zero facts, counting on, doubles, making tens, counting back, etc. Regrouping may be used to add and subtract whole numbers. • Addition can be modeled through buying items from a store advertisement or adding up all the money in a piggy bank. Subtraction can be modeled by making sure the correct amount of change has been given with a money problem. • Coins and bills are symbols for amounts of money. We can create equal amounts of money using different combinations of coins and bills. Coins and bills also provide options for money equivalencies. • Analog and digital clocks can measure time to the nearest five minutes. Analog clocks closely resemble a number line, however digital clocks require the use of place value to tell time. • Combining measurements or determining how much longer one measurement is than another requires the use of addition and subtraction.
Learning Outcomes	<ul style="list-style-type: none"> • Be able to apply properties of place value to mentally add or subtract 10 or 100 from a given number within 100-900. • Be able to apply addition and subtraction strategies based on place value and the properties of operations. Also, explain why these strategies work using objects or drawings. • Be able to add and subtract within 100 in word problems involving lengths using a symbol to represent the unknown number. • Be able to use a number line to represent the solution of whole number sums and differences related to length within 100 by using equally spaced points.

- Be able to tell and write time using analog and digital clocks to the nearest five minutes using AM and PM.
- Be able to identify, recognize, and solve word problems with dollar bills, quarters, dimes, nickels, and pennies using the dollar and cent symbols appropriately.
- Be able to add and subtract within 100 to solve 1 or 2 step word problems with unknowns in any position.
- Be able to add and subtract fluently within 20 using mental strategies such as decomposing and composing.

Assessment Evidence	
Formative	Collaborative Activities, Homework, Daily Classwork, Discussion Independent Class Assignment, Informal Observations of Students, Digital Personal Math Trainer, Games, Exit Slips, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day
Summative	LinkIt Benchmark Assessments, Tests, Mid-Chapter Checkpoint Assessments, Quizzes, Written Responses.
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Resources to Promote Learning	
Resources & Equipment Needed	Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Go Math! Resources, Assorted Manipulatives, Scrap paper, connecting cubes, number dice, crayons, pattern blocks, construction paper, graph paper, charts, number lines, clocks, money/pennies. Approved Class Resource List

Content & Interdisciplinary Standards**NJ 2020 SLS: Mathematics**

NJSLS	Activity
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.	<ul style="list-style-type: none">• Student will be given a number between 100 and 900. Have student add or subtract 10 or 100 from that number mentally.
2.NBT.B.9. Explain why addition and subtraction strategies work, using place value and the properties of operations.	<ul style="list-style-type: none">• Students will solve an addition or subtraction problem such as $37+12=49$, then explain which addition or subtraction strategy they used and why that strategy worked.
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.	<ul style="list-style-type: none">• Students will work in teams to solve word problems involving length.
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.	<ul style="list-style-type: none">• Students will represent their addition and subtraction of whole numbers related to length within 100 on a number line.
2.MD.C.7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	<ul style="list-style-type: none">• Students will use real clocks to tell time to the nearest 5 minutes.
2.MD.C.8. Solve word problems involving dollar bills, quarters, dimes, nickels, and	<ul style="list-style-type: none">• Students will play money bingo to identify dollar bills and coins as well as their value.

pennies, using \$ and ¢ symbols appropriately.	
2.OA.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.	<ul style="list-style-type: none"> Students will solve 1 or 2 step word problems using addition or subtraction within 100 on LinkIt.
2.OA.2 Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	<ul style="list-style-type: none"> Students will complete weekly timed math drills.
Mathematical Practices	
<ul style="list-style-type: none"> MP.1. Make sense of problems and persevere in solving them. MP.2. Reason abstractly and quantitatively. MP.3. Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics. MP.5. Use appropriate tools strategically. MP.6. Attend to precision. MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning. 	
NJ: 2016 SLS: English Language Arts	
<ul style="list-style-type: none"> W.2.1. Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a conclusion. W.2.8. Recall information from experiences or gather information from provided sources to answer a question 	

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- 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
- 9.4.2.TL.6: Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).
- 9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

Interdisciplinary/21st Century Connections

21st Century Connections	<ul style="list-style-type: none"> • Creativity and Innovation • Critical thinking • Collaboration and Teamwork • Problem Solving
SEL	<ul style="list-style-type: none"> • Self-Management • Responsible Decision-Making <p>New Jersey Social and Emotional Learning Competencies and Sub-Competencies.docx</p>

Title	Length in Customary Units/Length in Metric Units
Unit Duration	6 Weeks
Unit Summary & Rationale	<i>This unit begins with arrays and measurements. The students will transition from measuring lengths with nonstandard units to measuring with standard units such as inches and feet. Students will also estimate lengths before measuring and compare lengths. The study of place value including numbers through 1000 and using mental strategies to fluently add/subtract numbers through 20 also continues in this unit.</i>
Unit Goals	
Essential Questions	<ul style="list-style-type: none"> • What do we measure? • When do you need to measure? • What different tools do we use to measure? • Why do we estimate when measuring? • How can we compare and order lengths of objects? • How can we compare objects by length? • What can we measure in the real world? • How can a number line be used to find sum and difference?
Enduring Understandings	<ul style="list-style-type: none"> • Measuring is an important skill for students to learn and master. Being able to measure both visually and with a ruler reinforce the idea of objects being larger and smaller.

Learning Outcomes	<ul style="list-style-type: none"> • Be able to measure or estimate lengths of objects using appropriate tools (inches, feet, etc.) • Be able to compare measurements of an object obtained with two different units of measure and explain that the difference in the measurements is due to the size of the unit chosen. • Be able to compare lengths of two objects and determine how much longer one object is than the other using the same standard unit of measure. • Be able to choose an appropriate strategy to add and subtract within 100.
Assessment Evidence	
Formative	Collaborative Activities, Homework, Daily Classwork, Discussion Independent Class Assignment, Informal Observations of Students, Digital Personal Math Trainer, Games, Exit Slips, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day
Summative	LinkIt Benchmark Assessments, Tests, Mid-Chapter Checkpoint Assessments, Quizzes, Written Responses.
Alternative and Benchmark	<p>Alternative – Reteaching, One on One Conferencing, Learning Centers, Levels Homework, Higher Order Thinking Problems, Additional leveled practice, Student portfolio of work, oral assessments</p> <p>Benchmark - LinkIt Benchmark Assessments, Totowa TPA, Teacher generated assessments (unit tests, etc.)</p> <p>Formative, Summative, Alternative and Benchmark Assessments</p>
Resources to Promote Learning	
Resources & Equipment Needed	Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Go Math! Resources, Assorted Manipulatives, Scrap paper, connecting cubes, number dice, crayons, pattern blocks, construction paper, graph paper, charts, number lines, clocks, rulers, string, tape, Approved Class Resource List

Content & Interdisciplinary Standards**NJ 2020 SLS: Mathematics**

NJSLS	Activity
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. 2.MD.A.3. Estimate lengths using units of inches, feet, centimeters, and meters.	Using classroom items, the students will measure lengths using various units of measurement.
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.	The students will use two different units of measure to measure the same classroom object and explain that the difference is due to the size of the unit chosen.
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.	The students will measure 2 classroom objects using the same standard unit of measure and determine the difference in length between the 2 objects.

Mathematical Practices

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

NJ: 2016 SLS: English Language Arts

- W.2.1. Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a conclusion.
- W.2.8. Recall information from experiences or gather information from provided sources to answer a question
- RI.2.1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- SL.2.1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- L.2.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- SL.2.6. Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

2020 SLS: Computer Science & Design Thinking

NJSLS Performance Expectations (By the end of 2nd Grade)

- 8.2.2.ITH.3: Identify how technology impacts or improves life.
- 8.1.2.DA.3: Identify and describe patterns in data visualizations.

2020 SLS: Career Readiness, Life Literacies, and Key Skills

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Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. These practices should be taught and reinforced in all content areas with increasingly higher levels of complexity and expectation as a student advances through a program of study.

- Act as a responsible and contributing community members and employee.
- Attend to financial well-being.
- Consider the environmental, social and economic impacts of decisions
- Demonstrate creativity and innovation.
- Utilize critical thinking to make sense of problems and persevere in solving them.
- Model integrity, ethical leadership and effective management.
- Plan education and career paths aligned to personal goals.
- Use technology to enhance productivity increase collaboration and communicate effectively.
- Work productively in teams while using cultural/global competence

- 9.1.2.CR.1: Recognize ways to volunteer in the classroom, school and community.
- 9.4.2.IML.1: Identify a simple search term to find information in a search engine or digital resource.

- 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
- 9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

Interdisciplinary/21st Century Connections

Science	<ul style="list-style-type: none"> • 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.
21st Century Connections	<ul style="list-style-type: none"> • Creativity and Innovation • Critical thinking • Collaboration and Teamwork • Problem Solving
SEL	<ul style="list-style-type: none"> • Self-Management • Responsible Decision-Making <p>New Jersey Social and Emotional Learning Competencies and Sub-Competencies.docx</p>

Title	Data/Geometry and Fraction Concepts
Unit Duration	6 Weeks
Unit Summary & Rationale	<i>Students will also recognize and draw shapes having specified attributes. The use of various tools of measurement to measure lengths of objects will be reviewed in this unit, however representing this data on a line plot will be taught. Drawing picture and bar graphs will be introduced as well. Students will partition circles and rectangles into two, three, and four equal shares then describe them using the words halves, thirds, etc. The students will continue to fluently add and subtract within 20 using mental strategies as well as fluently add and subtract within 100 using various strategies.</i>
Unit Goals	
Essential Questions	<ul style="list-style-type: none"> • How do fractions help you share equally? • How can spatial relationships and objects be represented by the use of geometric language?

	<ul style="list-style-type: none"> • How do you demonstrate the relationship between numbers, quantities, and place value for whole numbers up to 1,000? • How do you find sums and differences by taking apart and recombining numbers in a variety of ways? • What are different ways that data can be displayed? • Why do we collect data? • Why do we record data on a graph?
Enduring Understandings	<ul style="list-style-type: none"> • Fractional parts are equal shares of a whole number, whole object, or a whole set. • Geometric solids and figures can be combined or cut apart to form equal parts. Flat surfaces can be covered by a group of squares. Geometric figures can be constructed by geometric properties. • Place value can help to determine which numbers are larger or smaller than other numbers. • Problems involving numbers may be simplified by using the commutative, associate, and identity properties. Regrouping can also be used to add and subtract whole numbers. • Data can be conveyed in a concise way by using graphs (bar and line).
Learning Outcomes	<ul style="list-style-type: none"> • Be able to apply addition and subtraction strategies to add and subtract like units and compose or decompose higher value units when needed. • Be able to compute sums and differences of one, two, and three-digit numbers within 1000 using strategies based on place value, properties of operations, and/or the inverse relationship between addition and subtraction. • Be able to explain why addition and subtraction strategies work using place value and the properties of operations. • Be able to measure and repeat measures of several objects to the nearest whole unit then represent the data on a line plot. • Be able to draw picture and bar graphs to represent data as well as solve problems using information presented on a bar graph. • Be able to draw and identify shapes that have specific attributes. • Be able to decompose rectangular and circular objects into two, three, or four equal parts. Be able to describe the parts using words such as halves, thirds, etc.

- Be able to add and subtract fluently within 20 using mental strategies.
- Be able to fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
- **Career Exploration** – Students will examine careers in math and math related fields (engineering, architecture, banking/business, cashier, etc.)

Assessment Evidence	
Formative	Collaborative Activities, Homework, Daily Classwork, Discussion Independent Class Assignment, Informal Observations of Students, Digital Personal Math Trainer, Games, Exit Slips, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day
Summative	LinkIt Benchmark Assessments, Tests, Mid-Chapter Checkpoint Assessments, Quizzes, Written Responses.
Alternative and Benchmark	<p>Alternative – Reteaching, One on One Conferencing, Learning Centers, Levels Homework, Higher Order Thinking Problems, Additional leveled practice, Student portfolio of work, oral assessments</p> <p>Benchmark - LinkIt Benchmark Assessments, Totowa TPA, Teacher generated assessments (unit tests, etc.)</p> <p>Formative, Summative, Alternative and Benchmark Assessments</p>
Resources to Promote Learning	
Resources & Equipment Needed	Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Go Math! Resources, Assorted Manipulatives, Scrap paper, connecting cubes, number dice, crayons, pattern blocks, construction paper, graph paper, charts, number lines 3D and 2D shapes, tape, string, rulers. Approved Class Resource List
Content & Interdisciplinary Standards	
NJ 2020 SLS: Mathematics	

NJSLS	Activity
<p>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.</p>	<ul style="list-style-type: none"> • Use the Dice Roll game to create numbers less than 1000 then add/subtract the numbers using various strategies.
<p>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. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.</p>	<ul style="list-style-type: none"> • Use pattern blocks to recognize and draw shapes having a specified number of attributes.
<p>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.</p>	<ul style="list-style-type: none"> • The class will create a line plot using the lengths of their hands.
<p>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 problems⁴ using information presented in a bar graph.</p>	<ul style="list-style-type: none"> • Students will graph the results of a class poll about favorite foods on a picture graph and/or bar graph.
<p>2.G.A.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.</p>	<ul style="list-style-type: none"> • Students will separate a rectangle into rows and columns using same-size pattern block squares then count to find the total number.

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.	<ul style="list-style-type: none"> • Students will work in teams to separate circles and rectangles into equal parts, then describe the parts using words such as halves, thirds, etc.
2.OA.2 Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	<ul style="list-style-type: none"> • Students will take weekly timed math drills to practice fluently adding and subtracting within 20.
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.	<ul style="list-style-type: none"> • Students will complete a math puzzle by fluently adding and subtracting numbers within 100 using various strategies.
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Accommodations & Modifications

Special Education Students, 504 students, English Language Learners, Students at-Risk Based on Students' Individual Needs

Time/General	Processing	Comprehension
<ul style="list-style-type: none"> • Allow extra time • Repeat and clarify directions • Provide breaks in between tasks • Have student verbalize directions • Provide timelines/due dates for reports and projects 	<ul style="list-style-type: none"> • Provide extra response time • Have student verbalize steps • Repeat directions • Provide small group instruction • Include partner work 	<ul style="list-style-type: none"> • Provide reading material on student's level • Have student underline important points • Assist student on how to use context clues to identify words/phrases • Ensure short manageable tasks

Tests/Quizzes/Grading	Behavior/Attention	Organization
<ul style="list-style-type: none"> • Provide extended time • Provide study guides • Limit number of responses 	<ul style="list-style-type: none"> • Establish classroom rules • Write a contract with the student specifying expected behaviors • Provide preferential seating • Re-focus student as needed • Reinforce student for staying on task 	<ul style="list-style-type: none"> • Monitor the student and provide reinforcement of directions • Verify the accurateness of homework assignments • Display a written agenda

ELL, Enrichment, Gifted & Talented Strategies

Accommodations Based on Students' Individual Needs

ELL Strategies

- Provide explicit, systematic instruction in vocabulary.
- Ensure that ELLs have ample opportunities to talk with both adults and peers and provide ongoing feedback and encouragement.
- Expose ELLs to rich language input.
- Scaffolding for ELLs language learning.
- Encourage continued L1 language development.
- Alphabet knowledge
- Phonological awareness
- Print awareness
- Design instruction that focuses on all of the foundational literacy skills.
- Recognize that many literacy skills can transfer across languages.
- English literacy development by helping ELLs make the connection between what they know in their first language and what they need to know in English.
- Graphic organizers
- Modified texts
- Modified assessments

- Written/audio instruction
- Shorter paragraph/essay length
- Homogeneously grouped by level

Accommodations Based on Students' Individual Needs:

Enrichment Strategies

- Evaluate vocabulary
- Elevate Text Complexity
- Incorporate inquiry based assignments and projects
- Extend curriculum
- Balance individual, small group and whole group instruction
- Provide tiered/multi-level activities
- Include purposeful learning centers
- Provide open-ended activities and projects
- Offer opportunities for heterogeneous grouping to work with age and social peers as well as homogeneous grouping to provide time to work with individual peers
- Provide pupils with experiences outside the 'regular' curriculum
- Alter the pace the student uses to cover regular curriculum in order to explore topics of interest in greater depth/breadth within their own grade level
- Require a higher quality of work than the norm for the given age group
- Promote higher level of thinking and making connections.
- Focus on process learning skills such as brainstorming, decision making and social skills
- Use supplementary materials in addition to the normal range of resources.
- Encourage peer to peer mentoring
- Integrate cross-curricular lessons
- Incorporate real-world problem solving activities
- Facilitate student-led questioning and discussions

Gifted & Talented Strategies

- More elaborate, complex, and in-depth study of major ideas, problems, and themes that integrate knowledge within and across systems of thought.
- Development and application of productive thinking skills to enable students to reconceptualize existing knowledge and/or generate new knowledge.
- Explore constantly changing knowledge and information and develop the attitude that knowledge is worth pursuing in an open world.
- Encourage exposure to, selection, and use of appropriate and specialized resources.
- Promote self-initiated and self-directed learning and growth.
- Provide for the development of self-understanding and the understanding of one's relationship to persons, societal institutions, nature, and culture.
- Flexible pacing
- Use of more advanced or complex concepts, abstractions, and materials
- Encourage students to move through content areas at their own pace. If they master a particular unit, they need to be provided with more advanced learning activities, not more of the same activity.
- Questions that require a higher level of response and/or open-ended questions that stimulate inquiry, active exploration, and discovery.
- Encourage students to think about subjects in more abstract and complex ways
- Activity selection based on student interests, that encourage self-directed learning
- Group interaction and simulations
- Guided self-management
- Encourage students to demonstrate what they have learned in a wide variety of forms that reflect both knowledge and the ability to manipulate ideas.
- Engage students in active problem-finding and problem-solving activities and research.
- Provide students opportunities for making connections within and across systems of knowledge by focusing on issues, themes, and ideas.