

**Long Beach Island School District
Mathematics Curriculum Guide: Second Grade**

Original Adoption:	August 2024
Created by:	Ocean County Curriculum Consortium
Revised on:	December 2024
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Revised on:	August 2026
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Long Beach Island School District Curriculum	
Content Area: Mathematics	
Course Title: Mathematics	Grade Level: 2
Operations and Algebraic Thinking	80 days
Number and Operations in Base Ten	40 days
Measurement	30 days
Data	15 days
Geometry	15 days

Introduction

Effective mathematics education provides students with a balanced instructional program. In such a program, students become proficient in basic computational skills and procedures, develop conceptual understandings, and become skilled at problem solving. Standards-based mathematics instruction starts with basic material and increases in scope and content as the years progress. It is like an inverted pyramid, with the entire weight of the developing subject, including readiness for algebra, resting on the foundation built in the early grades.

During the school year the second grade teachers will provide effective mathematics instruction with a balanced instructional program. The instruction will include the whole group, centers/stations, both independent and/or teacher-led, along with Multilingual Learner with technology and student pairing of learned concepts. In such a program, students become proficient in basic computational skills and procedures, develop conceptual understandings, and become skilled at problem solving.

The curriculum is aligned to the NJSLS for Mathematics. Activities outlined in this curriculum infuse the Standards for Mathematical Practice, and guidance is provided for supporting all students including multilingual learners (through WIDA language expectations) in developing mathematical thinking and problem-solving skills.

In Grade 2, instruction focuses broadly on four critical areas:

1. Extending understanding of base-ten notation;
2. Developing accuracy and efficiency with addition and subtraction;
3. Using standard units of measure; and
4. Describing and analyzing shapes

Alignment with State Mandates:

The following colors are used throughout this document to indicate areas in which the curriculum is aligned with the following NJSA requirements:

Holocaust and genocides (N.J.S.A. 18A:35-28)

History and contributions of African-Americans (Amistad Law) (N.J.S.A. 18A:35-4.43)

Highlight and promote diversity and inclusion (Diversity & Inclusion Law) (N.J.S.A. 18A:35-4.36a)

History of disabled and LGBT persons included in middle and high school curriculum (Section 18A:35-4.35)

Climate Change - to prepare students to understand how and why climate change happens, the impact it has on our local and global communities and to act in informed and sustainable ways. Please click here [New Jersey Climate Education Hub](#) for specific examples.

*WIDA English Language Development Standards (N.J.S.A. 18A:35-15 to 26)

***WIDA English Language Development Standard 3** [WIDA English Language Development Standards Framework, 2020 Edition](#)

“New Jersey remains committed to supporting multilingual learners through policies and practices that promote access, equity, and academic success. The English Language Development Standards provide a framework for ensuring that multilingual learners receive the instruction and support necessary to develop English language proficiency while meeting the expectations of the New Jersey Student Learning Standards. Implementation of these standards across all content areas supports inclusive learning environments and advances New Jersey’s commitment to preparing all students for success beyond graduation. The English Language Development Standards are a shared responsibility across all content areas and support inclusive and equitable learning environments. The English Language Development standards are a foundational component of standards-aligned instruction, guiding educators in designing learning experiences that make the NJSLS accessible to all students. The English Language Development Standards are designed to be implemented by all educators who work with multilingual learners. Classroom teachers, ESL and bilingual educators, specialists, and administrators share responsibility for ensuring that multilingual learners receive appropriate linguistic and academic support. Educators are encouraged to use these resources alongside the full framework when planning instruction, identifying language expectations, and designing opportunities for multilingual learners to engage meaningfully with grade-level content. ”

Mathematical Practices Guidance and WIDA Language Expectations

“The Standards for Mathematical Practice in the New Jersey Student Learning Standards-Mathematics (NJSLS - Mathematics: [2023 Standards for Mathematical Practice](#)) describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.” The table below provides suggestions and strategies along with WIDA Language Expectations for supporting students in developing mathematical thinking and problem-solving skills.

Math Practice	Guidance for Developing Mathematical Thinking	WIDA Language Expectation Focus
Make sense of problems and persevere in solving them	Understanding the problem: ● Explain the main problem and the given facts in your own words. ● State what you need to find and notice about the details. ● Describe how the numbers or items connect to each other. Planning and Strategy ● List what you already tried and steps used so far. ● Think of different ways to organize or show the information. ● Find other similar problems to help you get started. Checking and Changing ● Name the steps you are most confident with. ● Decide what to change or try next.	Explain/Inform: Describe solution pathways and unpack meaning from a problem statement.
Reason abstractly and quantitatively	Quantities and Meanings ● Understand what the numbers represent and their relationships to each other (ex. How is ___ related to ___?) ● Understand visual or written signs that stand for math ideas. Methods and Properties ● Explain the math rules used to work out an answer. ● Explain why a specific tool or step was used. ● Explain whether a different rule or operation could work instead.	Explain: Relate abstract symbols, quantities, and numerical expressions to real-world contexts

Construct viable arguments and critique the reasoning of others	Evidence ● Explain the evidence that supports your answer. ● Explain how you can prove... ● Explain how you know what the problem was asking. ● Explain what didn't work and why ● Show a counter example.	Argue: Justify mathematical solutions, compare reasoning methods, and respectfully challenge peers' claims.
Model with mathematics	Modeling ● Construct a model to represent the problem. ● Explain how you can represent the quantities. ● Create an equation or expression that matches the diagram, chart, or table. ● Explain what formula might apply to the problem.	Inform/Explain: Represent mathematical relationships visually, contextually, or via equations and diagrams.
Use appropriate tools strategically	Tools ● Describe tools that can be used. ● Describe what information you have. ● Estimate. ● Determine which tool would be most helpful. ● Describe what a _____ can show that _____ may not.	Inform: Describe the choice of tools (such as graphs, calculators, or manipulatives) and how they support calculations.
Attend to precision	Precision ● Communicate math terms being used. ● Explain how your solution answers the problem ● Explain how you show the meaning of the quantities. ● Explain what symbols are important. ● Explain how you could test your solution to see if it answers the problem.	Inform: Communicate precise mathematical vocabulary, units of measure, and clear labels.
Look for and make use of	Structure ● Describe observations/noticings. ● Describe patterns you find.	Explain: Describe patterns, operational properties, or structural

structure	• Describe what can be eliminated. • Describe how this relates to ... • Explain how this connects to other math concepts.	compositions within expressions or shapes.
Look for and express regularity in repeated reasoning	• Describe what you notice. • Describe trends or rules for • Explain how you can prove... • Predict or explain to support patterns.	Explain: Generalize repeating processes and describe trends or rules using consistent language structures.

Unit: Operations and Algebraic Thinking	Duration: 80 days
Standards/Learning Targets	
Focus Standards (Major Standards)	
New Jersey Student Learning Standards integrated with WIDA Standards: ● 2.OA.A.1 Represent and solve problems involving addition and subtraction. ● 2.OA.B.2 With accuracy and efficiency, add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers. ● 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. ● ELD-MA.2-3.Explain.Interpretive ● Interpret mathematical explanations by ● Identifying concept or entity ● Analyzing plan for problem-solving steps ● Evaluating simple pattern or structure ● ELD-MA.2-3.Explain.Expressive- Construct mathematical explanations that ● Introduce concept or entity ● Describe solution and steps used to solve problem with others ● State reasoning used to generate solution ● 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. ● 2.OA.A Represent and solve problems involving addition and subtraction ● 2.OA.B Add and Subtract within 20	
Supporting and Additional Standards	
● Science- science experiments, manipulate data, sizes of the planets, measuring plant growth, develop knowledge of temperature and weather patterns ○ K-2- ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. ○ ESS3.C: Human Impacts on Earth Systems: Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. ● Social Studies- map skills, geography, scale models	

- **6.1.4.B.2** Use physical and political maps to explain how the location and spatial relationship of places in New Jersey, the United States, and other areas, worldwide, have contributed to cultural diffusion and economic interdependence.
- **ELA-** open ended questions, relevant read-alouds related to math are used to introduce and reinforce math concepts
 - **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.

Computer Science & Design Thinking

- **8.1.2.DA.1:** Collect and present data including climate change data, in various visual formats
- **8.1.2.DA.3:** Identify and describe the patterns in data visualizations.
- **8.1.2.AP.1:** Model daily processes by creating and following algorithms to complete tasks.
- **8.2.2.ED.2:** Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
- **8.2.2.ED.3:** Select and use appropriate tools and materials to build a product using the design process

Career Readiness, Life Literacies & Key Skills

- **9.1.2.CR.1:** Recognize ways to volunteer in the classroom, school and community.
- **9.1.2.PB.2:** Explain why an individual would choose to save money.
- **9.4.2.CI.2:** Demonstrate originality and inventiveness in work (e.g. 1.3A.2CR1a).
- **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).
- **9.4.2.TL.5:** Describe the difference between real and virtual experiences.

Evidence of Student Learning

Formative Tasks:

- Cooperative group learning
- Exit slips
- Analysis of student work
- Teacher observations
- Self-reflection
- Math journals

Alternative Assessments:

- Performance Tasks
- Student created models
- Written/verbal explanations
- Peer assessment
- Self-assessment

Summative Assessments:

- Unit Review Assessments
- Unit Associated tests & quizzes
- Extension Projects
- Performance Tasks
 - Students act as "Math Detectives." They receive a "Case File" containing a multi-step math story about a baker missing some cupcakes. Detectives must create a visual model of the mystery, write the matching equations, and record a "Case Report" explaining how they tracked down the final answer.

WIDA-Aligned Evaluative Criteria

- **Mathematical Accuracy:** Writes correct equations and calculates the accurate sum or difference.
- **Discourse Dimension (Organization):** Explains the steps of the problem in chronological order.
- **Sentence Dimension (Grammar):** Uses past-tense action verbs and conditional clauses (*"Since she gave away 15, I had to subtract"*).
- **Word Dimension (Vocabulary):** Employs precise operational words (*sum, difference, total, remaining, equation*) instead of just "plus" or "minus."

Benchmark Assessments:

- District wide common benchmark assessments

Knowledge and Skills**Content****Unit Essential Questions:****Skills**

Students will be able to...

Math Essential Question: How do we know whether to add or subtract when solving a real-world story?

Language Essential Question: What clues in a story help us explain our math choices?

Topic 1: Fluently Add and Subtract within 100

- What are strategies for finding addition and subtraction facts?

Topic 2: Working With Equal Groups

- How can you show even and odd numbers?
- How do arrays relate to repeated addition?

Topic 3: Add Within 100 Using Strategies

- What are strategies for adding numbers to 100?

Topic 4: Fluently Add Within 100

- What are strategies for adding numbers to 100?

Topic 5: Subtract Within 100 Using Strategies

- What are strategies for subtracting numbers to 100?

Topic 6: Fluently Subtract Within 100

- What are strategies for subtracting numbers to 100?

Topic 7: More Solving Problems Involving Addition and Subtraction

- How can you solve word problems that use adding or subtracting?

Enduring Understandings

Students will know: "I can..."

- I can add and subtract using a hundreds chart and/or a number line.
- I can rewrite addition problems and find the sum and rewrite subtraction problems to find the difference.
- I can break apart an addend to make a new group of 10 to solve addition equations.
- I can break apart 1s to make a 10s number when you subtract.
- I can represent and record addition and subtraction of 2 digit numbers with and without regrouping.
- I can use addition and subtraction to find the difference using a number line.
- I can find the sums of 3 and 4 two digit numbers by using addition strategies and properties.
- I can represent addition and subtraction word problems using bar models and equations.
- I can write an equation to solve addition and subtraction word problems.
- I can solve multi-step addition and subtraction word problems.
- I can use doubles facts to solve an addition problem.
- I can show examples of related addition and subtraction facts.
- I can make 10 to find sums.
- I can use a number line and 10s facts to find differences.
- I can find the sum of three numbers.
- I can write an equation to show an even number as a sum of two equal addends.
- I can use tools or drawings to show equal groups of objects and find how many objects in all.
- I can use an addition equation to find a total number of

- Add and subtract using a Hundreds Chart
- Rewrite addition and subtraction problems to find the difference
- Break apart and make new groups to solve equations
- Represent and record addition and subtraction of 2 digit numbers with and without regrouping
- Record the steps when adding and subtracting 2 digit numbers
- Use addition and subtraction to find the difference using a number line
- Find the sums of 3 and 4 two digit numbers by using addition strategies and properties
- Represent addition and subtraction word problems using bar models and equations
- Write an equation to solve addition and subtraction word problems
- Solve multi-step addition and subtraction word problems
- Use doubles facts to add
- Develop fluency with addition & subtraction using mental strategies and properties
- Relate addition and subtraction
- Use the “Make a Ten Strategy” to add

Math Understanding: Word problems are mathematical stories where actions (like joining, separating, or comparing) dictate the operations needed.

Language Understanding: Solving problems requires translating everyday narrative language into mathematical symbols and structures.

objects in groups in various ways.

Content Objective: Students will solve two-step word problems within 100 using equations with a symbol for the unknown number.

Language Objective: Students will **explain** the action of the word problem (e.g., combining, losing, sharing) and **argue** why a specific operation (+ or -) is required using sequential and conditional language

Instructional Plan	
Suggested Activities	Resources
Suggested Activities/Resources: • Math workstations with open-ended addition and subtraction tasks • Addition and Subtraction games • Collections of materials • Manipulatives • Activities to work on equal grouping As appropriate: • Boom Cards • VB-Mapp • ABLLS-R • Connected Math Concepts • Prodigy • SplashLearn • IXL • Xtra math Language Demands Students will explain how they solved a word problem using comparative language and conditional sentence frames.	Literature: Varied Levels of Texts- • <i>Comic Books for Sale</i>, Michael S • <i>Party Plans</i>, Joan Frese • <i>Butterfly Farm</i>, Harcourt Publishers • <i>Natures Numbers</i>, Amy Lake • <i>Nature Walk</i>, April Reign • <i>Doubles on the Farm</i>, Joan Frese • <i>Game Time</i>, Harcourt Publishers • <i>Benny, Bessie, and the Blueberries</i>, Flora Perez • <i>Wow! Fluffo Sure Can Eat</i>, Luis Alonso • <i>What do you Like?</i>, Harcourt Publishers • <i>Building a Mini-park</i>, Harcourt Publishers • <i>Square Fair</i>, Harcourt Publishers • <i>Dave and Boots</i>, Harcourt Publishers • <i>The Number Machine</i>, Harcourt Publishers • <i>Time to Take a Trip</i>, Jennifer Marrewa
Suggested Options for Differentiation	
Multilingual Learners: • Differentiate instruction and classroom assessment as guided by the WIDA English Language Development Standards Framework, 2020 Edition. • Use instructional strategies that scaffold learning for MLs and use “Can Do Descriptors” Can Do Descriptors KE Y USES EDITION Grades 2-3 • Follow the Individualized Educational Plans (IEP) for ML Special Education (SE) students.	

- Encourage the ML student to use oral language. Discussions, especially pair-work, allow students to expand language usage in listening and speaking.
- Allow MLs to clarify ideas, make sense of their previous statements and elaborate on their views with specific explanations.
- Use wait time for MLs to express their ideas in class.
- Graphic organizers, color-coded anchor charts, word walls with visual imagery, and breakdown techniques for decoding dense mathematical word problems
- Structured talk protocols (Think-Pair-Share, Numbered Talks) and word banks
- Simplify written and verbal instructions
- Provide written directions with models and diagrams when possible
- Build in more group work to allow Multilingual Learner students to interact and communicate with peers
- Provide vocabulary ahead of time
- Use sentence frames to give students practice with academic language
- Pre-teach as often as possible- share videos, articles, vocabulary etc. with Multilingual Learner students prior to use in class
- Utilize visual charts/cues
- Highlight key words
- Provide manipulatives
- Frequently check for understanding

Special Education//Students with Disabilities:

- Follow specific students accommodations and modifications as listed in individual student IEP or 504 plan
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
- Incorporate small group instruction
- Utilize visual charts/cues
- Facilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation

504 Plan:

- Behavior management support.
- Adjusted class schedules or grading.
- Extended time on tests and assignments.
- Verbal, visual, or technology aids.

Gifted and Talented:

- Differentiated assignments/projects/assessments
- Differentiate learning pace using curriculum acceleration
- Curriculum compacting
- Open ended/abstract questions to activate higher level thinking
- Alternative modes of communication
- Student developed extension activities
- Plan self directed inquiry
- Student created rubrics
- Opportunities to push assessment/activity boundaries
- Self centered curriculum allowing for student choice

Students In Need of Academic Support:

- Ensure child has access to all appropriate academic resources both in school and at home
- Provide structure and adhere to a consistent daily routine with clear and concise rules
- Facilitate successful experiences
- Provide tutoring if needed
- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
- Offer encouragement and understanding
- Allow students to have personal possessions and property in school
- Give choice to provide a sense of control

Economically Disadvantaged:

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input

Culturally Diverse:

- Involve families in student learning

- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Teach study skills
- Provided students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials Visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Integrate the arts into learning activities

Climate Change:

- Students may solve two-step word problems involving a climate change related issue in their school, such as food waste, recycling, reusing and/or reducing the consumption of goods. They may add and subtract within 100 while using drawing or equations to represent the climate change related issue.
- Measure daily outdoor temperature changes using a simple classroom thermometer with whole numbers.
- Create simple addition and subtraction math word problems centered around recycling counts or saving water
- Students can explore how everyday energy choices affect the Earth's climate. They will apply 2nd-grade addition and subtraction strategies (within 100) to solve one- and two-step word problems focused on real-world climate solutions, such as planting trees, saving water, and reducing electricity use
- [Math](#) Precipitation Towers
- [Teaching Climate Change To Grades K-2](#)

Core Instructional and Supplemental Materials

- “enVisions Mathematics” Textbook
- Math workstations with open-ended addition and subtraction tasks
- Addition and Subtraction games
- Collections of materials

Literature:

Varied Levels of Texts-

- *Comic Books for Sale*, Michael S. Multi-Lingual Learners
- *Party Plans*, Joan Freese
- *Butterfly Farm*, Harcourt Publishers
- *Natures Numbers*, Amy Lake

● Manipulatives ● Activities to work on equal grouping As appropriate: ● Boom Cards ● VB-Mapp ● ABLLS-R ● Connected Math Concepts ● Prodigy ● SplashLearn ● IXL	● <i>Nature Walk</i>, April Reign ● <i>Doubles on the Farm</i>, Joan Frese ● <i>Game Time</i>, Harcourt Publishers ● <i>Benny, Bessie, and the Blueberries</i>, Flora Perez ● <i>Wow! Fluffo Sure Can Eat</i>, Luis Alonso ● <i>What do you Like?</i>, Harcourt Publishers ● <i>Building a Mini-park</i>, Harcourt Publishers ● <i>Square Fair</i>, Harcourt Publishers ● <i>Dave and Boots</i>, Harcourt Publishers ● <i>The Number Machine</i>, Harcourt Publishers ● <i>Time to Take a Trip</i>, Jennifer Marrewa
Teacher Notes:	

Unit: Number and Operations in Base Ten	Duration: 40 Days
Standards/Learning Targets	
Focus Standards (Major Standards)	
New Jersey Student Learning Standards integrated with WIDA Standards: ● 2.NBT.A.1a 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.-100 can be thought of as a bundle of ten tens — called a “hundred.” ● 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). ● 2.NBT.A.2 Count within 1000; skip-count by 5s, 10s, and 100s. ● 2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form ● 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.

- **2.NBT.B.5** With accuracy and efficiency, add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
- **2.NBT.B.6** Add up to four two-digit numbers using strategies based on place value and properties of operations.
- **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
- **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.
- **2.NBT.B.9** Explain why addition and subtraction strategies work, using place value and the properties of operations.
- **ELD-SI.K-3.Explain-** Share initial thinking with others
- **ELD-MA.2-3.Argue.Expressive** Construct mathematics arguments that • Create conjecture using definitions • Generalize commonalities across cases • Justify conclusion steps and strategies in simple patterns • Identify and respond to others' arguments
- **2.NBT. A** Understanding Place Value
- **2.NBT.B** Understand place value understanding and properties of operations to add and subtract

Supporting and Additional Standards

Primary Interdisciplinary Connections:

- **Science-** science experiments, manipulate data, sizes of the planets, measuring plant growth, develop knowledge of temperature and weather patterns
 - **K-2- ETS1-1** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- **Social Studies-** map skills, geography, scale models
 - **6.1.4.B.2** Use physical and political maps to explain how the location and spatial relationship of places in New Jersey, the United States, and other areas, worldwide, have contributed to cultural diffusion and economic interdependence.
- **ELA-** open ended questions, relevant read-alouds related to math are used to introduce and reinforce math concepts
 - **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.

Computer Science & Design Thinking

- **8.1.2.DA.1:** Collect and present data including climate change data, in various visual formats
- **8.1.2.DA.3:** Identify and describe the patterns in data visualizations.
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- **8.2.2.ED.2:** Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
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Career Readiness, Life Literacies & Key Skills:

- **9.1.2.CR.1:** Recognize ways to volunteer in the classroom, school and community.
- **9.1.2.PB.2:** Explain why an individual would choose to save money.
- **9.4.2.CI.2:** Demonstrate originality and inventiveness in work (e.g. 1.3A.2CR1a).
- **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).
- **9.4.2.TL.5:** Describe the difference between real and virtual experiences.

Evidence of Student Learning

Formative Tasks:

- Cooperative group learning
- Exit slips
- Analysis of student work
- Teacher observations
- Self-reflection
- Math journals

Alternative Assessments:

- Performance Tasks
- Student created models
- Written/verbal explanations
- Peer assessment
- Self-assessment

Summative Assessments:

- Unit Review Assessments
- Unit associated tests & quizzes
- Extension Projects
- Performance Tasks

Benchmark Assessments:

- District wide common benchmark assessments

Knowledge and Skills

Content	Skills
Unit Essential Questions: How does the position of a digit change its value? Language Essential Question: How do we use words to prove that one number is bigger than another? Topic 9: Numbers to 1,000 - How can you count, read, and show numbers to 1,000? Topic 10: Add Within 1,000 Using Models and Strategies - What are strategies for adding numbers to 1,000? Topic 11: Subtract Within 1,000 Using Models and Strategies - What are strategies for subtracting numbers to 1,000? Enduring Understandings <i>Students will know: “I can...”</i> - Group Tens as Hundreds - Understand, Represent Three-Digit Numbers - Place Value to 1,000 - Use Expanded Form and Number Names to show different ways to show numbers - Count within 1,000 - Add and Subtract 10 or 100 - Identify and Extend Number Patterns - Compare Three-Digit Numbers using symbols $<$, $>$, and $=$. Language Understanding: Mathematical arguments	<i>Students will be able to...</i> - I can count within 1000 by ones, 5s, 10s, and 100s beginning at any multiple of 1, 5, 10 or 100. - I can use mental strategies to add and subtract fluently within 10. - I can use properties of operations to help with addition and subtraction. - I can use strategies to add and subtract within 50. - I can add and subtract 10 or 100 from a 3 digit number. - I can read numbers to 1000. I know which number you say first. - I can write numbers to 1000. I know which number you write first. - I can write and show the value of a 3 digit number 2 different ways. - I can compare three digit numbers. - I can draw quick pictures or break apart addends to add 100s, 10s and 1s. - I can represent and solve 3 digit addition problems with regrouping. - I can subtract a 3 digit number with and without regrouping using a concrete or visual model. - I can regroup 100s and 10s to subtract three digit numbers with 0s. - I can regroup to solve addition and subtraction problems with three digit numbers. Language Objective (Students will know/be able to): Argue which number is larger in speech and writing using place value vocabulary (hundreds, tens, ones, greater than, less than) and conditional sentence frames.

require precise words and comparative structures to be convincing.

Instructional Plan

Suggested Activities

Suggested Activities/Resources:

- “enVision Mathematics” textbook
- Math workstations with open-ended addition and subtraction tasks
- Addition and Subtraction games
- Place Value focused activities
- Collections of materials
- Manipulatives

As appropriate:

- Boom Cards
- VB-Mapp
- ABLLS-R
- Connected Math Concepts
- Prodigy
- SplashLearn
- IXL

Language Demands

Key Language Use (KLU): Argue (Justifying why one number is greater than or less than another)

Interpret mathematical explanations by • Identifying concept or entity • Analyzing plan for problem-solving steps • Evaluating simple pattern or structure

Resources

Literature:

Varied Levels of Text-

- *Margo’s Lights*, Ricky Santos
- *Doubles on the Farm*, Joan Freese
- *Game Time*, Harcourt Publishers
- *Benny, Bessie, and the Blueberries*, Flora Perez
- *Nature’s Numbers*, Amy Lake
- *Butterfly Farm*, Harcourt Publishers
- *Comic Books for Sale*, Michael S
- *Party Plans*, Joan Freese
- *The If Game*, Harcourt Publishers
- *The Bug Boys*, Celia Salerno
- *The Roadside Stand*, Asa Endo
- *Feast for Ten*, Cathryn Faldw
- *Moja Means One*, Muriel Feelings
- *Even Steven and Odd Todd*
- *Ten Ways to Count to Ten*

Construct mathematical explanations that

- Introduce concept or entity
- Describe solution and steps used to solve problem with others
- State reasoning used to generate solution

- **Vocabulary:** Digit, value, place, hundreds, tens, ones, greater than, less than, equal to.
- **Language Structures:** "___ is greater than ___ because..." or "Even though ___ has a 9 in the ones place, it is smaller because..."

Suggested Options for Differentiation

Multi-Language Learners:

- Differentiate instruction and classroom assessment as guided by the [WIDA English Language Development Standards Framework, 2020 Edition](#).
- Use instructional strategies that scaffold learning for MLs and use “Can Do Descriptors” [Can Do Descriptors KE Y USES EDITION Grades 2-3](#)
- Follow the Individualized Educational Plans (IEP) for ML Special Education (SE) students.
- Encourage the ML student to use oral language. Discussions, especially pair-work, allow students to expand language usage in listening and speaking.
- Allow MLs to clarify ideas, make sense of their previous statements and elaborate on their views with specific explanations.
- Use wait time for MLs to express their ideas in class.
- Graphic organizers, color-coded anchor charts, word walls with visual imagery, and breakdown techniques for decoding dense mathematical word problems
- Structured talk protocols (Think-Pair-Share, Numbered Talks) and word banks
- Simplify written and verbal instructions
- Provide written directions with models and diagrams when possible
- Build in more group work to allow Multilingual Learner students to interact and communicate with peers
- Provide vocabulary ahead of time
- Use sentence frames to give students practice with academic language
- Pre-teach as often as possible- share videos, articles, vocabulary etc. with Multilingual Learner students prior to use in class

- Utilize visual charts/cues
- Highlight key words
- Provide manipulatives
- Frequently check for understanding

Special Education//Students with Disabilities:

- Follow specific students accommodations and modifications as listed in individual student IEP or 504 plan
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
- Incorporate small group instruction
- Utilize visual charts/cues
- Facilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation

504 Plan:

- Behavior management support.
- Adjusted class schedules or grading.
- Extended time on tests and assignments.
- Verbal, visual, or technology aids.

Gifted and Talented:

- Differentiated assignments/projects/assessments
- Differentiate learning pace using curriculum acceleration
- Curriculum compacting
- Open ended/abstract questions to activate higher level thinking
- Alternative modes of communication
- Student developed extension activities
- Plan self directed inquiry
- Student created rubrics
- Opportunities to push assessment/activity boundaries
- Self centered curriculum allowing for student choice

Students In Need of Academic Support:

- Ensure child has access to all appropriate academic resources both in school and at home
- Provide structure and adhere to a consistent daily routine with clear and concise rules

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- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
- Offer encouragement and understanding
- Allow students to have personal possessions and property in school
- Give choice to provide a sense of control

Economically Disadvantaged:

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input

Culturally Diverse:

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Teach study skills
- Provided students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials Visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education

- Communicate high expectations for the success of all students - Integrate the arts into learning activities	
Core Instructional and Supplemental Materials “enVision Mathematics” textbook - Math workstations with open-ended addition and subtraction tasks - Addition and Subtraction games - Place Value focused activities - Collections of materials - Manipulatives As appropriate: - ABLLS-R - Prodigy - SplashLearn Grade 2 Math - Starfall XtraMath - IXL	Literature: Varied Levels of Text- <i>Margo’s Lights</i>, Ricky Santos <i>Doubles on the Farm</i>, Joan Freese <i>Game Time</i>, Harcourt Publishers <i>Benny, Bessie, and the Blueberries</i>, Flora Perez <i>Nature’s Numbers</i>, Amy Lake <i>Butterfly Farm</i>, Harcourt Publishers <i>Comic Books for Sale</i>, Michael S <i>Party Plans</i>, Joan Freese <i>The If Game</i>, Harcourt Publishers <i>The Bug Boys</i>, Celia Salerno <i>The Roadside Stand</i>, Asa Endo <i>Feast for Ten</i>, Cathryn Faldw <i>Moja Means One</i>, Muriel Feelings
Teacher Notes:	

Unit: Measurement	Duration: 30 days
Standards/Learning Targets	
Focus Standards (Major Standards)	
New Jersey Student Learning Standards integrated with WIDA Standards:	

- **2.M.A.1** Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
- **2.M.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.
- **2.M.A.3** Estimate lengths using units of inches, feet, centimeters, and meters.
- **2.M.A.4** Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
- **ELD-MA.2-3.Argue.Expressive** Construct mathematics arguments that ● Create conjecture using definitions ● Generalize commonalities across cases ● Justify conclusion steps and strategies in simple patterns ● Identify and respond to others' arguments
- **2.M.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.
- **2.M.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.
- **2.M.C.7** Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
- **2.M.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?
- **2.M.A** Measure and estimate lengths in standard units
- **2.M.B** Relate addition and subtraction to length
- **ELD-SI.K-3.Explain-** Share initial thinking with others

Supporting and Additional Standards

Primary Interdisciplinary Connections: Infused within the unit are connections to the NJSLS for Mathematics, Language Arts Literacy

Science- science experiments, manipulate data, sizes of the planets, measuring plant growth, develop knowledge of temperature and weather patterns

- **K-2- ETS1-1** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

Social Studies- map skills, geography, scale models

- **6.1.4.B.2** Use physical and political maps to explain how the location and spatial relationship of places in New Jersey, the United States, and other areas, worldwide, have contributed to cultural diffusion and economic interdependence.

ELA- open ended questions, relevant read-alouds related to math are used to introduce and reinforce math concepts

- **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.

Computer Science & Design Thinking

- **8.1.2.DA.1:** Collect and present data including climate change data, in various visual formats
- **8.1.2.AP.1:** Model daily processes by creating and following algorithms to complete tasks.
- **8.2.2.ED.2:** Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
- **8.2.2.ED.3:** Select and use appropriate tools and materials to build a product using the design process

Career Readiness, Life Literacies & Key Skills:

- **9.1.2.CR.1:** Recognize ways to volunteer in the classroom, school and community.
- **9.1.2.PB.2:** Explain why an individual would choose to save money.
- **9.4.2.CI.2:** Demonstrate originality and inventiveness in work (e.g. 1.3A.2CR1a).
- **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).
- **9.4.2.TL.5:** Describe the difference between real and virtual experiences.

Evidence of Student Learning

Formative Tasks:

- Cooperative group learning
- Exit slips
- Analysis of student work
- Teacher observations
- Self-reflection
- Math journals

Alternative Assessments:

- Performance Tasks
- Student created models
- Written/verbal explanations
- Peer assessment
- Self-assessment

Summative Assessments: • Unit Review Assessments • Unit associated tests & quizzes • Extension Projects • Performance Tasks	Benchmark Assessments: • District wide common benchmark assessments
Knowledge and Skills	
Content	Skills
Unit Essential Questions: Math Essential Question: Why do we need standard units to measure things? Language Essential Question: How do we clearly explain a math rule to someone else? Topic 8: Work With Time and Money • How can you solve problems about counting money or telling time to the nearest 5 minutes? Topic 12: Measuring Length • What are ways to measure length? Topic 14: More Addition, Subtraction, and Length • How can you add and subtract lengths? Enduring Understandings <i>Students will know: “I can...”</i> • Describe and compare the attributes of three dimensional and two dimensional shapes	<i>Students will be able to...</i> • I can describe and compare the attributes of three dimensional and two dimensional shapes. • I can find, count and compare sides and angles in two dimensional shapes? • I can find the total number of colored tiles that will cover a rectangle. • I can find different attributes/characteristics that make a shape fit into a specific category. • I can use different ways to describe the shares of partitioned shapes. Content Objective: Students will measure the same object using inches and centimeters and record the difference. Language Objective: Students will explain why the centimeter measurement is a larger number than the inch measurement using cause-and-effect language (<i>because, so, if/then</i>)

- Find, count and compare sides and angles in two dimensional shapes
- Find the total number of colored tiles that will cover a rectangle
- Identify, name and draw equal shares of shapes as halves, thirds or fourths.
- Draw and color to show a half of, third of or fourth of a shape.
- Draw to show the same wholes, as equal shares, in two different ways.

Math Understanding: The smaller the unit of measure, the more units are needed to measure the object.

Language Understanding: Explaining a math relationship requires sequential words and cause-and-effect sentence structures

Key Language Use (KLU): Explain (Giving reasons for why measurement numbers change based on unit size)

Instructional Plan

Suggested Activities

Suggested Activities/Resources:

- Math workstations with open-ended addition and subtraction tasks
- Addition and Subtraction games
- Collections of materials
- Manipulatives

As appropriate:

- Boom Cards
- VB-Mapp

Resources

Literature:

Varied Levels of Text-

- *Miss B. 's Class Makes Tables and Graphs*
- *Inch by Inch by Leo Lionni*
- *Time to Play*
- *How Tall How Short*
- *Treasure Hunts*
- *The King's Foot*

- ABLLS-R
- Connected Math Concepts
- Prodigy
- SplashLearn
- IXL
- XtraMath
- Starfall

Language Demands

vocabulary: Length, measure, estimate, unit, inch, centimeter, longer, shorter.

Language Structures: Sequential transitions (*First, Next, Finally*) and causal structures (*"It took more _____ because _____ is smaller."*)

Suggested Options for Differentiation

Multi-Language Learners :

- Differentiate instruction and classroom assessment as guided by the [WIDA English Language Development Standards Framework, 2020 Edition](#).
- Use instructional strategies that scaffold learning for MLs and use “Can Do Descriptors” [Can Do Descriptors KE Y USES EDITION Grades 2-3](#)
- Follow the Individualized Educational Plans (IEP) for ML Special Education (SE) students.
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- Use wait time for MLs to express their ideas in class.
- Graphic organizers, color-coded anchor charts, word walls with visual imagery, and breakdown techniques for decoding dense mathematical word problems
- Structured talk protocols (Think-Pair-Share, Numbered Talks) and word banks
- Simplify written and verbal instructions
- Provide written directions with models and diagrams when possible

- Build in more group work to allow Multilingual Learner students to interact and communicate with peers
- Provide vocabulary ahead of time
- Use sentence frames to give students practice with academic language
- Pre-teach as often as possible- share videos, articles, vocabulary etc. with Multilingual Learner students prior to use in class
- Utilize visual charts/cues
- Highlight key words
- Provide manipulatives
- Frequently check for understanding

Special Education//Students with Disabilities:

- Follow specific students accommodations and modifications as listed in individual student IEP or 504 plan
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
- Incorporate small group instruction
- Utilize visual charts/cues
- Facilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation

504 Plan:

- Behavior management support.
- Adjusted class schedules or grading.
- Extended time on tests and assignments.
- Verbal, visual, or technology aids.

Gifted and Talented:

- Differentiated assignments/projects/assessments
- Differentiate learning pace using curriculum acceleration
- Curriculum compacting
- Open ended/abstract questions to activate higher level thinking
- Alternative modes of communication
- Student developed extension activities
- Plan self directed inquiry
- Student created rubrics
- Opportunities to push assessment/activity boundaries

- Self centered curriculum allowing for student choice

Students In Need of Academic Support:

- Ensure child has access to all appropriate academic resources both in school and at home
- Provide structure and adhere to a consistent daily routine with clear and concise rules
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- Provide tutoring if needed
- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
- Offer encouragement and understanding
- Allow students to have personal possessions and property in school
- Give choice to provide a sense of control

Economically Disadvantaged:

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input

Culturally Diverse:

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Teach study skills
- Provided students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor

- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials Visuals, graphs, pictures, maps

Core Instructional and Supplemental Materials

- “enVision Mathematics” textbook
- Math workstations with open-ended addition and subtraction tasks
- Addition and Subtraction games
- Collections of materials
- Manipulatives

As appropriate:

- Boom Cards
- VB-Mapp
- ABLIS-R
- Connected Math Concepts
- Prodigy
- SplashLearn
- Starfall
- XtraMath
- IXL

Literature:

Varied Levels of Text-

- *Miss B. 's Class Makes Tables and Graphs*
- *Inch by Inch* by Leo Lionni
- *Time to Play*
- *How Tall How Short*
- *Treasure Hunts*
- *The King's Foot*

Teacher Notes:

Unit: Data Literacy	Duration: 15 Days
Standards/Learning Targets	
Focus Standards (Major Standards)	

New Jersey Student Learning Standards integrated with WIDA Standards:

- **2.DL.A.1** Understand that people collect data to answer questions. Understand that data can vary.
- **2.DL.A.2** Identify what could count as data (e.g., visuals, sounds, numbers).
- **ELD-SI.K-3.Explain-** Share initial thinking with others
- **ELD-SI.K-3.Argue-** Ask questions about others' opinions ● Support own opinions with reasons ● Clarify and elaborate ideas based on feedback ● Defend change in one's own thinking ● Revise one's own opinions based on new information
- **2.DL.B.3** 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.
- **2.DL.B.4** 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.
- **2.DL.A** Understand concepts of data
- **2.DL.B** Represent and interpret data

Supporting and Additional Standards

Primary Interdisciplinary Connections:

- **Science-** science experiments, manipulate data, sizes of the planets, measuring plant growth, develop knowledge of temperature and weather patterns
 - **K-2- ETS1-1** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- **Social Studies-** map skills, geography, scale models
 - **6.1.4.B.2** Use physical and political maps to explain how the location and spatial relationship of places in New Jersey, the United States, and other areas, worldwide, have contributed to cultural diffusion and economic interdependence.
- **ELA-** open ended questions, relevant read-alouds related to math are used to introduce and reinforce math concepts
 - **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.

Computer Science & Design Thinking

- **8.1.2.DA.1:** Collect and present data including climate change data, in various visual formats
- **8.1.2.DA.3:** Identify and describe the patterns in data visualizations.
- **8.1.2.AP.1:** Model daily processes by creating and following algorithms to complete tasks.
- **8.2.2.ED.2:** Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
- **8.2.2.ED.3:** Select and use appropriate tools and materials to build a product using the design process

Career Readiness, Life Literacies & Key Skills:

Standard 9: Career Readiness, Life Literacies, and Key Skills

- **9.1.2.CR.1:** Recognize ways to volunteer in the classroom, school and community.
- **9.1.2.PB.2:** Explain why an individual would choose to save money.
- **9.4.2.CI.2:** Demonstrate originality and inventiveness in work (e.g. 1.3A.2CR1a).
- **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).
- **9.4.2.TL.5:** Describe the difference between real and virtual experiences.

Evidence of Student Learning

Formative Tasks:

- Cooperative group learning
- Exit slips
- Analysis of student work
- Teacher observations
- Self-reflection
- Math journals

Alternative Assessments:

- Performance Tasks
- Student created models
- Written/verbal explanations
- Peer assessment
- Self-assessment

Summative Assessments:

- Associated tests & quizzes
- Extension Projects
- Performance Tasks
 - **The Classroom Favorite Survey:** Students design a survey question with four choices, collect data from peers, construct a bar graph, and write an executive summary for the teacher

Benchmark Assessments:

- District wide common benchmark assessments

explaining which choice is the most popular, which is the least popular, and the exact difference between them.	
Knowledge and Skills	
Content	Skills
Unit Essential Questions: Essential Questions (Math): How do graphs help us see and understand information? Essential Questions (Language): How do we use precise language to tell the story behind numbers? Topic 15: Graphs and Data - How can line plots, bar graphs, and picture graphs be used to show data and answer questions? Enduring Understandings <i>Students will know: "I can..."</i> - Use a ruler to measure the length of an object to the nearest inch and centimeter and show the data on a line plot - Understand that people collect data to answer questions. - Understand that data can vary. - Identify what could count as data. - Draw a picture graph and a bar graph to represent a data set up to four categories. - The components of picture and bar graphs (titles, labels, scales).	<i>Students will be able to..</i> - I can use a ruler to measure the length of an object to the nearest inch and centimeter and show the data on a line plot. - I can collect data. - I can understand that data can vary. - I can use visuals, sounds or numbers to count as data. - I can use data to be taken apart, compared and presented in a bar graph. Acquisition (Language Objectives / WIDA Key Language Use: Inform & Explain) Students will be skilled at: Discourse: Speaking and writing sentences that compare two categories (e.g., "More students chose apples than bananas"). Sentence: Using conditional and comparative structures (e.g., "[Category A] has [Number] more/fewer votes than [Category B]"). Word: Utilizing academic language words (<i>total, most,</i>

• Math vocabulary: <i>data, survey, category, category total, bar graph, picture graph.</i> • Understandings (Math): Visual graphs organize data so it can be easily compared and analyzed. • Understandings (Language): Comparing data requires specific language structures (e.g., "more than," "fewer than") to prove a point	<i>least, fewer, difference).</i>
Instructional Plan	
Suggested Activities	Resources
Suggested Activities/Resources: • Math workstations with open-ended addition and subtraction tasks • Addition and Subtraction games • Collections of materials • Manipulatives As appropriate: • Boom Cards • VB-Mapp • ABLIS-R • Connected Math Concepts • Prodigy • SplashLearn • XtraMath • IXL	Literature: Varied Levels of Text- • <i>Miss B.'s Class Makes Tables and Graphs</i> • <i>Inch by Inch by Leo Lionni</i> • <i>Time to Play</i> • <i>How Tall How Short</i> • <i>Treasure Hunts</i> • <i>The King's Foot</i>
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- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Integrate the arts into learning activities

Climate Change

- Students may ask and answer questions about objects that may be reused, objects that may be recycled, and objects that must be placed in the trash. Students may organize used objects into those categories, and ask and answer questions about the total number of objects, how many are in each category, and how many more or fewer are in one category than in another.
- Temperature charts, nature journals tracking/counting/recording natural objects or seasonal data

Core Instructional and Supplemental Materials

- “enVision Mathematics” textbook
- Math workstations with open-ended addition and subtraction tasks
- Addition and Subtraction games
- Collections of materials

Literature:

Varied Levels of Text-

- *Miss B.’s Class Makes Tables and Graphs*
- *Inch by Inch by Leo Lionni*
- *Time to Play*
- *How Tall How Short*

● Manipulatives As appropriate: ● Boom Cards ● VB-Mapp ● ABLLS-R ● Connected Math Concepts ● Prodigy ● SplashLearn ● Starfall ● IXL ● XtraMath	● <i>Treasure Hunts</i> ● <i>The King's Foot</i>
Teacher Notes:	

Unit: Geometry	Duration: 15 Days
Standards/Learning Targets	
Focus Standards (Major Standards)	
New Jersey Student Learning Standards integrated with WIDA Standards:	

- **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.
- **ELD-MA.2-3.Explain.Interpretive** Interpret mathematical explanations by ● Identifying concept or entity ● Analyzing plan for problem-solving steps ● Evaluating simple pattern or structure
- **ELD-MA.2-3.Explain.Expressive** Construct mathematical explanations that ● Introduce concept or entity ● Describe solution and steps used to solve problem with others ● State reasoning used to generate solutions
- **2.G.A.2** Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
- **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. For example, students partition a rectangle (i.e., the whole) into three equal shares, identify each of the shares as a ‘third’ and describe the rectangle as three ‘thirds’.
- **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.
- **2. G. A** Reason with shapes and their attributes
- **ELD-MA.2-3.Argue.Expressive** Construct mathematics arguments that ● Create conjecture using definitions ● Generalize commonalities across cases ● Justify conclusion steps and strategies in simple patterns ● Identify and respond to others’ arguments

Supporting and Additional Standards

Primary Interdisciplinary Connections:

- **Science-** science experiments, manipulate data, sizes of the planets, measuring plant growth, develop knowledge of temperature and weather patterns
 - **K-2- ETS1-1** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- **Social Studies-** map skills, geography, scale models
 - **6.1.4.B.2** Use physical and political maps to explain how the location and spatial relationship of places in New Jersey, the United States, and other areas, worldwide, have contributed to cultural diffusion and economic interdependence.
- **ELA-** open ended questions, relevant read-alouds related to math are used to introduce and reinforce math concepts
 - **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.

Computer Science & Design Thinking

- **8.1.2.DA.1:** Collect and present data including climate change data, in various visual formats
- **8.1.2.DA.3:** Identify and describe the patterns in data visualizations.
- **8.1.2.AP.1:** Model daily processes by creating and following algorithms to complete tasks.
- **8.2.2.ED.2:** Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
- **8.2.2.ED.3:** Select and use appropriate tools and materials to build a product using the design process

Career Readiness, Life Literacies & Key Skills:

- **9.1.2.CR.1:** Recognize ways to volunteer in the classroom, school and community.
- **9.1.2.PB.2:** Explain why an individual would choose to save money.
- **9.4.2.CI.2:** Demonstrate originality and inventiveness in work (e.g. 1.3A.2CR1a).
- **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).
- **9.4.2.TL.5:** Describe the difference between real and virtual experiences.

Evidence of Student Learning

Formative Tasks:

- Cooperative group learning
- Exit slips
- Analysis of student work
- Teacher observations
- Self-reflection
- Math journals

Alternative Assessments:

- Performance Tasks
- Student created models
- Written/verbal explanations
- Peer assessment
- Self-assessment

Summative Assessments:

- Unit Review Assessments
- Unit associated tests & quizzes
- Extension Projects
- Performance Tasks
 - Example:

Benchmark Assessments:

- District wide common benchmark assessments

Students act as "Tool Inspectors" for a toy factory. They must measure a toy box using inches and centimeters, then write a short "Inspector Note" explaining to a worker why they cannot just say the box is "10 long" without naming the unit. Discourse Dimension (Organization): Sequential explanation (First I did X, then I noticed Y). Sentence Dimension (Grammar): Uses cause-and-effect clauses (<i>"Because centimeters are smaller, it takes more of them"</i>). Word Dimension (Vocabulary): Correctly uses measurement vocabulary (<i>unit, measure, length, inch, centimeter, ruler</i>)	
Knowledge and Skills	
Content	Skills
Unit Essential Questions: Topic 13: Shapes and Their Attributes - How can shapes be described, compared, and broken into parts? Enduring Understandings <i>Students will know: "I can..."</i> - Describe and compare the attributes of three dimensional and two dimensional shapes - Find, count and compare sides and angles in two dimensional shapes - Find the total number of colored tiles that will cover a rectangle - Identify, name and draw equal shares of shapes as	<i>Students will be able to..</i> - I can describe and compare the attributes of three dimensional and two dimensional shapes. - I can find, count and compare sides and angles in two dimensional shapes. - I can find the total number of colored tiles that will cover a rectangle. - I can describe attributes/characteristics that make a shape fit into a specific category. - I can use different ways to describe the shares of partitioned shapes.

halves, thirds or fourths. ● Draw and color to show a half of, third of or fourth of a shape. ● Draw to show the same wholes, as equal shares, in two different ways.	
Instructional Plan	
Suggested Activities	Resources
Suggested Activities/Resources: ● Math workstations with open-ended tasks ● Shape style games and activities (Shape Bingo, Shape “Hunt”, Mystery bag, etc.) ● Collections of materials ● Manipulatives As appropriate: ● Boom Cards ● VB-Mapp ● ABLIS-R ● Connected Math Concepts ● Prodigy ● SplashLearn ● IXL ● Starfall	Literature: Varied Levels of Text- ● <i>The Lion’s Share</i> ● <i>Shapes That Roll</i> ● <i>Twizzlers Pull n Peel Math</i>-by Jerry Pallotta ● <i>Building a Mini Park Signs</i> ● <i>The Greedy Triangle</i>-by Marilyn Burns ● <i>Shape Up</i> ● <i>Not Enough Room</i>-by Joanne Rocklin ● <i>The Shape of Things</i> ● <i>Taking Shape, Ricardo Ramos</i>
Suggested Options for Differentiation	
Multi-Language Learners : ● Differentiate instruction and classroom assessment as guided by the WIDA English Language Development Standards Framework, 2020 Edition. ● Use instructional strategies that scaffold learning for MLs and use “Can Do Descriptors” Can Do Descriptors KE Y USES	

EDITION Grades 2-3

- Follow the Individualized Educational Plans (IEP) for ML Special Education (SE) students.
- Encourage the ML student to use oral language. Discussions, especially pair-work, allow students to expand language usage in listening and speaking.
- Allow MLs to clarify ideas, make sense of their previous statements and elaborate on their views with specific explanations.
- Use wait time for MLs to express their ideas in class.
- Graphic organizers, color-coded anchor charts, word walls with visual imagery, and breakdown techniques for decoding dense mathematical word problems
- Structured talk protocols (Think-Pair-Share, Numbered Talks) and word banks
- Simplify written and verbal instructions
- Provide written directions with models and diagrams when possible
- Build in more group work to allow Multilingual Learners to interact and communicate with peers
- Provide vocabulary ahead of time
- Use sentence frames to give students practice with academic language
- Pre-teach as often as possible- share videos, articles, vocabulary etc. with Multilingual Learners prior to use in class
- Utilize visual charts/cues
- Highlight key words
- Provide manipulatives
- Frequently check for understanding

Special Education//Students with Disabilities:

- Follow specific students accommodations and modifications as listed in individual student IEP or 504 plan
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
- Incorporate small group instruction
- Utilize visual charts/cues
- Facilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation

504 Plan:

- Behavior management support.
- Adjusted class schedules or grading.
- Extended time on tests and assignments.

- Verbal, visual, or technology aids.

Gifted and Talented:

- Differentiated assignments/projects/assessments
- Differentiate learning pace using curriculum acceleration
- Curriculum compacting
- Open ended/abstract questions to activate higher level thinking
- Alternative modes of communication
- Student developed extension activities
- Plan self directed inquiry
- Student created rubrics
- Opportunities to push assessment/activity boundaries
- Self centered curriculum allowing for student choice

Students In Need of Academic Support:

- Ensure child has access to all appropriate academic resources both in school and at home
- Provide structure and adhere to a consistent daily routine with clear and concise rules
- Facilitate successful experiences
- Provide tutoring if needed
- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
- Offer encouragement and understanding
- Allow students to have personal possessions and property in school
- Give choice to provide a sense of control

Economically Disadvantaged:

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input

Culturally Diverse:

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Teach study skills
- Provide students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials Visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Integrate the arts into learning activities

Core Instructional and Supplemental Materials

- “enVision Mathematics” textbook
- Math workstations with open-ended tasks
- Shape style games and activities (Shape Bingo, Shape “Hunt”, Mystery bag, etc.)
- Collections of materials
- Manipulatives

As appropriate:

- Boom Cards
- VB-Mapp
- ABLLS-R
- Connected Math Concepts
- Prodigy
- SplashLearn

Literature:**Varied Levels of Text-**

- *The Lion’s Share*
- *Shapes That Roll*
- *Twizzlers Pull n Peel Math*-by Jerry Pallotta
- *Building a Mini Park Signs*
- *The Greedy Triangle*-by Marilyn Burns
- *Shape Up*
- *Not Enough Room*-by Joanne Rocklin
- *The Shape of Things*
- *Taking Shape*, Ricardo Ramos

- IXL
- Starfall
- XtraMath

Teacher Notes:

Language Functions and Sample Language Features

[WIDA English Language Development Standards Framework, 2020 Edition](#)

Introduce a concept or entity through... ■ Generalized nouns to identify concept (fractions, equations, plot graphs) ■ Relating verbs (be, have) to define or describe concepts (Fractions are pieces of a whole thing.) ■ Mathematical terms to describe concept, process, purpose, or action (mean, quotient, divide, subtract, reduce) Describe solutions and steps used to solve problems with others through... ■ Abstract nouns to establish context (process, answer, approach, solution) ■ Past tense doing (added, grouped) and thinking (thought, remembered) verbs to recount steps ■ Visuals (charts, diagrams, manipulatives, drawings) to support approach and/or solution ■ Connectors to order steps (first, next, then) and show causal relationships (because, so, then) ■ Compare/contrast signal words to differentiate results, approaches, objects (Our solution is... but your group has a different solution.) State reasoning used to generate solutions through... ■ If/then clause structures to show reasoning (if a shape only has 3 sides, then it is a triangle) ■ Declarative statements to state conclusion with a neutral stance of authority (This shows five 3rd-grade students jumped higher than the average of seven inches.) ■ Thinking verbs to reflect on the process (I wonder if we tried, if it would be different, I think we should have done...)

Create conjecture using definitions through... ■ Relating verbs (have, belong to, be) to make a claim (A is bigger than B because it is taller.) ■ Adverbial phrases (qualities, quantities, frequency) to add precision related to conjecture (All squares have 4 equal sides.

Triangles always have 3 sides.) Generalize by finding commonalities across cases through... ■ A variety of structures such as comparatives (er, est; more, most); demonstratives (these, both, that) to point out similarities (Both squares and rhombuses have 4 equal sides, $\frac{1}{2}$ is bigger than $\frac{1}{4}$) ■ Conditional structures (if/then, when) to draw conclusions (If $34+68=102$ then $102-68=34$, When a number is even you can divide it into two equal parts.) Justify conclusion steps and strategies in simple patterns through... ■ Technical nouns to add precision and details (place value, communicative property, angles, measurement, fractions, even/odd) ■ Causal connectors (because, so, that means) to present case to others (The taller rectangle isn't always bigger because you have to look at the area inside.) ■ Drawings, manipulatives, models, diagrams to support thinking Identify and respond to others' arguments through... ■ Questions (how, what, why) to ask for clarification or information (How did you get your answer?) ■ Declarative statements to disagree/debate (I disagree, I'm not sure, I got a different answer...) ■ Declarative statements to counter claim or reasoning (5-3 is not the same as 3-5, Just because it has 4 sides that doesn't make it a square, the sides have to be equal)