**Subject**

**Elementary- 2nd Grade Mathematics**

**Curriculum Guide**

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**LINDEN PUBLIC SCHOOLS**

**LINDEN, NEW JERSEY**

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**The Linden Board of Education adopted the Curriculum Guide on:**

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| **July 28, 2022** |  | **Education Report #22** |
| **Date** |  | **Agenda Item** |
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| **Rationale** | | |

**EDUCATION EQUITY:** The Linden Public School District guarantees each student equal educational opportunity regardless of age, race, color, creed, religion, gender, language, affectional or sexual orientation, ancestry, national origin, marital or economic status. For Information, contact District Educational Equity Officer Kevin Thurston at **(**908) 486-2800 x 8307**.**

**NONDISCRIMATION:** The Linden Public School District does not discriminate against handicapped persons in admission or access to or treatment or employment in its programs, activities, and vocational opportunities. For information contact District Public 504 Officer Annabell Louis at (908) 486-2800 x 8025.

**Linden Public Schools Vision**

The Linden Public School District is committed to developing respect for diversity, excellence in education, and a commitment to service, in order to promote global citizenship and ensure personal success for all students

**Linden Public Schools Mission**

The mission of the Linden Public School District is to promote distinction through the infinite resource that is Linden’s diversity, combined with our profound commitment to instructional excellence, so that each and every student achieves their maximum potential in an engaging, inspiring, and challenging learning environment.

**Elementary Math Department Vision**

To equip students with the understanding and application of mathematical skills and processes to foster a drive for advanced mathematics and higher-level thinking.

**Elementary Math Department Mission Statement**

To develop a community of learners who construct and communicate meaning from the mathematical world around them. Students will experience mathematics that encourage them to think critically, discover and apply concepts to solve problems strategically. Students will be encouraged to solve equations with accuracy, efficiency, and flexibility. Furthermore, students will have a multitude of opportunities to apply mathematical tools and practice standards to solve real-world and multi-step problems.

**Elementary Math Department Goals**

* Provide opportunities for student to develop computation skills, conceptual understanding, and problem-solving skills
* Require students to explain, justify or prove their thinking through mathematical reasoning, modeling, and speaking

Course Description

The second-grade mathematics program focuses on extending understanding of base-ten notations and place value, building fluency with addition and subtraction, using standard units of measurement, and further describing and analyzing shapes. The program extends students understanding of addition to develop fluency with both addition and subtraction within 100 and extend to solve problems within 1000 all within a realistic context. Students learn to correctly use standard measurement tools recognizing the need for small iterations of units for smaller items. Describing and analyzing shapes includes examining sides and angles. Students decompose and combine shapes to create new shapes which supports the development of an understanding of area, congruence, similarity, and symmetry which carries into later years. Mathematical concepts are not presented in isolation but are linked to situations and contexts that are relevant to everyday life. All grade 2 students will complete a summer mathematics project prior to entering grade 2.

Course Instructional Materials

* + - Into Math Book
    - Hmhco.com/ed
    - District Rubric for Constructed Response
    - Rubric for Mathematical Problem Solving/Critical Thinking based on the Mathematical Practices
    - Into Math Games, Learning Centers, and Literature

Standards and NJDOE Mandates Guiding Instruction

* 1. New Jersey Student Learning Standards

<https://www.state.nj.us/education/cccs/>

B. Power Standards from NJSLS

* 2.OA.A – Represent and solve problems involving addition and subtraction,
* 2.OA.B – Add and subtract within 20.
* 2.NBT.A – Understand place value.
* 2.NBT.B – Use place value understanding and properties of operations to add and subtract.
* 2.MD.A – Measure and estimate lengths in standard units.
* 2.MD.B – Relate addition and subtraction to length.

General Interdisciplinary Connections / Materials

* Language Arts: Literature relevant to the topics covered in each unit. Utilize proofreading and editing skills when solving constructed responses.
* Fine and Performing Arts: Utilize instructional videos relevant to the topics covered in each unit.
* Science & Technology: Scientific or Technological advances made during or relevant to the topics covered in each unit. Discover repeated patterns to make predictions and solve problems. Use evidence to support findings and solutions to problems. Use language to describe relationships and change in relationships in a rational way.

Diversity, Equity, and Inclusion

* Use students’ interests in conceptualized tasks
* Expose students to a diverse group of mathematicians
* Design assessments and assignments with a variety of response types
* Use systematic grading and participation methods
* Encourage students to embrace a growth mindset

Pacing Guide

Linden Public Schools

Into Math Pacing Guide

2nd Grade

2022-2023

Routine Building and Center Development – September 2022

**Unit 1 Numbers to 20 and Data**

Module 1 - Fluency for Addition and Subtraction Within 20 – September 8th – September 23rd

**Edmentum BOY Testing September 19th – September 30th**

Module 2 - Equal Groups – September 27th – October 5th

Module 3- Data – October 6th  – October 17th

**Unit 2 Place Value**

Module 4 - Understand Place Value – October 18th – October 26th

Module 5 - Read, Write, and Show Numbers to 1,000 - October 27th – November 6th

Module 6 - Use Place Value - November 14th – November 23rd

**Unit 3 Money and Time**

Module 7 - Coins – November 28th – December 6th

Module 8 - Dollar Amounts – December 7th – December 13th

Module 9 - Time – December 14th – December 22nd

**Unit 4 Two-Digit Addition and Subtraction**

Module 10 - Addition and Subtraction Counting Strategies – January 2nd – January 6th

Module 11 - Addition and Subtraction Grouping Strategies – January 9th – January 18th

Module 12 - Represent and Record Addition and Subtraction – January 19th – January 31st

**Edmentum MOY Assessment January 23rd to February 3rd**

Module 13 - Develop Addition and Subtraction Fluency – February 6th – February 14th

Module 14 - Algebra – February 15th – March 1st

Module 15 - Addition and Subtraction Word Problems – March 2nd – March 8th

**Unit 5 Three-Digit Addition and Subtraction**

Module 16 - Three-Digit Addition – March 9th – March 17th

Module 17 - Three- Digit Subtraction – March 20th – March 29th

**Unit 6 Measurement: Length**

Module 18 - Length in Inches, Feet, and Yards – March 30th – April 25th

Module 19 - Length in Centimeters and Meters – April 26th – May 3rd

Module 20 - Relate Addition and Subtraction to Length – May 4th – May 12th

**Unit 7 Geometry and Fractions**

Module 21 - Two- and Three - Dimensional Shapes – May 15th – May 24th

**Edmentum EOY Assessment May 22nd to June 2nd**

Module 22 - Understand Fractions – May 25th – June 9th

Getting Ready for Grade 3 Lessons – To be determined

\***Assessment days are built into each chapter**.

Beginning, Middle, and End-of-the-Year Assessments built into assessment calendar

1. Vertical Integration – Program Mapping

**1st Grade**

**Geometry**:

* Students correctly name shapes.
* Students analyze and compare two and three dimensional shapes in different sizes and orientations.
* Students partition circles and rectangles into halves and fourths.

**Measurement and Data**:

* Students use standard and non-standard units of measurement to understand that the length of measurement of an object is the number of same-size length units that span it with no gaps or overlaps.
* Students compare and order three objects according to their lengths.

**Number and Operations in Base Ten:**

* Students count by tens and unitized a ten as a bundle of ten ones.
* Students understand the place value of tens and ones.
* Students add and subtract within 100 using various strategies.

**Operations and Algebraic Thinking:**

* Students add and subtract within 20, demonstrating fluency for addition and subtraction within 10.  Strategies used are; counting on, making ten, using relationship between addition and subtraction, and creating equivalent but easier or known sums.
* Students use addition within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.
* Students relate counting to addition and subtraction.

**3rd Grade**

**Geometry**:

* Students understand that shapes in different categories may share attributes and that the shared attributes can define a larger category (e.g. quadrilateral).
* Students are introduced to the concept of area and learn how fractions can be used to show parts of a whole.

**Measurement and Data:**

* Students measure to the nearest fourth inch and half inch and extend measurement of length to find perimeter and area.
* Students solve real world problems involving addition, subtraction, perimeter, area, time, mass, and liquid volume.
* Students generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.

**Number and Operations in Base Ten:**

* Students use place value understanding to round whole numbers and fluently add and subtract within 1000.
* Students fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction

**Operations and Algebraic Thinking:**

* Students fluently add or subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
* Students understand the relationship between addition and multiplication.
* Students develop fluency with multiplication.
* Students fluently add and subtract within 1.000, using strategies and algorithms to solve one- and two-step word problems.

1. Accommodations, Modifications, and Teacher Strategies

(specific recommendations are made in each unit)

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| **Instructional Strategies**   * Teacher Presentation * Student Presentation * Class Discussion * Socratic Discussion * Reading for Meaning * Inquiry Design Model * Interactive Lecture * Interactive Notetaking * Compare and Contrast * Research Based * Problem Based * Project Based   **504 Plans**  Students can qualify for 504 plans if they have physical or mental impairments that affect or limit any of their abilities to:   * walk, breathe, eat, or sleep * communicate, see, hear, or speak * read, concentrate, think, or learn * stand, bend, lift, or work   Examples of accommodations in 504 plans include:   * preferential seating * extended time on tests and assignments * reduced homework or classwork * verbal, visual, or technology aids * modified textbooks or audio-video materials * behavior management support * adjusted class schedules or grading * verbal testing * excused lateness, absence, or missed classwork * pre-approved nurse's office visits and accompaniment to visits occupational or physical therapy | **Gifted and Talent Accommodations and Modifications**   * Allow for further independent research on topics of interest related to the unit of study * Advanced leveled readers and sources * Increase the level of complexity * Decrease scaffolding * Variety of finished products * Allow for greater independence * Learning stations, interest groups * Varied texts and supplementary materials * Use of technology * Flexibility in assignments * Varied questioning strategies * Encourage research * Strategy and flexible groups based on formative assessment or student choice * Acceleration within a unit of study * Exposure to more advanced or complex concepts, abstractions, and materials * Encourage students to move through content areas at their own pace * After mastery of a unit, provide students with more advanced learning activities, not more of the same activity * Present information using a thematic, broad-based, and integrative content, rather than just single-subject areas | **Special Education and At-Risk Accommodations and Modifications**   * Focus on concept not details * More visual prompts * Leveled readers and teacher annotated sources * Timelines and graphic organizers * Remove unnecessary material, words, etc., that can distract from the content * Use of off-grade level materials * Provide appropriate scaffolding * Limit the number of steps required for completion * Time allowed * Level of independence required * Tiered centers, assignments, lessons, or products * Provide appropriate leveled reading materials * Deliver the content in “chunks” * Varied texts and supplementary materials * Use technology, if available and appropriate * Varied homework and products * Varied questioning strategies * Provide background knowledge * Define key vocabulary, multiple-meaning words, and figurative language. * Use audio and visual supports, if available and appropriate * Provide multiple learning opportunities to reinforce key concepts and vocabulary * Meet with small groups to reteach idea/skill * Provide cross-content application of concepts * Ability to work at their own pace * Present ideas using auditory, visual, kinesthetic, & tactile means * Provide graphic organizers and/or highlighted materials * Strategy and flexible groups based on formative assessment * Differentiated checklists and rubrics, if available and appropriate | **English Language Learners Accommodations and Modifications**   * Focus on concept not details * More visual prompts * Leveled readers and teacher annotated sources * Guided notes with highlighted words and concepts * Use of Merriam-Webster’s ELL dictionary * Timelines and graphic organizers * Remove unnecessary material, words, etc., that can distract from the content * Use of off-grade level materials * Provide appropriate scaffolding * Limit the number of steps required for completion * Time allowed * Level of independence required * Tiered centers, assignments, lessons, or products * Provide appropriate leveled reading materials * Deliver the content in “chunks” * Varied texts and supplementary materials * Use technology, if available and appropriate * Varied homework and products * Varied questioning strategies * Provide background knowledge * Define key vocabulary, multiple-meaning words, and figurative language. * Use audio and visual supports, if available and appropriate * Provide multiple learning opportunities to reinforce key concepts and vocabulary * Meet with small groups to reteach idea/skill * Provide cross-content application of concepts * Ability to work at their own pace * Present ideas using auditory, visual, kinesthetic, & tactile means * Provide graphic organizers and/or highlighted materials * Strategy and flexible groups based on formative assessment * Differentiated checklists and rubrics, if available and appropriate |

1. Elementary Math Department 6 Point District Rubric for Constructed Response

6

* All of 5 AND
* solves the problem another way in order to check their solution
* OR describes how you might solve this type of problem differently the next time and why

5

* All of 4 AND
* writes a step by step explanation with **grade level** vocabulary of strategies used to solve the problem

4

* (all items below must be included, **if appropriate**)
* all parts of the problem are answered correctly with labels
* a labeled visual representation (diagram, picture, model, graph, chart, table, etc.)
* an equation/number sentence
* writes a step by step explanation of strategies used to solve the problem (the reader can follow the steps to understand how the problem was solved)
* shows all work

3

* has a partially correct answer with a reasonable mathematical plan; may be missing one/some of the items noted in 4

2

* there are multiple errors OR inappropriate explanation OR no explanation is provided; OR has the beginning of a reasonable mathematical plan

1

* major errors are present OR explanation does not relate to the problem
* no response revised July 2016

1. Constructed Response Revision Rubric

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| **Rubric for Mathematics Problem Solving/Critical Thinking**  **based on the Mathematical Practices** | | | | |
|  | **Expert** | **Practitioner** | **Apprentice** | **Novice** |
| Perseverance | I **try many times** to understand and solve a math problem. | I make **some attempt** to understand and solve a math problem. | I make **one attempt** to understand and solve a math problem. | I make **no** attempt to understand and solve a math problem. |
| Information | I reason what information is needed and not needed to solve this problem | I reason what information is needed and not needed to solve this problem, **most of the time**. | I reason what information is needed and not needed to solve this problem - **some of the time** | It is **difficult** for me to reason what information is needed and not needed to solve this problem. |
| Understanding | I understand the math problem and explain my strategies/steps to others. | I **understand the math** problem and/but it’s **difficult** for me to put into my own words. | I **somewhat understand** the math problem and/but it’s **difficult** for me to put into my own words. | I am having **difficulty understanding** the math problem. |
| Plan | I show **all** my mathematical thinking and strategies to solve the problem. | I show **most** of my mathematical thinking and strategies to solve the problem. | I do not show **much** of my mathematical thinking and strategies to solve the problem. | I do not show any of my mathematical thinking and strategies. |
| Model with mathematics and using appropriate tools | I use math symbols, numbers, and/or math tools, diagrams/pictures to **solve** the problem **correctly**. | I **attempt** to use math symbols, numbers, and/or math tools, diagrams/pictures to solve the problem, but it has a **minor mistak**e. | I **attempt** to use math symbols, numbers, and/or math tools, diagrams/pictures to solve the problem, but it has **mistakes**. | I have **difficulty** using math symbols, numbers, math tools, diagrams/pictures  to solve the problem |
| Revision and Reflection | I revise **on my own**, I use what I already know about math to solve the problem and/or I apply a strategy that I used to solve another math problem. | I revise with **some support**. **If reminded**, I use what I already know about math to solve the problem and/or I apply a strategy that I used to solve another math problem. | I revise **with a lot of help**, prompts or revisiting a strategy. | I only revise with a step by step explanation and **more direct instruction**. |

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| **Unit: Operations and Algebraic Thinking** |
| **Overview:**  • Represent and solve problems involving addition and subtraction  • Add and subtract within 20  • Work with equal groups of objects to gain foundations for multiplication  Time Period: **First/Second Trimester** Length: **10 Weeks** |

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| **STAGE 1 – Desired Results** |

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| **Mathematical Practices**  1. Make sense of problems and persevere in solving them.  2. Reason abstractly and quantitatively.  3. Construct viable arguments and critique the reasoning of others.  4. Model with mathematics.  5. Use appropriate tools strategically.  6. Attend to precision.  7. Look for and make use of structure.  8. Look for and express regularity in repeated reasoning  Career Ready Practices  CRP4.  Communicate clearly and effectively and with reason.  CRP6. Demonstrate creativity and innovation.  CRP8.  Utilize critical thinking to make sense of problems and persevere in solving them.   |  | | --- | | **New Jersey Student Learning Standards- Mathematics** | |  |  |  |  | | --- | --- | | **Introduction- Grade 2** | | | |  |  | | --- | --- | | MA.2.2 | In Grade 2, instructional time should focus on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes. | | MA.2.2.2 | Students use their understanding of addition to develop fluency with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations. They select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds.  **Operations and Algebraic Thinking** | | | | 2.OA.A.1 | | Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. | | 2.OA.B | | Add and subtract within 20. | | 2.OA.B.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. | | 2.OA.C | | Work with equal groups of objects to gain foundations for multiplication. | | 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. | | 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. |   **Cluster A**: **Represent and solve problems involving addition and subtraction**  **Essential Questions…**   * How do we solve for the unknown number? * How do we create a number sentence to solve a word problem? * How are bar models used to show addition and subtraction problems? * How are number sentences used to show addition and subtraction situations? * How can drawing a diagram help when solving addition problems? * How do you write a number sentence to represent a problem? * How can drawing a diagram help when solving subtraction problems? * How do you write a number sentence to represent a problem? * How do you decide what steps to do to solve a problem?   **Enduring Understanding…**   * We represent and solve word problems within 100, building upon our previous work to 20. * We represent and solve one and two-step word problems of all three types.   **Students will know...**  I. Key Vocabulary/Terms: bar model, number sentence,add, subtract, more, less, equal, equation, putting together, taking from, taking apart, addend, comparing, and unknown  II. Key Concepts/Ideas: By the end of the year,   * To 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.   III. Possible Misunderstandings:   * Students do not understand the bar model for a comparison subtraction problem. * Students may write an incorrect number sentence for a problem. * Students may add instead of subtract. * Students may be confused by the multiple actions taking place in a problem and use the wrong operation for one of the steps.   **Students will be able to...**   * Use manipulatives, drawings, mental images, and equations to solve one and two step word problems within 100. * Tell and write number stories to illustrate and solve number problems. * Show two or more ways to create the same total up to 100, in one and two steps, using objects or drawings, and record the equations. * Use objects or drawings to find the addend that will make up to 100 when added to a given number, and record the answer with a drawing or equation. * Read, write, and solve equations using symbols to represent the unknown numbers in all positions.   **Cluster B: Add and subtract within 20**  **Essential Questions…**   * How does knowing our facts help us to solve math problems? * How can you use doubles facts to find sums for near doubles facts? * What are some ways to remember sums? * How is the make a ten strategy used to find sums? * How do you add three numbers? * How are addition and subtraction related? * What are some ways to remember differences? * How does getting to 10 in subtraction help when finding differences?   **Enduring Understanding…**   * Solving addition and subtraction number sentences requires fluency, (flexibility and accuracy, and efficiency).   **Students will know...**  I. Key Vocabulary/Terms: add, subtract, sum, more, less, equal, equation, putting together, taking from, taking apart, doubles, count on, number sentence,difference, related facts, count back, and addend  II. Key Concepts/Ideas: By the end of the year,   * Addition and subtraction facts within 20 with fluency.   III. Possible Misunderstandings:   * Students may not understand when to add 1 or subtract 1 from the doubles fact. * Students may not recognize the sum when it appears on the left of the equal sign. * Students may break apart the addend into a combination that does not make a ten, and then continue on as if it did make a ten. * Students may find the sum for two addends and forget to add the third addend. * Students do not understand the inverse relationship between addition and subtraction. * Students use the count back strategy with numbers greater than 3 and lose count.   **Students will be able to...**   * Use a variety of mental strategies to solve number sentences. * Practice (both orally and in writing) facts for addition and subtraction within 20. * Use fact families and/or fact triangles to practice facts for addition and subtraction within 20.   **Cluster C: Work with equal groups of objects to gain foundations for multiplication**  **Essential Questions…**   * How can we identify even and odd numbers? * How do we relate arrays to repeated addition? * How are even numbers and odd numbers different? * Why can an even number by shown as the sum of two equal addends? * How can acting it out help when solving a problem about equal groups? * How can you write an addition sentence for problems with equal groups?   **Enduring Understanding…**   * Using a variety of strategies, determine whether a group of objects is odd or even. * Arrays can be written as repeated addition problems. * Using rectangular arrays to solve repeated addition problems is the foundation for multiplication.   **Students will know...**  I. Key Vocabulary/Terms: row, column, rectangular array, even, odd, addition sentence,and equal  II. Key Concepts/Ideas: By the end of the year,   * To determine whether groups are made up of an odd or even number of objects. * To explain even numbers as a sum of two equal addends. * That a rectangular array is an arrangement of things in rows and columns, and can be used to solve problems.   III. Possible Misunderstandings:   * Students may not see the relationship between the pattern of equal groups and skip counting. * Students may forget to add all the numbers repeated in the addition sentence.   **Students will be able to...**   * Use manipulatives and drawings to show that any group contains either an even or odd number of objects. * Identify groups of objects as even or odd by pairing or counting by twos. * Explore even numbers as a sum of two equal addends. * Explore odd numbers as a sum of two equal addends plus or minus one. * Solve repeated addition problems to find the number of objects using rectangular arrays. * Write an equation with repeated equal addends from an array. |

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| **Unit: Numbers and Operations in Base Ten** |
| **Overview:**  • Understand place value  • Use place value understanding and properties of operations to add and subtract.  Time Period: **First/Second Trimester** Length: **12 Weeks** |

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| **STAGE 1 – Desired Results** |

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| **Mathematical Practices**  1. Make sense of problems and persevere in solving them.  2. Reason abstractly and quantitatively.  3. Construct viable arguments and critique the reasoning of others.  4. Model with mathematics.  5. Use appropriate tools strategically.  6. Attend to precision.  7. Look for and make use of structure.  8. Look for and express regularity in repeated reasoning  Career Ready Practices  CRP4.  Communicate clearly and effectively and with reason.  CRP6. Demonstrate creativity and innovation.  CRP8.  Utilize critical thinking to make sense of problems and persevere in solving them.   |  | | --- | | **New Jersey Student Learning Standards- Mathematics** | |  |  |  |  | | --- | --- | | **Introduction- Grade 2** | | | |  |  | | --- | --- | | MA.2.2.1 | Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).  **Number and Operations in Base Ten** | | | | 2.NBT.A | | Understand place value. | | 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: | | 2.NBT.A.1a | | 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 | | Use place value understanding and properties of operations to add and subtract. | | 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. | | 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. |   **Cluster A**: **Understanding Place Value**  **Essential Questions…**   * Why do numbers have place value? * How do you know the value of a digit? * How do you describe a 2-digit number as tens and ones? * What are different ways to write a 2-digit number? * How can you show the value of a number in different ways? * How does finding a pattern help you find all the ways to show a number with tens and ones? * How do you count by 1s, 5s, and 10s with numbers less than 100? * How do you count by 1s, 5s, 10s, and 100s with numbers less than 1,000? * How do you group tens as hundreds? * How do you write a 3-digit number for a group of tens? * How do you show a 3-digit number using blocks? * How do you write the 3-digit number that is shown by a set of blocks? * How do you know the values of the digits in numbers? * How do you write 3-digit numbers using words? * What are three ways to write a 3-digit number? * How can you use blocks or quick pictures to show the value of a number in different ways? * How can you make a model to solve a problem about comparing numbers? * How do you compare 3-digit numbers?   **Enduring Understanding…**   * Place value allows us to use the digits (0 to 9) to express numbers up to and beyond 1000; the location of a digit in a number determines its value.   **Students will know...**  I. Key Vocabulary/Terms: ones, tens, hundreds, thousand, digit, more, fewer, compare, is equal to, is greater than, is less than, and skip count  II. Key Concepts/Ideas: By the end of the year,   * To identify the value of each digit in a three-digit number. * To demonstrate how ten ‘tens’ make 100. * To skip count by 5s, 10s, and 100s within and up to 1000. * To read and write number to 1000 using: * Base ten numerals * Number names (written out using words) * Expanded form * Ways to compare two three digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons, without the use of manipulatives.   III. Possible Misunderstandings:   * Students may not circle the correct value for a tens digit. * Students may not write the value of the tens digit correctly. * Students who count the ones blocks individually may have difficulty counting the correct number of ones. * When students find a pattern, they may not include all the possibilities. * Students may identify the next number in the counting sequence incorrectly. * Students may miscount the tens blocks in an exercise. * Students may use base-ten blocks that do not represent the value of the number. * Students may not write 0 as a placeholder. * When writing three-digit numbers using words, students may separate the digits and write the word for each number. * When writing the expanded form of a number, students may write the sum of the digits. * Students may confuse tens and hundreds.   **Students will be able to...**   * Use place value charts and base ten blocks to represent up to three digit numbers using a variety of solution strategies. * Use play paper money ($1, $10, & $100) to represent three digit numbers. * Use ten base-ten rods to represent 100, or 10 ten-dollar bills to represent 100. * Use base-ten hundred blocks or paper 100-dollar bills to demonstrate that the number of hundred blocks is found in the hundreds place with zero tens and zero ones. * Skip count up to 1000 by 5s, 10s, and 100s, beginning at any multiple of 5, 10 or 100 (e.g. begin at 505 and skip count by 5 up to \_\_; or begin at 600 and skip count by 100 up to 1000). * Read and write numbers to 1000 using base ten numerals, number names, and expanded form. * Use >, =, and < symbols to record the results of comparing two three digit numbers, using a place value chart, with and without base ten blocks.   **Cluster B: Use place value understanding and properties of operations to add and subtract**  **Essential Questions…**   * How do we use different strategies to help us add and subtract? * How do you use place value to find 10 more, 10 less, 100 more, or 100 less than a 3-digit number? * How does place value help you identify and extend counting patterns? * How does breaking apart a number make it easier to add? * How can you make an addend a ten to help solve an addition problem? * How do you break apart addends to add tens and then add ones? * When do you regroup in addition? * How do you record 2-digit addition? * How do you record the steps when adding 2-digit numbers? * What are two different ways to write addition problems? * What are some ways to add 3 numbers? * What are some ways to add 4 numbers? * How does breaking apart a number make subtracting easier? * When do you regroup in subtraction? * How do you record 2-digit subtraction? * How do you record the steps when subtracting 2-digit numbers? * What are two different ways to write subtraction problems? * How can you use addition to solve subtraction problems? * How do you draw quick pictures to show adding 3-digit numbers? * How do you break apart addends to add hundreds, tens, and then ones? * When do you regroup ones in addition? * When do you regroup tens in addition? * How do you know when to regroup in addition? * How can making a model help when solving subtraction problems? * When do you regroup tens in subtraction? * When do you regroup hundreds in subtraction? * How do you know when to regroup in subtraction? * How do you regroup when there are zeros in the number you start with?   **Enduring Understanding…**   * Computation requires composing and decomposing numbers. * There is more than one way to solve a computation problem. * We use place value and their relationships to help us solve number sentences. * We try out strategies to find the most efficient and accurate method and represent the strategy using numbers and symbols.   **Students will know...**  I. Key Vocabulary/Terms: less than, more than,pattern, addend, regroup, column, compose, decompose, place value, digit, ten more, ten less, add, subtract, sum, equal, addition, and subtraction  II. Key Concepts/Ideas: By the end of the year,   * To add three digit numbers to three digit numbers equaling up to 1,000. Students will show evidence of understanding by using written responses and pictures to support thinking process, as well as a written number sentence. * To subtract numbers within 1,000. Students will show evidence of understanding by using written responses and pictures to support thinking process, as well as a written number sentence. * To write numbers up to 1,000 using expanded form (thousands +\_\_\_hundreds +\_\_\_tens + \_\_ones). * To demonstrate mental addition and subtraction with the numbers 100-900.   III. Possible Misunderstandings:   * Students may confuse tens and hundreds. * Students may not understand how to break apart the ones in the lesser addend. * Students may not understand how to take ones from an addend to make the other addend a tens #. * Students may incorrectly break a 2-digit number apart as two 1-digit numbers. * Students may forget to include the regrouped ten. * Students may forget to regroup and write a 2-digit number in the ones place of the sum. * Students may forget to add the regrouped 10. * Students may not line up the tens and ones correctly. * Students may be able to add the hundreds, the tens, and the ones, but have difficulty finding the total sum. * Students may add instead of subtact to solve the problem.   **Students will be able to...**   * Add and subtract numbers through 100 progressing up to 1000.  Students will use ones cubes, tens rods, hundreds flat, and thousands cube to add and subtract. * Add up to four sets of two-digit numbers- first starting out using the place value manipulatives, then moving to pictorial models, then to abstract number sentence models. * Use the number grid chart up to 1000 to add and subtract * Add and subtract numbers within 1000 by using a variety of methods that demonstrate the composition and decomposition of the numbers. * Add and subtract numbers through 1000 using words, pictures and number sentences to explain thinking. * Explore even numbers as a sum of two equal addends. * Explore odd numbers as a sum of two equal addends plus or minus one. * Solve repeated addition problems to find the number of objects using rectangular arrays. * Write an equation with repeated equal addends from an array. |
| **Unit: Measurement and Data** |
| **Overview:**   * Measure and estimate lengths in standard units * Relate addition and subtraction to length * Work with time and money * Represent and interpret data   Time Period: **Third Trimester** Length: **8 Weeks** |

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| **STAGE 1 – Desired Results** |

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| **Mathematical Practices**  1. Make sense of problems and persevere in solving them.  2. Reason abstractly and quantitatively.  3. Construct viable arguments and critique the reasoning of others.  4. Model with mathematics.  5. Use appropriate tools strategically.  6. Attend to precision.  7. Look for and make use of structure.  8. Look for and express regularity in repeated reasoning  Career Ready Practices  CRP4.  Communicate clearly and effectively and with reason.  CRP6. Demonstrate creativity and innovation.  CRP8.  Utilize critical thinking to make sense of problems and persevere in solving them.   |  | | --- | | **New Jersey Student Learning Standards- Mathematics** | |  |  |  |  | | --- | --- | | **Introduction- Grade 2** | | | |  |  | | --- | --- | | MA.2.2.3 | Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length. | | | | **Measurement and Data**  2.MD.A | | Measure and estimate lengths in standard units. | | 2.MD.B | | Relate addition and subtraction to length. | | 2.MD.C | | Work with time and money. | | 2.MD.D | | Represent and interpret data. | | 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.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.MD.A.3 | | Estimate lengths using units of inches, feet, centimeters, and meters. | | 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. | | 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. | | MA.2.2.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. | | 2.MD.C.7 | | Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. | | 2.MD.C.8 | | Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. | | 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. | | 2.MD.D.10 | | Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph. |   **Cluster A**: **Measure and estimate lengths in standard units**  **Essential Questions…**   * How do we determine which is the best tool (i.e., ruler, yardstick, measuring tape) to use to measure an object? * Why do the units matter when we measure the length of an object? * How can we use one measuring tool to determine how much longer one object is than another? * How can you use inch models to measure length? * Why is using a ruler similar to using a row of color tiles to measure length? * How do you estimate the lengths of objects in inches? * How do you use an inch ruler to measure lengths? * Why is measuring in feet different from measuring in inches? * How do you estimate the lengths of objects in feet? * How do you choose a measuring tool to use when measuring lengths? * How do you use a centimeter model to measure the lengths of objects? * How do you use known lengths to estimate unknown lengths? * How do you use a centimeter ruler to measure lengths? * How is measuring in meters different from measuring in centimeters? * How do you estimate the lengths of objects in meters? * How do you find the difference between the lengths of two objects?   **Enduring Understanding…**   * Measuring with a longer unit of measure will give a smaller number for length than measuring with a smaller unit of measure. * When measuring two objects with the same measuring tool, we can add or subtract the lengths to find out how much longer or shorter one is than the other. * Being able to visualize the lengths of standard units (inch, foot, centimeter, meter) helps us estimate unmeasured lengths.   **Students will know...**  I. Key Vocabulary/Terms: foot, inches, feet, about, a little less than, a little more than, longer, shorter, measure, units, yardstick, measuring tape, ruler, estimate, centimeter, and meter  II. Key Concepts/Ideas: By the end of the year,   * To measure two objects with the same unit of measurement and determine which is longer, and by how much. * To explain that if a smaller unit of measure is used to measure an object, the number representing the length will be larger than if a larger unit of measure was used. * To recognize which unit of measure would be most appropriate to measure various lengths. * To estimate the length of a given object appropriately (inches, feet, centimeters and meters). * Specific measurements as it relates to feet, yards, and meters:   + There are 12 inches in a foot   + There are 3 feet in a yard   + There are 100 centimeters in a meter * There are 12 inches in a foot, 3 feet in a yard, and 100 centimeters in a meter.   III. Possible Misunderstandings:   * Students may find it difficult measuring to the nearest foot when the length of the object ends between whole feet. * Students may become confused about which object’s length they need to measure. * Students may count all of the centimeter marks instead of the 1-cm lengths. * Students may confuse meters with centimeters. * When measuring the length of the second object, students may just slide the ruler down without realigning the zero mark.   **Students will be able to...**   * Measure the same object using two different units of measures and discuss why the numbers representing the length are different. * Measure various lengths from very short to very long and have the students pick the unit of measure that would make the most sense and explain why that unit was picked. * Estimate length in a given unit of measurement when given various objects.   **Cluster B: Relate addition and subtraction to length**  **Essential Questions…**   * How can we add and subtract lengths when solving real-world problems? * How can drawing a diagram help when solving problems about length?   **Enduring Understanding…**   * We can use our knowledge of addition and subtraction to solve problems involving lengths.   **Students will know...**  I. Key Vocabulary/Terms: inch, foot, centimeter, meter, estimate, equation, measure, and standard units  II. Key Concepts/Ideas: By the end of the year,   * To solve addition and subtraction word problems with numbers up to 100 involving length. * To use a number line to determine the difference between two lengths up to 100. * To use a number line, drawings, etc. to determine the differences between lengths up to 100. * To write equations with a symbol to represent the unknown to represent the problem.   III. Possible Misunderstandings:   * The lengths shown in student’s diagrams may not be accurate. * Students may draw a mark that incorrectly represents the action of the problem.   **Students will be able to...**   * Solve word problems involving length using numbers within 100, by using either addition or subtraction strategies. * Determine the difference between two lengths within 100; students will use the number line to determine the difference   **Cluster C: Work with time and money**  **Essential Questions…**   * What time is it? * How can we use appropriate operations to solve word problems involving money? * How do you find the total value of a group of dimes, nickels, and pennies? * How do you find the total value of a group of coins? * How do you order coins to help find the total value of a group of coins? * How do you choose coins to show a money amount in different ways? * How can you show the value of one dollar with coins? * How do you show money amounts greater than one dollar? * How does acting it out help when solving problems about money? * How do you tell time to the hour and half hour on a clock? * How do you tell and show time to five minutes? * What are the different ways you can read the time on a clock?   **Enduring Understanding…**   * Being able to tell time and count money are critical life skills. * Time and money can be measured and have value.   **Students will know...**  I. Key Vocabulary/Terms: time, hour hand, minute hand, hour, minute, o’clock, analog clock, digital clock, half past, half hour, 30 minutes before, 30 minutes after, 30 minutes past, 30 minutes until, quarter, dime, nickel, dollar, cent(s), heads, and tails  II. Key Concepts/Ideas: By the end of the year,   * To identify the current time to the nearest 5 minutes on both analog and digital clocks. * To show on both analog and digital clocks the time that they perform various activities during the day, to the nearest five minutes. (showing AM or PM) * To use appropriate operations as described in word problems to find money totals. * To calculate money totals involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately.   III. Possible Misunderstandings:   * Students may think that the value of a coin is related to its size. * Students may count a set of different coins using the same value for each coin. * Students may not understand how to show an amount in two ways. * Students may leave out some of the coins or bills when finding the amount left. * When writing money amounts greater than one dollar, children may write the decimal point in the wrong position. * Students may have difficulty determining how many minutes to write after the colon. * Students may count by the wrong number pattern when moving from one number to the next on a clock. * Students may confuse *half past* and *quarter past*. * Students may confuse A.M. and P.M.   **Students will be able to...**   * Demonstrate time in both analog and digital format on clocks. * Tell time using the classroom clocks. * Count by fives up to 60, noting 15, 30, 45, and 60 in common terms as quarters and half. * Demonstrate dollar and cent values with manipulatives. * Perform addition and subtraction of varied denominations.   **Cluster D**: **Represent and interpret data**  **Essential Questions…**   * How can we represent and interpret the information we collect? * How do you use a tally chart to record data from a survey? * How do you use a picture graph to show data? * How do you make a picture graph to show data in a tally chart? * How is a bar graph used to show data? * How do you make a bar graph to show data? * How does making a bar graph help when solving problems about data?   **Enduring Understanding…**   * Charts and graphs turn data into images that help us draw conclusions. * Charts and graphs allow us to make visual displays of our collected data.   **Students will know...**  I. Key Vocabulary/Terms: line plot, lengths, survey, tally chart, tally marks, key, data, collect, organize, display, data, attribute, sort, picture graph, bar graph, chart, and category  II. Key Concepts/Ideas: By the end of the year,   * To use the number line (with whole numbers) to create line plots. * To measure varied items and represent the collected measurement data on a line plot. * To create picture graphs and bar graphs with up to four categories of given information. * To demonstrate understanding of displayed data by accurately identifying the information presented by the graph.   III. Possible Misunderstandings:   * Students may forget to draw a diagonal line for a tally mark. * Students may compare the wrong data when answering comparison questions. * Students may draw 1 symbol in the picture graph for a group of 5 tally marks. * Students may read the scale incorrectly for the heights of the bars. * Students may draw bars on a bar graph that do not accurately show the data.   **Students will be able to...**   * Convert a standard number line into a line plot by displaying data on top of each number. * Use rulers to measure classroom objects, recording the data, and displaying data on a line plot. * Evaluate data displayed in graphs and respond to questions and real-world problems based upon the given graph. |

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| **Unit: Geometry** |
| **Overview:**  • Reason with shapes and their attributes  Time Period: **Third Trimester** Length: **6 Weeks** |

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| **STAGE 1 – Desired Results** |

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| **Mathematical Practices**  1. Make sense of problems and persevere in solving them.  2. Reason abstractly and quantitatively.  3. Construct viable arguments and critique the reasoning of others.  4. Model with mathematics.  5. Use appropriate tools strategically.  6. Attend to precision.  7. Look for and make use of structure.  8. Look for and express regularity in repeated reasoning  Career Ready Practices  CRP4.  Communicate clearly and effectively and with reason.  CRP6. Demonstrate creativity and innovation.  CRP8.  Utilize critical thinking to make sense of problems and persevere in solving them.   |  | | --- | | **New Jersey Student Learning Standards- Mathematics** | |  |  |  |  | | --- | --- | | **Introduction- Grade 2** | | | |  |  | | --- | --- | | MA.2.2.4 | Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades. | | | | **Geometry**  2.G.A | | Reason with shapes and their attributes. | | 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. | | 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. |   **Cluster A: Reason with shapes and their attributes**  **Essential Questions…**   * What are attributes of geometric figures? * How can we combine or separate shapes to form new shapes? * What objects match three-dimensional shapes? * How would you describe the faces of a rectangular prism and the faces of a cube? * How can you build a rectangular prism? * What shapes can you name just by knowing the number of sides and vertices? * How do you find and count angles in two-dimensional shapes? * How do you use the number of sides and angles to sort two-dimensional shapes? * How do you find the total number of same-size squares that will cover a rectangle? * What are halves, thirds, and fourths of a whole? * How do you know if a shape shows halves, thirds, or fourths? * How do you find a half of, a third of, or a fourth of a whole? * How can drawing a diagram help when solving problems about equal shares?   **Enduring Understanding…**   * Geometric shapes are named by their attributes. * Geometric shapes can be broken apart into halves, thirds, and fourths/quarters.   **Students will know...**  I. Key Vocabulary/Terms: cube, rectangular prism, sphere, cylinder, cone, face, edge, vertex, vertices, side, quadrilateral, angle, sides, partition, equal size, equal shares, half, halves, half of, a third of, and whole  II. Key Concepts/Ideas: By the end of the year,   * To identify various geometric shapes. * To explain the similarities and differences in plane shapes.   III. Possible Misunderstandings:   * Students may think that any object with a curved surface is a sphere. * Students may overlook some of the edges or vertices when counting. * Students may build three-dimensional shapes made up of the correct number of units, but that are not rectangluar prisms. * Students may count a side or a vertex more than once. * Students may count an angle more than once. * Students may confuse the number of lines that they use to divide a shape and the number of equal parts. * Students do not divide the shape into the right number of equal parts.   **Students will be able to...**   * Describe the number of faces, vertices and edges in a solid figure * Identify and draw shapes based on a given set of attributes.  These include triangles, quadrilaterals, (squares, rectangles, and trapezoids), pentagons, hexagons, and cubes. * Use equal size squares to fill columns and rows of a rectangle to find the total number needed to completely cover the rectangle. * Divide circles and rectangles into two, three, or four equal parts. |

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| **STAGE 2 – Evidence of Learning** |

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| **Formative Activities, Tasks, or Projects:**   * Oral or written responses to the essential questions. * Materials produced as a result of class discussion or activities. * Using discipline vocabulary in appropriate context. * Quiz or test on information relevant to the unit. * 3-Minute Pause * Observation * Choral Response * Debriefing * Exit Card / Ticket * Hand signals * Inside-Outside Circle Discussion (Fishbowl) * Misconception Check * Questions and Answers * Quiz * Self-Assessment * Student Conference * Think-Pair-Share * Web or Concept Map   **Summative Activities, Tasks, or Projects:**   * Chapter Tests * Edmentum Beginning of the Year Assessment * Edmentum Middle of the Year Assessment * Edmentum End of the Year Assessment * District Mandated Tasks   **Authentic Assessment Suggestions**   * Performance Tasks * District Mandated Tasks |

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| **STAGE 3 – Learning Plan** |

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| **Instructional Map**  **Step 1: What is it we want and expect students to learn?**   * Read domain overview, learning goal, and essential questions to gain an initial understanding of the domain. * Analyze cluster of standards, vertical progression, test item specifications to determine full intent of standards (DOK) and student outcomes. * Determine measurable objectives using unpacked standards. Review the assessments for determining acceptable evidence.   **Step 2: How will they learn it?**   * Select problem-based learning/formative assessment tasks. * Develop learning experiences utilizing the textbook and selected tasks along with higher order questions stems.   **Step 3: How will we know when they have learned it?**   * Analyze students’ work reflecting on teacher practice and provide student feedback. * Provide additional assessments as necessary and collaboratively analyze the results.   **Step 4: How will we respond if they don’t learn it? How will we respond to those who already know it?**   * Using data analysis, develop small groups for remediation and enrichment.   Reassess student performance and provide opportunities for application.  **Unit Specific Accommodations and Modifications**  Gifted and Talent Accommodations and Modifications:   * Increase the level of complexity * Decrease scaffolding * Variety of finished products * Allow for greater independence * Learning stations, interest groups * Flexibility in assignments * Strategy and flexible groups based on formative assessment or student choice * Acceleration within a unit of study * Exposure to more advanced or complex concepts, abstractions, and materials * After mastery of a unit, provide students with more advanced learning activities, not more of the same activity   English Language Learners, Special Education, and At-Risk Accommodations and Modifications:  ELL Students:   * Remove unnecessary materials, words, etc., that can distract from the content * Provide appropriate scaffolding * Limit the number of steps required for completion * Tiered centers, assignments, lessons, or products * Deliver the content in “chunks” * Use technology, if available and appropriate * Differentiate homework and products * Define key vocabulary, multiple-meaning words, and figurative language * Use audio and visual supports, if available and appropriate * Meet with small groups to reteach idea/skill * Allow students to work at their own pace * Presenting ideas through auditory, visual, kinesthetic, & tactile means * Role play * Strategy and flexible groups based on formative assessment   Special Education Students:   * Remove unnecessary material, words, etc., that can distract from the content * Provide appropriate scaffolding * Tiered centers, assignments, lessons, or products * Deliver the content in “chunks” * Use technology, if available and appropriate * Varied questioning strategies * Provide background knowledge * Use audio and visual supports, if available and appropriate * Provide multiple learning opportunities to reinforce key concepts and vocabulary * Meet with small groups to reteach idea/skill * Present ideas using auditory, visual, kinesthetic, & tactile means * Strategy and flexible groups based on formative assessment * Differentiated checklists and rubrics, if available and appropriate   Differentiation Strategies for At Risk Students:   * Remove unnecessary materials, words, etc., that can distract from the content * Provide appropriate scaffolding * Limit the number of steps required for completion * Gradually increase the level of independence required * Tiered centers, assignments, lessons, or products * Deliver the content in “chunks” * Use technology, if available and appropriate * Varied questioning strategies * Provide background knowledge * Use audio and visual supports, if available and appropriate * Provide multiple learning opportunities to reinforce key concepts and vocabulary * Meet with small groups to reteach idea/skill * Presenting ideas through auditory, visual, kinesthetic, & tactile means * Strategy and flexible groups based on formative assessment   **504 Plans**  Students can qualify for 504 plans if they have physical or mental impairments that affect or limit any of their abilities to:   * communicate, see, hear, or speak * read, concentrate, think, or learn * stand, bend, lift, or work   Examples of accommodations in 504 plans include:   * preferential seating * extended time on tests and assignments * verbal, visual, or technology aids * modified textbooks or audio-video materials * behavior management support * verbal testing * excused lateness, absence, or missed classwork * pre-approved nurse's office visits and accompaniment to visits   **Differentiation**   |  |  |  |  | | --- | --- | --- | --- | | **High-Achieving Students** | **On Grade Level Students** | **Struggling Students** | **Special Needs/ELL** | | * Into Math Challenge * Game and Activity Cards * Small Group Mini Lesson: Ready For More * Unit Project Cards * STEM Task * Centers | * Into Math Reteach * Game and Activity Cards * Small Group Mini Lesson: On Track * Unit Project Cards * STEM Task * Centers | * Into Math Reteach * Game and Activity Cards * Small Group Mini Lesson: Almost There * Unit Project Cards * Interactive Tiers * STEM Task * Centers | * Into Math Reteach * Game and Activity Cards * Small Group Mini Lesson * Unit Project Cards * Tier 3 Intensive Intervention * Multilingual Glossary * STEM Task * Centers |  |  |  | | --- | --- | | Instructional Best Practices | | | **Required Best Practices**   * Use of Mathematical Vocabulary * Lesson Closure * Effective Questioning Techniques * Math Centers * Small Group Mini Lessons * Concrete-Pictorial- Abstract * Use of manipulatives | **Suggested Best Practices**   * Peer Collaboration * Think Aloud * Gallery Walks |   **Unit Specific Interdisciplinary Connections / Materials**  With interdisciplinary instruction, the subject areas are woven together and explored through an overarching theme or concept. We use math to help us solve everyday problems in the kitchen, in the garden, and for many of us at our jobs.    Brain research has shown that information in our brains is organized in schematic structures. These structures are made up of interconnected bits of information and serve as a framework for the knowledge we acquire. When a learner’s knowledge is connected, it is much more likely that they will apply the prior knowledge to a wide variety of new situations. They will acquire new information in a way that is more accessible and will be better able to relate it to previously acquired knowledge.    Students learn about patterns in math, science, social studies, and even literature. Because of this, they are much more likely to “see” these patterns when they encounter new situations. Since patterns are not only studied in math they are able to make the connection and gain the understanding that patterns can be found in many areas of their lives.  Interdisciplinary instruction allows students to understand the interconnectedness of the disciplines and makes learning more meaningful and relevant as fascinating connections are made across the subject areas.    **Science:**  **ETS1.B: Developing Possible Solutions**   * Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem’s solutions to other people. (secondary to 2-LS2-2)   **Patterns**   * Patterns in the natural world can be observed. (2-ESS2-2),(2-ESS2-3)   **Social Studies:**  6.1.2.CivicsPD.1: Engage in discussions effectively by asking questions, considering facts, listening to the ideas of others, and sharing opinions.  6.1.2.CivicsPR.3: Analyze classroom rules and routines and describe how they are designed to  benefit the common good.  6.1.2.CivicsPR.4: Explain why teachers, local community leaders, and other adults have a responsibility to make rules that are fair, consistent, and respectful of individual rights.  **Language Arts:**  RL.2.1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.  NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.  NJSLSA.W5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. |

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| **Additional Materials** |

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| Digital Resources   * Use the following resources on HMH Ed: Tier 1,2,3 Intervention, Response to Intervention, Vocabulary Games for each Chapter, iTools, Interactive Reteach, Interactive Challenge, Interactive Lessons, Interactive Module Practice * Prodigy, Edmentum, and Online Games   <https://achievethecore.org/>  <https://resources.newmeridiancorp.org/math-test-design/>  <https://www.state.nj.us/education/cccs/2016/math/>  <https://achievethecore.org/content/upload/Add%20Subtract%20Situation%20Types.pdf>  (Common Addition and Subtraction Situations)  <https://achievethecore.org/content/upload/Mult%20Div%20Situation%20Types.pdf>  (Common Multiplication and Division Situations)  [https://illuminations.nctm.org](https://illuminations.nctm.org/)  <https://www.state.nj.us/education/modelcurriculum/>  <http://archive.dimacs.rutgers.edu/nj_math_coalition/framework.html>  <https://parcc-assessment.org/released-items/>  <https://linden.instructure.com/courses/3955> | Printed Resources  Into Math Student Book  Practice and Homework Journal  Tools for Thoughtful Assessment  Math Tools |