**Subject**

**Elementary- 1st 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** |
|  | | |
| **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 first-grade mathematics program focuses upon four content areas. Students develop an understanding of addition and subtraction strategies, whole number relationships and place value, linear measurement, and the attributes of geometric shapes. To develop strategies and understanding for adding and subtracting whole numbers they use various models to add–to, take–from, put–together, take–apart and compare–to. The curriculum also provides opportunity for students to develop an understanding of the meaning and process of measurement in realistic settings. To build part–whole relationships, students also compose and decompose two-dimensional and three-dimensional figures. Recognizing similarities and differences between shapes supports the development of initial understandings of congruence and symmetry. Mathematical concepts are not presented in isolation but are linked to situations and contexts that are relevant to everyday life.

Course Instructional Materials

* + - Into Math Book
    - [**hmhco.com/ed**](http://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/>
  2. Power Standards from NJSLS
* 1.OA.A  Represent and solve problems involving addition and subtraction.
* 1.OA.B  Understand and apply properties of operations and the relationship between addition and subtraction.
* 1.OA.D Work with addition and subtraction equations.
* 1.NBT.A  Extending the counting sequence.
* 1.NBT.B  Understand place value.
* 1.NBT.C Use place value understanding and properties of operations to add and subtract.
* 1.MD.A Measure lengths indirectly and by iterating length units .

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

1st Grade

2022-2023

Routine Building and Center Development

**Unit 1 Ways to Add and Subtract**

Module 1 – Addition Strategies – September 8th – September 23rd

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

Module 2 – Subtraction Strategies – September 27th – October 14th

Module 3 – Properties of Operations – October 17th – October 28th

Module 4 – Apply the Addition and Subtraction Relationship – October 31st – November 18th

**Unit 2 Addition and Subtraction Situations and Data**

Module 5 – Understand Add To and Take From Problems – November 21st – December 2nd

Module 6 - Understand Put Together and Take Apart Problems – December 5th – December 22nd

Module 7 – Understand Compare Problems – January 2nd – January 18th

Module 8 – Data – January 19th – February 3rd

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

**Unit 3 Numbers to 120**

Module 9 – Understand Place Value – February 6th – February 10th

Module 10 – Count and Represent Numbers – February 13th – February 24th

Module 11 – Compare Numbers – February 27th – March 7th

**Unit 4 Addition and Subtraction in Base Ten**

Module 12 – Understand Addition and Subtraction with Tens and Ones – March 8th – March 22nd

Module 13 – Two-Digit Addition and Subtraction – March 23rd – April 6th

Module 14 – Three-Dimensional Shapes – April 17th – April 24th

Module 15 – Two-Dimensional Shapes – April 25th – May 3rd

Module 16 – Fraction Foundations – May 4th – May 12th

Module 17 – Measure Length – May 15th – May 24th

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

Module 18 – Measure Time – May 25th – June 2nd

Getting Ready for Grade 2 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

**Kindergarten**

**Geometry**

* Students named flat and solid shapes based on attributes.
* Students learned to distinguish between two-dimensional and three-dimensional shapes and describe them as flat or solid.
* Students learned to distinguish between two-dimensional and three-dimensional shapes. They learned to identify and describe 2-D shapes.

**Measurement & Data**

* Students learned to compare groups of objects and numbers up to 10.
* Students compared numbers to 10 and compared two objects directly using longer/shorter.
* Students were introduced to measuring the length of objects by laying a smaller object (the length unit) end to end to determine the length in units.

**Operations and Algebraic Thinking**

* Students recognized and wrote numerals to 20.
* Students counted and wrote numerals to 20 and used the counting sequence to count forward by tens and ones from any number to 100. They counted on and counted back to add and subtract within 20.
* Students become familiar with terms greater than, less than, and equal to as they compared numbers to 10. Students decomposed teen numbers into a group of ten ones and further ones.
* Students became familiar with the terms *greater than*, *less than*, and *equal to* as they compared numbers to 10. They were introduced to numbers greater than 10 by counting and writing numbers to 20.

**Numbers Base Ten**

* Students use base-ten blocks to model numbers to 100 and used a hundred chart to count by ones and tens.
* Students learned to count forward from any given number within the known sequence, 0-100.
* Students built on this skill as they counted on and counted back to solve addition and subtraction problems.
* Students used objects, drawings, and equations to represent addition and subtraction word problems within 10 and decomposed numbers less than or equal to 10.
* Students were introduced to addition and subtraction.
* Students were introduced to various meanings of addition and subtraction and solved word problems within 10.
* Students fluently added within 5.
* Students showed different ways to decompose numbers to 10.
* Students learned to count forward from any given number within the known sequence (counting on and back in subtraction strategies).
* Students began to develop an understanding of equality when they determined whether two groups of objects are equal in number and when they compared two numbers between 1 and 10.

**2nd Grade**

**Geometry**

* Students will identify and draw triangles, quadrilaterals, pentagons, hexagons, other polygons, and cubes based on defining attributes.
* Students will partition circles and rectangles into halves, thirds, and fourths. They will also partition rectangles into rows and columns of equal- sized squares.

**Measurement & Data**

* Students will create line plots that represent measurement data, picture graphs, and bar graphs that represent up to four categories.
* Students will use standard measurement units (e.g., inches, feet, centimeters, and meters) to determine and compare the lengths of objects.
* Students will learn to tell time to the nearest five minutes on both digital and analog clocks.

**Numbers Base Ten**

* Students will use counting on or counting back to add and subtract 2-digit numbers. They will also extend place-value concepts to 3-digit numbers, read and write numbers to 1,000, and count within 1,000 by 1s, 5s, 10s, and 100s.
* Students will extend their understanding of addition and subtraction of 2-digit numbers, using a variety of strategies.
* Students will add using a hundred chart, an open number line, ten frames, the strategies of breaking apart one or both addends, and compensation. They will subtract using a hundred chart and number line with and without regrouping.

**Operations & Algebraic Thinking**

* Students will develop fluency for addition and subtraction within 20.
* Students will continue to solve addition and subtraction problems using their understanding about addition and subtraction situations.
* Students will solve addition and subtraction problems within 1000 using concrete models and strategies based on place value, as they develop fluency within 100.
* Students will develop fluency for addition and subtraction within 100, as well as use concrete models and strategies based on place value to add and subtract within 1000.
* Students will use the relationship between addition and subtraction (fluency with facts to 20 and subtracting within 100).
* Students will work with addition and subtraction equations and will use them within 100 to solve one- and two-step word problems. They will compare numbers through 1,000.

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: Operation and Algebraic Thinking** |
| **Overview:**   * Represent and solve problems involving addition and subtraction. * Understand and apply properties of operations and the relationship between addition and subtraction. * Add and subtract within 20. * Work with addition and subtraction equations. * Time Period: **First 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 1** | | |  |  | | --- | --- | | MA.1.1.1 | Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers. They use a variety of models, including discrete objects and length-based models (e.g., cubes connected to form lengths), to model add-to, take-from, put-together, take-apart, and compare situations to develop meaning for the operations of addition and subtraction, and to develop strategies to solve arithmetic problems with these operations. Students understand connections between counting and addition and subtraction (e.g., adding two is the same as counting on two). They use properties of addition to add whole numbers and to create and use increasingly sophisticated strategies based on these properties (e.g., “making tens”) to solve addition and subtraction problems within 20. By comparing a variety of solution strategies, children build their understanding of the relationship between addition and subtraction. | |   **Operations and Algebraic Thinking**   |  |  | | --- | --- | | 1.OA.D | Work with addition and subtraction equations. | | 1.OA.A.1 | Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. | | 1.OA.D.7 | Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. | | 1.OA.A.2 | Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. | | 1.OA.B | Understand and apply properties of operations and the relationship between addition and subtraction. | | 1.OA.D.8 | Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. | | 1.OA.B.3 | Apply properties of operations as strategies to add and subtract. | | 1.OA.B.4 | Understand subtraction as an unknown-addend problem. | | 1.OA.C | Add and subtract within 20. | | 1.OA.A | Represent and solve problems involving addition and subtraction. | | 1.OA.C.5 | Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). | | 1.OA.C.6 | Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). |   **Cluster A: Represent and solve problems involving addition and subtraction**  **Essential Questions…**   * How do we find the missing number in a math sentence? * How do pictures show adding to? * How do you model adding to a group? * How do you model putting together? * How do you solve addition problems by making a model? * How can you show all the ways to make a number? * How do you solve addition word problems by drawing a picture? * How can acting out a problem help you solve the problem? * How can making a model help you solve a problem? * How do you choose when to add and when to subtract to solve a problem?   **Enduring Understanding…**   * We can find missing numbers in a math sentence/equation or word problem using addition and subtraction.   **Students will know...**  I. Key Vocabulary/Terms: addition sentence, add, plus, sum, minus, subtract, take away, difference, comparing, unknown, addend, less than, equal to, greater than, equation, doubles, counting on, and making a ten  II. Key Concepts/Ideas: By the end of the year,   * To solve for the missing number in addition and subtraction sentences/equations. * To solve addition and subtraction word problems; and add and subtract within 20, by using objects or drawings to represent the problem. * To solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g. by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.   III. Possible Misunderstandings:   * Students may not add the second addend to find how many. * When using manipulatives, students may count a cube more than once to find the sum. * Students may draw the wrong number of counters for the addends. * Students may add both numbers regardless of whether they are the parts or the whole. * Students may draw an incorrect number of symbols in the picture. * Students may choose the wrong operation for a problem.   **Students will be able to...**   * Listen to, read, comprehend and solve word problems with numbers up to 20. * Combine up to three sets of objects in the classroom (chairs, children, fingers, floor tiles, etc.) to find the total (of up to 20). * Use manipulatives, drawings, sounds, and mental images to add and subtract, and solve word problems within 20. * Use number lines, calendar, 100 chart, ten frame, and manipulatives to add or subtract by counting on or counting back. * Tell and write number stories to illustrate and solve number problems using verbal explanations, expressions, and equations within 20. * Show two or more ways to create the same total up to 20 with two addends using objects or drawings, and record the equations. * Use objects or drawings to find the addend that will make up to 20 when added to a given number, and record the answer with a drawing or equation. * Practice (both orally and in writing) facts for addition and subtraction within 20. * Use fact families to practice facts for addition and subtraction within 20. * Read, write, and solve equations using a symbol to represent the unknown number.   **Cluster B: Understand and apply properties of operations and the relationship between addition and subtraction**  **Essential Questions…**   * How are addition and subtraction related? * How does understanding that addition and subtraction are related help us to solve math problems? * What happens when you add 0 to a number? * Why can you add addends in any order? * What happens if you change the order of the addends when you add? * How can you add three addends? * How can you group numbers to add three addends? * How can you use an addition fact to find the answer to a subtraction fact? * How can you use addition to help you find the answer to a subtraction fact?   **Enduring Understanding…**   * Understand how addition and subtraction are related helps us to solve math problems.   **Students will know...**  I. Key Vocabulary/Terms: equal, fact family, add, subtract, unknown addend, order, first, and second  II. Key Concepts/Ideas: By the end of the year,   * To solve subtraction problems by adding. * To add three or more numbers by first adding a pair of numbers that equal 10 (when such a pair exists).   III. Possible Misunderstandings:   * Students may incorrectly change the order of the sum and an addend. * Students may write an incorrect sum for one of the addition facts in an exercise. * Students may compute the sum for the first two addends incorrectly and end up with an incorrect sum for all three addends. * Students may not add the third addend. * Students may not understand how to use the numbers from the addition sentence in the subtraction sentence. * Students may not understand that the same three numbers are used in the addition fact and the related subtraction fact.   **Students will be able to...**   * Use manipulatives, drawings, ten frames, and number lines to show that regardless of the order in which two groups of objects are added, the total is the same. * Use manipulatives, drawings, ten frames and number lines to show that regardless of the order in which three groups of objects are added, the total is the same. * Add three or more numbers by first adding a pair of numbers that equal 10 (when such a pair exists) as the most efficient strategy. * Show two or more ways to create the same total up to 20, using the two or more addends, using objects or drawings, and record the equations. * Use fact families and/or fact triangles to practice facts for addition and subtraction within 20 to understand subtraction as an unknown­ addend problem.   **Cluster C: Add and subtract within 20**  **Essential Questions…**   * What strategies do we use to figure out how much or how many we have? * Why are some addition facts easy to add? * Why are some subtraction facts easy to subtract? * How do you count on 1, 2, or 3? * What are doubles facts? * How can you use doubles to help you add? * How can you use what you know about doubles to find other sums? * What strategies can you use to solve addition fact problems? * How can you use a ten frame to add 10 and some more? * How do you use the make a ten strategy to add? * How can you make a ten to help you subtract? * How do you break apart a number to subtract? * How do related facts help you find missing numbers? * How do you know if addition and subtraction facts are related? * How can you use addition to check subtraction? * How can you add and subtract in different ways to make the same number? * How can addition and subtraction strategies help you find sums and differences? * What strategies can you use to add and subtract?   **Enduring Understanding…**   * Adding or subtracting changes how many or how much of something we have. * Using our number sense and strategies helps us solve addition and subtraction problems.   **Students will know...**  I. Key Vocabulary/Terms: doubles, doubles minus one, doubles plus one, make a ten, related facts, addition, putting together, adding to, counting on, making a ten, sum, part, whole, addend, subtraction, taking apart, taking from, counting back, difference, and equal  II. Key Concepts/Ideas: By the end of the year,   * To add and subtract within 20 by using all of the following strategies:                           ▪ Counting up or down                          ▪ Breaking apart 10 and adding or subtracting remainders                          ▪ Simplifying larger numbers into multiple smaller numbers  III. Possible Misunderstandings:   * Students may miscount the number of objects in each picture. * Students may circle the first addend in an addition fact instead of the greater addend. * Students may not model doubles facts. * Students may not break apart the addend to show the double. * Students may count the full ten frame as 1 instead of 10. * Students make 10 but they may not subtract from the second addend. * Students may consider the counters used to count from 10 to the total number as the answer. * Students may not know how to break apart the number they are subtracting. * Students may incorrectly find a missing number for related addition facts. * Students may think that facts are related if they add and subtact the same numbers. * Students may not write the correct difference. * Students may not find the correct number to complete the facts. * Students confuse operation symbols.   **Students will be able to...**   * Count up or down from any given number. * Build or decompose tens. * Decompose larger numbers into simpler terms (e.g. 8 becomes 5 and 3 or 2 and 3 and 3). * Use manipulatives to model composing and decomposing of tens. * Use number lines to count forward and backward. * Explore the concept of regrouping in addition and subtraction (not the algorithm).   **Cluster D: Work with addition and subtraction equations**  **Essential Questions…**   * How can different sets of numbers be equal? * What happens when you subtract 0 from a number? * How can you use a related fact to find an unknown number? * How do you choose when to add and when to subtract to solve a problem?   **Enduring Understanding…**   * Equations allow us to write mathematical sentences. * Understanding the equal sign indicates that both sides of an equation represent the same value.   **Students will know...**  I. Key Vocabulary/Terms: equation, equal, same, addition, plus, sum, counting on, making ten, subtract, take away, difference, and addend  II. Key Concepts/Ideas: By the end of the year,   * To distinguish between equal and not equal. * To create an equation with operations on each side of the equal sign. * To "fill in the blank" to an equation such as 5+?=7. * To complete an equation with expressions on both side of the equal sign.   III. Possible Misunderstandings:   * When subtracting 0, students may write 0 as the difference. * Students may model an addition fact with an unknown addend by joining cube trains for the given addend and sum. * Students may choose the wrong operation for a problem.   **Students will be able to...**   * Model equivalency through manipulatives. * Use a balance to demonstrate equality. * Apply prior knowledge of addition and subtraction rules to identify an unknown number (e.g. counting, making 10, modeling). * Interpret the equal sign to mean "the same as", for example 4 + 3 = 5 + 2, is interpreted as "4 + 3 is the same as 5 + 2." * Introduce addition and subtraction using a missing addend, e.g. 2 + \_\_\_ = 6. |

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| **Unit: Number and Operations in Base Ten** |
| **Overview:**   * Extend the counting sequence. * Understand place value. * Use place value understanding and properties of operations to add and subtract.   Time Period: **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 1** | | |  |  | | --- | --- | | MA.1.1.2 | Students develop, discuss, and use efficient, accurate, and generalizable methods to add within 100 and subtract multiples of 10. They compare whole numbers (at least to 100) to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing the numbers 11 to 19 as composed of a ten and some ones). Through activities that build number sense, they understand the order of the counting numbers and their relative magnitudes. | |   **Number and Operations in Base Ten**   |  |  | | --- | --- | | 1.NBT.C.6 | Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. | | 1.NBT.A | Extend the counting sequence. | | 1.NBT.A.1 | Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. | | 1.NBT.B | Understand place value. | | 1.NBT.B.2 | Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: | | 1.NBT.B.2a | 10 can be thought of as a bundle of ten ones — called a “ten.” | | 1.NBT.B.2b | The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. | | 1.NBT.B.2c | The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). | | 1.NBT.B.3 | Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. | | 1.NBT.C | Use place value understanding and properties of operations to add and subtract. | | 1.NBT.C.4 | Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g., base ten blocks) or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. | | 1.NBT.C.5 | Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. |   **Cluster A: Extend the counting sequence**  **Essential Questions…**   * How can we use what we already know about counting to count up to 120? * How can knowing a counting pattern help you count to 120? * How do numbers change as you count by tens to 120? * How can you model, read, and write numbers from 100 to 110? * How can you model, read, and write numbers from 110 to 120?   **Enduring Understanding…**   * Develop accurate counting strategies that build on the understanding of how the numbers in a counting sequence are related.   **Students will know...**  I. Key Vocabulary/Terms: count, number, zero, one, two, ect.  II. Key Concepts/Ideas: By the end of the year,   * To orally count on from any given number within the 0-­120 range. * To read and write numbers from the 0-­120 range. * Explore the odd/even concept.   III. Possible Misunderstandings:   * Students may omit the zero in the numbers 101 through 109. * Students may think that counting by tens means they skip ten numbers and write the eleventh number. * Students may add 10 more instead of 1 more.   **Students will be able to...**   * Group a collection of up to 120 objects into tens and ones using a variety of strategies. * Identify number sequences forward beginning at any number. * Write the corresponding numeral to develop an understanding of place value. * Use the number grid chart to see the position of numbers relative to each other. * Count from 0 to 120 and write the corresponding numerals.   **Cluster B: Understand place value**  **Essential Questions…**   * Why do we break numbers apart by tens and ones? * How can you use different ways to write a number as ten and ones? * How can you show a number as ten and ones? * How can you model and name groups of ten? * How can you group cubes to show a number as tens and ones? * How can you show numbers to 100 as tens and ones? * How can making a model help you show a number in different ways? * How can you compare two numbers to find which is greater? * How can you compare two numbers to find which is less? * How can you use symbols to show how numbers compare? * How can making a model help you compare numbers?   **Enduring Understanding…**   * We organize numbers by tens and ones to help us count and compare numbers.   **Students will know...**  I. Key Vocabulary/Terms: digit, one, ten, hundred, compare, greater than, less than, equal to, < , >, and =  II. Key Concepts/Ideas: By the end of the year,   * To identify the number of tens and ones in any two-digit number. * To compare two 2-­ digit numbers using the terms and symbols for greater than, less than, or equal to (>, < , =). * To compare number values of the same digit in different places (6 has a different value in 64 and 56). * To unitize objects.   III. Possible Misunderstandings:   * Students may give the number of tens a value of 1 instead of 10. * Students may count incorrectly when making a group of 10. * Students may count each group by ones instead of by tens. * Students may reverse the digits when writing the numbers. * Students may have difficulty differentiating the tens and ones. * Students write the correct words, but they may write the wrong symbol.   **Students will be able to...**   * Group cubes into sets of tens and ones. * Match cubes to corresponding numbers (11­19)—making sure they represent the "sets of tens" and the ones. * Bundle a group of ten ones as a whole unit called a “ten.” * Count groups as though they were individual objects (for example: 4 trains of 10 cubes have a value of 10 and would be counted as 40 rather than 4). * Use manipulatives to compare sets of objects as greater than, less than, or equal to. * Explain which of two two­-digit numbers is greater than, less than, or equal to using hundreds chart, number line, place value mats, base ten blocks, number cards, unfix cubes, ten frames. * Write math sentences representing the relationship of the numbers from the activity above using the symbols greater than, less than, or equal to (>, <, =).   **Cluster C: Use place value understanding and properties of operations to add and subtract**  **Essential Questions…**   * How does the position of a digit in a number affect the value of the number? * How can you identify numbers that are 10 less or 10 more than a number? * How can you add tens? * How can you subtract tens? * How can you use a hundred chart to count on by ones or tens? * How can models help you add ones or tens to a two-digit number? * How can making a ten help you add a two-digit number and a one-digit number? * How can you model tens and ones to help you add two-digit numbers? * How can drawing a picture help you explain how to solve an addition problem? * How can you use a hundred chart to show the relationship between addition and subtraction? * What different ways can you use to add and subtract?   **Enduring Understanding…**   * Place value is based on groups of ten. * Our number system is organized in groups of tens to help us add and subtract numbers.   **Students will know...**  I. Key Vocabulary/Terms: ones, tens, add, subtract, more, and less  II. Key Concepts/Ideas: By the end of the year,  By the end of the year,   * To add two-­digit by one­ digit numbers using concrete/pictorial models. * To explain how they add on to any given two­-digit number by ten. * To subtract multiples of ten from any two­-digit number using concrete/pictorial models.   III. Possible Misunderstandings:   * Students may change the value of the ones digit instead of the tens digit. * Students add the tens but write the sum as ones. * Students add instead of subtract. * Students may reverse digits in two-digit addends. * Students may add all the ones together and then combine the digits. * Students may add the number of tens to the number of ones. * Students may record tens as ones. * Students may count on instead of counting back. * When adding two-digit and one-digit numbers, students may add the one-digit number as a ten.   **Students will be able to...**   * Use cubes to add a two-­digit number to a one -­digit number and record the number sentence and new number. * Use cubes to show subtraction of numbers with multiples of ten (i.e. 90­20, 70­30). Show the relationship of these numbers using manipulatives and pictures and then match it with numbers. * Using pictures or manipulatives, show the addition of a two­ digit number and a one­-digit number.  Write or explain the thinking behind the work. * Use the hundred chart to add or subtract ten to any given number. * Orally express ten more or ten less than a given two- ­digit number. * Count forward and backward by ones from any given number to develop fluency of numbers. * Count forward by twos, fives, and tens to develop fluency of numbers. |

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| **Unit: Measurement and Data** |
| **Overview:**   * Measure lengths indirectly and by iterating length units * Tell and write time * 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 1** | | |  |  | | --- | --- | | MA.1.1.3 | Students develop an understanding of the meaning and processes of measurement, including underlying concepts such as iterating (the mental activity of building up the length of an object with equal-sized units) and the transitivity principle for indirect measurement. | |   **Measurement and Data**   |  |  | | --- | --- | | 1.MD.A | Measure lengths indirectly and by iterating length units. | | 1.MD.A.1 | Order three objects by length; compare the lengths of two objects indirectly by using a third object. | | 1.MD.A.2 | Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. | | 1.MD.B | Tell and write time. | | 1.MD.B.3 | Tell and write time in hours and half-‐hours using analog and digital clocks. | | 1.MD.C | Represent and interpret data. | | 1.MD.C.4 | Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. |   **Cluster A: Measure lengths indirectly and by iterating length units**  **Essential Questions…**   * How do we measure things? * How do we compare objects by length? * How do you order objects by length? * How do you order objects by length? * How can you compare lengths of three objects to put them in order? * How do you measure length using nonstandard units? * How do you use a nonstandard measuring tool to measure length? * How can acting it out help you solve measurement problems?   **Enduring Understanding…**   * We use objects to measure lengths of things.   **Students will know...**  I. Key Vocabulary/Terms: longest, shortest, compare, measure, order, length, and height  II. Key Concepts/Ideas: By the end of the year,   * To accurately measure and compare the lengths of objects using non-standard units of measure. * To measure the length of an object by starting at the beginning and measuring to the end, in a straight line, while placing units without gaps or overlaps and counting the units correctly.   III. Possible Misunderstandings:   * Students may draw their lines out of order. * Students may not combine information from both clues. * Students may not align the measuring tool with the end of the object. * Students may misread the problem.   **Students will be able to...**   * Measure a length of tape on the floor with three different non-standard units of measure, i.e., craft sticks, color tiles, footsteps, etc. * Measure an object drawn on paper using different non-standard units, i.e., paper clips, color tiles, cubes, etc. * Place three objects of different lengths in order or size and compare the lengths of two of the objects by using the third object. For example, the blue stick is longer than the pencil but shorter than the string of yarn.   **Cluster B: Tell and write time**  **Essential Questions…**   * How does the digital clock represent time? * How does the analog clock represent time? * How do you tell time to the hour on a clock that has only an hour hand? * How do you tell time to the half hour on a clock that has only an hour hand? * How are the minute hand and hour hand different for time to the hour and time to the half hour? * How do you know whether to draw and write time to the hour or half hour?   **Enduring Understanding…**   * There are sixty minutes in an hour. * An analog clock has a shorthand to represent hours and a longer hand to represent minutes. * On a digital clock, the number to the left of the colon represents the hour, and the number on the right of the colon represents the minutes after the hour.   **Students will know...**  I. Key Vocabulary/Terms: time, hour hand, half hour, hour, minute hand, minutes, half past, o’clock, analog clock, and digital clock  II. Key Concepts/Ideas: By the end of the year,   * To identify the difference between the hour hand and the minute hand on a clock. * To tell and write time to the hour and half hour on a digital and on an analog clock.   III. Possible Misunderstandings:   * Students may write the zeros in the wrong position. * Students may write the incorrect hour. * Students may confuse the hour hand and the minute hand. * Students may write the time on the digital clock incorrectly.   **Students will be able to...**   * Connect lines to match the time on a digital clock to the same time on an analog clock (to the hour or half hour). * Represent a time on an analog clock (to the hour or half hour). * Write the time represented on an analog clock (to the hour or half hour).   **Cluster C: Represent and Interpret Data**  **Essential Questions…**   * What are some ways we can collect, show, and interpret data? * What do the pictures in a picture graph show? * How do you make a picture graph to answer a question? * How can you read a bar graph to find the number that a bar shows? * How does a bar graph help you compare information? * How do you count the tallies on a tally chart? * Why is a tally chart a good way to show information that you have collected? * How can showing information in a graph help you solve problems?   **Enduring Understanding…**   * We use data to compare how two or more groups are similar or different. * By organizing and sorting data, we can describe and compare the numbers in a group.   **Students will know...**  I. Key Vocabulary/Terms: picture graph, bar graph, tally chart, tally mark, and data  II. Key Concepts/Ideas: By the end of the year,   * To analyze data by answering questions about the data, such as, “How many more are in one category than another, which category has the most and/or the least.” * To organize and represent a given set of data.   III. Possible Misunderstandings:   * Students may confuse *more* and *fewer* when comparing two numbers. * Students may have difficulty finding the value for a given bar in a bar graph. * Students may color the wrong number of cells for a bar in the graph. * Students may forget to count the diagonal line in a group of 5 tally marks. * Students may add when finding how many more are in one group than another. * Students may misinterpret information in the problem and draw bars incorrectly.   **Students will be able to...**   * Figure out ways to understand and represent the data, given a data set. * Respond to a survey question and figure out ways to represent the data with tally marks, cubes, drawings, or other materials. * Develop their own survey questions and make a plan for gathering the data. They collect and record classmates’ responses to their surveys. |

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| **Unit: Geometry** |
| **Overview:**   * Students will reason with shapes and their attributes.   Time Period: **Third Trimester** Length: **4 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 1** | | |  |  | | --- | --- | | MA.1.1.4 | Students compose and decompose plane or solid figures (e.g., put two triangles together to make a quadrilateral) and build understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine shapes, they recognize them from different perspectives and orientations, describe their geometric attributes, and determine how they are alike and different, to develop the background for measurement and for initial understandings of properties such as congruence and symmetry. | |   **Geometry**   |  |  | | --- | --- | | 1.G.A.3 | Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares. | | 1.G.A | Reason with shapes and their attributes. | | 1.G.A.1 | Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes. | | 1.G.A.2 | Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. |   **Cluster A: Reason with shapes and their attributes**  **Essential Questions…**   * Where are geometric shapes found in everyday objects? * How can we define shapes and compose new shapes? * Why would we compose or decompose shapes? * How can you identify and describe three-dimensional shapes? * How can you combine three-dimensional shapes to make new shapes? * How can you use a combined shape to build new shapes? * How can acting it out help you take apart combined shapes? * What two-dimensional shapes do you see on the flat surfaces of three-dimensional shapes? * How can you use attributes to classify and sort two-dimensional shapes? * What attributes can you use to describe two-dimensional shapes? * How can you put two-dimensional shapes together to make new two-dimensional shapes? * How can you combine two-dimensional shapes to make new shapes? * How can acting it out help you make new shapes from combined shapes? * How can you find shapes in other shapes? * How can you take apart two-dimensional shapes? * How can you identify equal and unequal parts in two-dimensional shapes? * How can a shape be separated into two equal shares? * How can a shape be separated into four equal shares?   **Enduring Understanding…**   * Identifying the properties of shapes can help sort them. * By breaking apart large shapes we can make new shapes and name them as halves, fourths/quarters.   **Students will know...**  I. Key Vocabulary/Terms: cone, cube, curved surface, cylinder, flat surface, rectangular prism, sphere, cirecle, rectangles, sides, square, triangles, vertices, hexagon, shape, two-dimensional, quadrilateral, three-dimensional, fourths, halves, quarters,  II. Key Concepts/Ideas: By the end of the year,   * To explain the similarities and differences in geometric shapes (plane and solids). * To identify fractional parts of a shape divided into halves and fourths/quarters. * To divide a circle or rectangle into fractional parts and use mathematical language to describe the action (halves, quarters, fourths). * To demonstrate with manipulatives that the more parts a shape is broken into, the smaller the parts will be.   III. Possible Misunderstandings:   * Students may not understand the use of *only* as they classify shapes based on whether their surfaces are curved and/or flat. * Students may misidentify the shapres. * Students may focus on the orientation of the blocks instead of their relative positions. * Students may confuse the shapes shown in the composite shape. * Students may forget to include some of the flat surfaces. * Some students may be unable to visualize how to combine the smaller blocks into the larger shape. * Students may use more than two pattern blocks to make the new shape. * Students may not distinguish between equal and unequal parts. * Students may draw a line that makes two unequal parts.   **Students will be able to...**   * Use attributes of shapes to sort them. * Identify shapes in a piece of art. * Use pattern blocks to combine shapes to make a new shape. * Use pattern blocks to identify how shapes can be broken apart to make smaller shapes and described by halves and fourths/quarters. |

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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 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 * 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:**  **Patterns**   * Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-LS3-1)   **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. (K-2-ETS1-2)   **Language Arts:**  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.  RL.1.1. Ask and answer questions about key details in a text.  NJSLSA.W5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.   SL.1.5 Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.  **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. |

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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 |