GREEN TOWNSHIP SCHOOL DISTRICT

Content Area: **Mathematics**
Course/Grade Level: **Grade 2**

Curriculum Committee Members: Grade Level Staff Members

Principal:
Jon Paul Bollette

Board Approval Date:
2/18/26

Mission:

A New Jersey education in Mathematics builds quantitatively and analytically literate citizens prepared to meet the demands of college and career, and to engage productively in an information-driven society. All students will have access to a high-quality mathematics education that fosters a population that:

- **leverages data in decision-making and as a lens for discussing, analyzing, and responding to practical questions.**
- **persists to make sense of and model problems arising in everyday life, society, and the workplace.**
- **thinks critically and strategically to assess quantitative relationships and to solutions to complex problems.**
- **employs precise reasoning and constructs viable arguments to deduce conclusions, recognize false statements and assess peers' reasoning.**
- **interprets, evaluates and critiques the mathematics embedded in social, scientific and commercial systems, as well as the claims made in the private and public sectors.**
- **communicates precisely when conveying, representing, and justifying both qualitative and quantitative perspectives.**

Key Performance and Benchmark Tasks/Assessments

Resources for help in creating assessments

Formative assessments:

- Iready
- Exit Tickets
- Homework
- Sprints

Summative Assessments:

Examples may include:

- Quizzes
- Module/Unit Tests

Benchmark Assessments:

- Teacher-created benchmark assessments to be given periodically during the year.

Alternative Assessments:

- Teacher modifies assignments and activities based on student needs.
- Oral assessments administered in place of written when necessary.
- Accommodation and modification ideas may be found here:
    - Modifications & Accommodations Menu
    - *Assessments other than paper & pencil tests See link for more info: http://education.gmu.edu/assets/docs/forms/mirs/assessment_brochure.pdf*

Integrated Accommodations & Modifications

Please utilize the link below for ideas and strategies to use with ***ELL, Students with IEPS & 504s, At-Risk Students and Gifted & Talented Students***.

The attached worksheets can be printed ahead of each unit during the planning phase to help the teacher plan for the needs of particular students in each class, allowing for differentiation per unit and per year. The worksheets contain suggested accommodations and modifications for Content & Material, Student Organization, Instructional Strategies, Assessments, Attention/Focus, Written Language, and Social/Behavioral.
Modifications & Accommodations Menu

Unit 1 Part 1: Place Value Concepts through Metric Measurement and Data
Unit 1 Part 2: Understanding Place Value Units

	Pacing:
Unit Summary: In topic A, students mathematize their world by organizing categorical data on bar graphs. Students use a scale to help them track data without counting all. Then they use bar graphs to solve *put together*, *take apart*, and *compare* problems. Students may use counting, one-to-one matching, or addition and subtraction strategies to solve problems. Topic B Metric measurement lays the groundwork for place value understanding.	
Essential Questions: Why are graphs useful? ● How are bar graphs similar to picture graphs? ● How are bar graphs different from picture graphs? ● How can a bar graph help us solve problems? ● How does a bar graph help us compare? ● What do we count?	**Enduring Understandings:** ● Data can be organized and represented in different ways to help us answer questions and make comparisons. ● Standard units of measurement are related, and understanding those relationships helps us measure and estimate accurately. ● Linear models (like rulers, number lines, and tape diagrams) show how numbers and measurements relate, helping us solve problems efficiently.

New Jersey Student Learning Standards	**Student Learning Objectives**	**Practices**
2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such	- create a graph by using symbols to represent votes. Then students read and interpret picture graphs to answer	MP.2 Reason abstractly and

as rulers, yardsticks, meter sticks, and measuring tapes. 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. Relate addition and subtraction to length. 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. 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. Represent and interpret data. 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 1 using information presented in a bar graph.	questions. This lesson introduces the terms *table*, *data*, *category*, and *key*. -compare data presented vertically and horizontally. -compare data presented vertically and horizontally. compare data presented vertically and horizontally. use 10 cm cards to make a meter stick and deepen their understanding of units within units reason about the relationship between metric units. use benchmark lengths, such as the width of their pinkie, to estimate the lengths of objects. use a tape diagram to compare an estimate with an actual measurement. use linear models, such as a measuring tape and a number line, to add efficiently. model subtracting efficiently on a linear model, such as a measuring tape or a number line. reason about how tape diagrams and number	quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.

	lines can be used to represent comparison problems solve *compare with difference unknown* measurement problems by using their understanding of the ruler as a number line.	

Interdisciplinary Connections
[2020 Career Readiness, Life Literacies, and Key Skills] **9.4.2.CI.1: Demonstrate openness to new ideas and perspectives** **9.4.2.CI.2: Demonstrate originality and inventiveness in work** **9.4.2.CT.2: Identify possible approaches and resources to execute a plan** **9.4.2.CT.3: Use a variety of types of thinking to solve problems**

Unit 1: Core Unit Content	
Vocabulary	***Key Concepts***
❑	❑

Unit 1: Instructional Materials & Resources	
Eureka Math	•

Unit 1: Assessments
Formative assessments:

- Iready
- Exit Tickets
- Homework
- Sprints

Summative Assessments:

Examples may include:

- Quizzes
- Module/Unit Tests

Benchmark Assessments:

- Teacher-created benchmark assessments to be given periodically during the year.

Unit 1: Accommodations & Modifications

Please utilize the link below for ideas and strategies to use with ELL, Students with IEPS & 504s, At-Risk Students and Gifted & Talented Students. Note possible accommodations or modifications for this unit below.
Modifications & Accommodations Menu

Unit 2: Addition and Subtraction Within 200

	Pacing:
Unit Summary:	
Essential Questions: ● What helps you decide the order in which you add? ● How does place value understanding help in adding two- and three-digit numbers? ● How can different forms, such as unit form or expanded form, help in adding like units? ● How do benchmark numbers help us add?	**Enduring Understandings:** ● Understanding place value helps us add efficiently and accurately. ● Flexible strategies help us add numbers in ways that make sense.

New Jersey Student Learning Standards	Student Learning Objectives	Practices
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.	Add and subtract within 100 to solve 1- and 2-step word problems with unknowns in any position. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Mentally add or subtract 10 or 100 from any given number between 100 and 900. Add up to four two -digit numbers using strategies based on place value and properties of operations.	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.

2.NBT.B.7 – Add and subtract within 1,000, 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. **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 properties of operations. **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.		

Interdisciplinary Connections

2020 Career Readiness, Life Literacies, and Key Skills

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Unit 2: Core Unit Content	
Vocabulary	***Key Concepts***
❏	❏

Unit 2: Instructional Materials & Resources	
Eureka Math	•

Unit 2: Assessments

Formative assessments:
- Lesson Exit Tickets
- Topic Tickets

Summative Assessments:
Module 2 Assessment

Formative assessments:
- Lesson Exit Tickets
- Topic Tickets

Unit 2: Accommodations & Modifications

Please utilize the link below for ideas and strategies to use with ELL, Students with IEPS & 504s, At-Risk Students and Gifted & Talented Students. Note possible accommodations or modifications for this unit below.
Modifications & Accommodations Menu

Unit 3: Shapes with Time and Fraction Concepts

	Pacing:
Unit Summary: In this unit, students explore geometry, fractions, and time by identifying and drawing shapes with specific attributes, partitioning shapes into equal parts, and telling time to the nearest five minutes. Through hands-on models and clear mathematical language, students learn to represent, explain, and connect these concepts to real-world situations.	
Essential Questions: ● How can the number of sides, angles, or faces help us identify and draw different shapes? ● How can we divide shapes into equal parts and use fraction words to describe the whole and its parts? ● How can we read, write, and explain time on both analog and digital clocks to the nearest five minutes?	**Enduring Understandings:** ● Shapes, fractions, and time can be understood by recognizing and using their key attributes. ● Models and precise language help us explain mathematical ideas clearly.

New Jersey Student Learning Standards	Student Learning Objectives	Practices
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.*	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. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity

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.* **2.MD.C.7** – *Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.* ***.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, and describe how the two measurements relate to the size of the unit chosen.*	words halves, thirds, half of, a third of, etc. and describe the whole as two halves, three thirds, and four fourths. Tell and write time using analog and digital clocks to the nearest five minutes using a.m. and p.m.	in repeated reasoning.

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9.4.2.CT.3: Use a variety of types of thinking to solve problems

Unit 3: Core Unit Content	
Vocabulary	***Key Concepts***
❑	❑

Unit 3: Instructional Materials & Resources	
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Unit 3: Assessments
Formative assessments: • Lesson Exit Tickets • Topic Tickets
Summative Assessments: Module 3 Assessment
Formative assessments: • Lesson Exit Tickets • Topic Tickets

Unit 3: Accommodations & Modifications

Please utilize the link below for ideas and strategies to use with ELL, Students with IEPS & 504s, At-Risk Students and Gifted & Talented Students. Note possible accommodations or modifications for this unit below.
Modifications & Accommodations Menu

Unit 4: Addition and Subtraction within 1,000

	Pacing: 26-30 days
Unit Summary: Students use their deepening place value understanding to mentally add and subtract tens and hundreds. Students use simplifying and place value strategies for addition as they make the next ten or hundred and use compensation to add larger numbers. Students expand upon their toolbox of simplifying strategies for subtraction by using familiar models. Students continue to relate place value disks and drawings to recording in vertical form for problems requiring up to two decompositions within 1,000. Students also decompose multiples of 100 and numbers with 0 in the tens place in one or two steps. Students use multiple strategies to find sums and differences, relating the operations of addition and subtraction. When finding the unknown in different positions, students apply their part–total understanding and may think of subtraction as an unknown addend problem.	
Essential Questions: -How can we use place value units to help us count and organize? -Why can we mentally add and subtract 10 or 100 from numbers? -How can we add and subtract tens and hundreds mentally? -How do tape diagrams help me write equations to solve problems? -What makes equations true? -How does a tape diagram help us understand comparison word problems?How does understanding the part–total relationship help us understand how to solve compare problems? -How can knowing partners to ten help you simplify addition problems that are harder to add in your head? -How is making a benchmark number a useful simplifying strategy for some addition problems? -How is compensation a useful strategy for addition? -How do you decide when to use compensation? -How does the place value drawing relate to vertical form? -How can I show a new unit in my drawing and in vertical form? -How do you know when you can compose a new unit? -How does using place value drawings and new groups below help us add? -How do you know when you can compose a new unit? -How does using place value drawings and new groups below help us add? -How do you choose an efficient strategy when you add up to four two-digit numbers? -How does place value understanding help you add up to four two-digit numbers? -When do I take from a ten or take from a hundred? -Why can I use addition to check my subtraction strategy? -When is compensation a useful subtraction strategy?	**Enduring Understandings:** Students use their deepening place value understanding to mentally add and subtract tens and hundreds. They apply this skill, coupled with their understanding of part–total relationships, to find the unknown in various positions. Students apply their place value understanding to solve two-step word problems and reason about equal expressions. By using the Read–Draw–Write process, students represent and solve compare with bigger unknown word problems. This problem type is among the most challenging for grade 2 students, as they come to see that fewer does not always suggest subtraction. Students use simplifying and place value strategies for addition as they make the next ten or hundred and use compensation to add larger numbers. For example, 280 + 197 may become 280 + 200 – 3. Students continue to relate place value disks and drawings to vertical form. They record up to two compositions within 1,000 by using the new groups below notation, notating a new unit of ten or hundred on the line below the problem. Students apply their toolbox of place value and simplifying strategies to solve various problems and defend the efficiency of their method, which may or may not be recorded in vertical form.Students expand upon their toolbox of simplifying strategies for subtraction by using familiar models and recording methods from module 2. Students apply the take from a ten or a hundred strategy to subtract within 1,000. They also explore three types of compensation as shown in the table.Students continue to relate place value disks and drawings to recording in vertical form for problems requiring up to two decompositions within 1,000. Students also decompose multiples of

-How does compensation help make it easier to subtract? -Why does this compensation strategy work? -When is this compensation strategy useful? -How do we know when we need to rename? -Why is it important to rename the total before you subtract? -How does the relationship between addition and subtraction help us solve problems? -How do part–total models help us understand and solve problems? -How does place value understanding help us decompose hundreds in one step? -How can we use the relationship between addition and subtraction to check our subtraction work? -How does place value understanding help us decompose hundreds in one step? -How can we use the relationship between addition and subtraction to check our subtraction work? -How are addition and subtraction related? -How can I use the relationship between addition and subtraction to find sums and differences? -How do tape diagrams help us understand how to solve a comparison problem? -Does the word more in a word problem always mean to add?	100 and numbers with 0 in the tens place in one or two steps. As with addition, students apply their toolbox of place value and simplifying strategies to solve various problems and explain why their strategies work. Students recognize that, while vertical form always works for subtraction, it often is not the most efficient strategy.Students use multiple strategies to find sums and differences, relating the operations of addition and subtraction. When finding the unknown in different positions, students apply their part–total understanding and may think of subtraction as an unknown addend problem. Students continue to use the Read–Draw–Write process to solve one- and two-step word problems. Students also solve compare with smaller unknown problems, another of the most challenging subtypes for grade 2 students, and they come to see that more does not always suggest addition. In the final lesson of the module, students apply their place value understanding to organize, count, and represent a collection of objects within 1,000.

New Jersey Student Learning Standards	Student Learning Objectives	Practices
Represent and solve problems involving addition and subtraction. 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.2	I can: -Organize, count, and represent a collection of objects. -Mentally add and subtract multiples of 10 and 100 with unknowns in various positions. -Solve multi-step word problems and reason about equal expressions. -Represent and solve compare with bigger unknown word problems.	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.

Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers. 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.	-Use the associative property to make a benchmark number to add within 1,000. -Use compensation to add within 1,000. -Use concrete models to add and relate them to written recordings. -Use place value drawings to represent addition and relate them to written recordings, part 1. -Choose and defend efficient solution strategies for addition. -Choose and defend efficient strategies to add up to four two-digit numbers. -Take from a ten or a hundred to subtract. -Use compensation to subtract within 1,000. -Take from a ten or a hundred to subtract. -Use compensation to subtract within 1,000. -Use concrete models to subtract and relate them to written recordings. -Use place value drawings to represent subtraction with one decomposition and relate them to written recordings. -Use place value drawings to represent subtraction with up to two decompositions and relate them to written recordings.	

	-Use place value drawings to represent subtraction from numbers with 0 in the tens and/or ones place and relate to a written recording. -Subtract by using multiple strategies and defend an efficient strategy. -Apply strategies to find sums and differences and relate addition to subtraction. -Solve compare with smaller unknown word problems. -Solve two-step addition and subtraction word problems. -Organize, count, and represent a collection of objects.	

Interdisciplinary Connections

2020 Career Readiness, Life Literacies, and Key Skills

9.4.2.CI.1: Demonstrate openness to new ideas and perspectives
9.4.2.CI.2: Demonstrate originality and inventiveness in work
9.4.2.CT.2: Identify possible approaches and resources to execute a plan
9.4.2.CT.3: Use a variety of types of thinking to solve problems

Unit 4: Core Unit Content

Vocabulary	*Key Concepts*
Module 4 does not introduce any new discipline-specific words. Familiar Terms: ❏ addend ❏ benchmark number	❏ Mental Place Value Strategies ❏ Strategies for Composing Tens and Hundreds Within 1,000 ❏ Simplifying Strategies for Subtracting Within 1,000 ❏ Strategies for Decomposing Tens and Hundreds Within 1,000

❑ column ❑ compose ❑ confirm ❑ decomposition ❑ difference ❑ efficiency ❑ end point ❑ equation ❑ expression ❑ fewer ❑ horizontal ❑ length ❑ less ❑ more ❑ number bond ❑ number line ❑ number sentence ❑ part–total ❑ record ❑ rename ❑ strategy ❑ subtraction ❑ tape diagram ❑ unit ❑ unknown ❑ unlabeled ❑ vertical ❑ Academic Verbs ❑ create ❑ defend ❑ exchange ❑ support	❑ Apply Efficient Addition and Subtraction Strategies

Unit 4: Instructional Materials & Resources

The following materials are needed to implement this module. The suggested quantities are based on a class of 24 students and one teacher. 1 Chart paper, tablet 1 Computer with internet access 1 Dot dice, set of 12 25 Dry-erase markers 12 Index cards 24 Learn books 25 Markers 24 Eureka Math2™ measuring tape 25 Eureka Math2™ place value disks set, ones to thousands 25 Pencils 25 Personal whiteboards 25 Personal whiteboard erasers 1 Projection device 5 Sticky notes, pad 1 Teach book 1 Unifix® Cubes, set of 300 Visit http://eurmath.link/materials to learn more. Please see lessons 1 and 24 for a list of organizational tools (cups, bowls, plates, trays, or rubber bands) suggested for the counting collection.	• Eureka Math Squared

Unit 4: Assessments

Formative assessments:

- Lesson Exit Tickets
- Topic Tickets
- Daily Teacher observations/records

Summative Assessments:

Module 4 Assessment

Alternative Assessments:

Unit 4: Accommodations & Modifications

Please utilize the link below for ideas and strategies to use with ELL, Students with IEPS & 504s, At-Risk Students and Gifted & Talented Students. Note possible accommodations or modifications for this unit below.
Modifications & Accommodations Menu

Unit 5: Money, Data, and Customary Measurement

	Pacing:
Unit Summary: In topic A, students Problem Solving with Coins and Bills Topic B: Use Customary Units to Measure and Estimate Length Topic C: Use Measurement and Data to Solve Problems	
Essential Questions: Why are graphs useful? ● How can place value strategies be used to solve problems with coins and bills? ● How does using a strategy, such as making a ten or a hundred, help you count? ● How can a given value be represented by using the fewest number of coins? ● Can different representations model the same word problem? ● How is it helpful to draw a model to represent a problem before solving? ● How is measuring with a different length unit, such as inches, similar to or different from measuring in centimeters? ● How do we measure accurately and select an appropriate measurement tool? ● How do benchmarks help us make reasonable estimates?	**Enduring Understandings:** ● Understanding place value and benchmarks helps us represent, count, and estimate amounts efficiently. ● Models and tools help us understand and solve real-world math problems.

New Jersey Student Learning Standards	Student Learning Objectives	Practices
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.* ***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.* ***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, and describe how the two measurements relate to the size of the unit chosen.*	Add and subtract within 100 to solve 1- and 2-step word problems with unknowns in any position. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Mentally add or subtract 10 or 100 from any given number between 100 and 900 After applying addition and subtraction strategies based on place value and the properties of operations, explain why these strategies work using drawings or objects [for example, 37 + 12 equals 30 + 7 + 10 + 2 (place value) which equals 30 + 10 + 7 + 2 (property of operations)]. Add up to four two -digit numbers using strategies based on place value and properties of operations. Add and subtract within 200, 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.	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.

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 standard length units*		

Interdisciplinary Connections
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Unit 5: Core Unit Content	
Vocabulary	***Key Concepts***
❏	❏

Unit 5: Instructional Materials & Resources	
Eureka Math Squared	•

Unit 5: Assessments

Formative assessments:

- Lesson Exit Tickets
- Topic Tickets

Summative Assessments:
Module 5 Assessment

Alternative Assessments:

Unit 5: Accommodations & Modifications

Please utilize the link below for ideas and strategies to use with ELL, Students with IEPS & 504s, At-Risk Students and Gifted & Talented Students. Note possible accommodations or modifications for this unit below.
Modifications & Accommodations Menu

Unit 6: Multiplication and Division Foundations

	Pacing: 18-20 Days
Unit Summary: Students begin work at the concrete level to create equal groups by using manipulatives. Students move to pictorial representations when they organize, count, and represent counting collections in which the items are pregrouped pictures, such as boxes of markers or pairs of socks. As students continue to model equal groups and write repeated addition equations, they look for and practice a more efficient way to add: by grouping addends into pairs and then adding. Finally, students work at a more abstract level when they represent the total of a given number of units with tape diagrams and repeated addition. This topic focuses on spatial relationships and structure as students organize the equal groups from topic A into rectangular arrays. As students compose and decompose arrays, they see that just as a ten is a unit composed of smaller units, ones, a row is a unit composed of smaller units, squares. Topic C naturally follows topic B, where students compose and manipulate the rows and columns of an array. In topic D, students explore the meaning of even and odd numbers, learning various interpretations and relating these interpretations to addition.	
Essential Questions: -What are equal groups? • How do repeated addition equations relate to equal groups? -How does the size of the group help us count? • How can we use the unit 10 to help us count? • How do repeated addition equations relate to equal groups? • How can I use a repeated addition equation to make equal group • How does a tape diagram show equal groups? • How can you use a tape diagram to write a repeated addition equation? • How does an array help us count a set of objects? • How does an array show equal groups? • How are arrays and repeated addition equations related? • How is decomposing arrays similar to decomposing numbers? • How does a repeated addition equation represent an array? • How does adding or subtracting a row or column change an array? • Why is the repeated addition equation the same for an array with gaps and an array without gaps? • What is the effect of describing an array by rows or by columns? • What are the attributes of a square array? • How is an array related to a repeated addition equation? • How does a math drawing show composition? • How does decomposing an array help us find the total? • How can arrays with the same total be composed in different ways? • How does an array show us that larger units are made up of smaller units? • How is composing and decomposing an array similar to or different from decomposing a number? • How do you know if a number is even? • What happens to an even number when 1 is added or subtracted? • How do you determine whether a number is even or odd? • What types of numbers, even or odd, can you use to compose an even number? • What types of numbers, even or odd, can you use to compose an odd number?	**Enduring Understandings:** Count and Problem Solve with Equal Groups Arrays and Equal Groups Rectangular Arrays as a Foundation for Multiplication and Division The Meaning of Even and Odd Numbers

New Jersey Student Learning Standards	Student Learning Objectives	Practices
Represent and solve problems involving addition and subtraction. 2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.1 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. Reason with shapes and their attributes. 2.G.A.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	I can… Compose equal groups and write repeated addition equations Organize, count, and represent a collection of objects. Use math drawings to represent equal groups and relate them to repeated addition. Represent equal groups with a tape diagram. Compose arrays with rows and columns and use a repeated count to find the total. Decompose arrays into rows and columns and relate them to repeated addition. Distinguish between rows and columns and use math drawings to represent arrays. Use square tiles to create arrays with gaps. Determine the attributes of a square array. Use math drawings to compose a rectangle.	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.

	Decompose an array to find the total efficiently. Reason about how equal arrays can be composed differently. Decompose an array and relate it to a number bond.	

Interdisciplinary Connections

2020 Career Readiness, Life Literacies, and Key Skills

9.4.2.CI.1: Demonstrate openness to new ideas and perspectives
9.4.2.CI.2: Demonstrate originality and inventiveness in work
9.4.2.CT.2: Identify possible approaches and resources to execute a plan
9.4.2.CT.3: Use a variety of types of thinking to solve problems

Unit 6: Core Unit Content

Vocabulary	*Key Concepts*
❏ **Array:** An array is a rectangular group or arrangement of objects. It is composed of equal groups organized into rows and columns. ❏ **Column:** A column is a vertical group. (Lesson 5) ❏ **Equal groups:** Equal groups have the same number of items in them. (Lesson 1) ❏ **Even number:** An even number is any number that is said while skip-counting by twos starting at 0. (Lesson 14) For example, 0, 2, 4, 6, 8, 10, 12. ❏ **Odd number:** An odd number is a number that is not even. (Lesson 15) For example, 1, 3, 5, 7, 9, 11, 13. ❏ **Repeated addition:** Repeated addition is when the same addend is	❏ Count and Problem Solve with equal groups ❏ Arrays and equal groups ❏ Rectangular arrays as a foundation for multiplication and division ❏ The meaning of even and odd numbers

added over and over again. (Lesson 1) ❑ **Row:** A row is a horizontal group. (Lesson 5)	

Unit 6: Instructional Materials & Resources	
The following materials are needed to implement this module. The suggested quantities are based on a class of 24 students and one teacher. 1 100-bead demonstration rekenrek 24 Blank paper, sheets 2 Chart markers 3 Chart paper, sheets 24 Colored pencils 1 Color tiles, plastic, 1″, set of 400 1 Computer or device 1 Dot dice, set of 12 24 Dry-erase markers 24 Envelopes 12 Eureka Math2™ Numeral Cards, sets 12 Eureka Math2™ measuring tapes 24 Learn books 25 Pencils 24 Personal whiteboards 24 Personal whiteboard erasers 1 Projection device 24 Wood rulers, inch and metric 25 Scissors 2 Small paper clips 5 Sticky notes, pads 1 Teach book Visit http://eurmath.link/materials to learn more. Please see lesson 2 for a list of organizational tools (cups, rubber bands, graph paper, etc.) suggested for the counting collection.	• Eureka Math Squared

Unit 6: Assessments
Formative assessments: ● Lesson Exit Tickets ● Topic Tickets
Summative Assessments: Module 6 Assessment
Alternative Assessments:

Unit 6: Accommodations & Modifications
Please utilize the link below for ideas and strategies to use with ELL, Students with IEPS & 504s, At-Risk Students and Gifted & Talented Students. Note possible accommodations or modifications for this unit below. Modifications & Accommodations Menu