Readington Township Public Schools

Grade Kindergarten Math

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I. OVERVIEW

Readington Township Public Schools' K-5 mathematics curriculum provides students with a strong foundation in mathematics content while promoting and instilling the skills of problem-solving, communication in mathematics, making mathematical connections, and reasoning. Throughout the delivery of the K-5 mathematics program, various tools and technology are employed, including manipulatives, calculators, software, apps, videos, websites, and computing devices (computers, tablets, smartphones, interactive whiteboards, etc.). A strong focus of the program in on promoting high levels of mathematical thought through experiences which extend beyond traditional computation. The program is directly correlated to the Student Learning Standards for Mathematics, which the State of New Jersey has adopted and it is designed to prepare students for the New Jersey state assessments.

In Kindergarten, instructional time focuses on two critical areas: representing and comparing whole numbers, initially with sets of objects than with written numerals, and describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics (NJSLS).

II. STUDENT OUTCOMES (Linked to New Jersey Student Learning Standards for Mathematics 2016)

Counting and Cardinality (K.CC)

A. Know number names and the count sequence.

1. Count to 100 by ones and by tens.
2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

B. Count to tell the number of objects.

4. Understand the relationship between numbers and quantities; connect counting to cardinality.
   a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
   b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
   c. Understand that each successive number name refers to a quantity that is one larger.
5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

C. Compare numbers.

6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.[1]
7. Compare two numbers between 1 and 10 presented as written numerals.

Operations and Algebraic Thinking (K.OA)

A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

1. Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings[2], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).
4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.
5. Demonstrate fluency for addition and subtraction within 5.

Number and Operations in Base Ten (K.NBT)

A. Work with numbers 11–19 to gain foundations for place value.

1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Measurement and Data (K.MD)

A. Describe and compare measurable attributes.

1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

B. Classify objects and count the number of objects in each category.

3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Geometry (K.G)

A. Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.
2. Correctly name shapes regardless of their orientations or overall size.
3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

B. Analyze, compare, create, and compose shapes.

4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).
5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
6. Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*

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

III. ESSENTIAL QUESTIONS AND CONTENT

A. Counting and Cardinality

Understanding Numbers

- What are the names of numbers?
- How can I count in sequence?
- How can I count to tell the numbers of objects?

B. Geometry

Identify, Describe, and Create Shapes

- What terms can I use to describe a shape?
- How can I describe and identify the relative position of a shape?

- What are the similarities and differences between two shapes?

C. Operations and Algebraic Thinking

Groups in Numbers

- What are addition and subtraction?
- What ways can I use to show addition or subtraction?
- What groups of numbers can I find in other numbers (decomposition)?

D. Number and Operations in Base Ten

Teen Numbers

- How can I show that a teen number is a group of ten and some ones?

Partners, Problem-Solving, and Tens

- How can I understand, solve, and retell problems that use math?
- How are teen numbers created?
- How can I use drawings and objects to represent teen numbers?

Teen Numbers and Problem-Solving

- What is place value?
- How can I use what I know about teen numbers to solve math problems?

E. Measurement and Data

Describe, Compare, and Classify

- What are measurable attributes?
- How do I sort objects into a category?
- What words do I use to describe and identify objects?

IV. STRATEGIES

- Interactive Smartboard Lessons
- Partner work
- Museum walks
- Math talk (students explain their thinking)
- Small Group Work
- Daily 5 Math
- Centers/ stations

V. ACCOMMODATIONS

- **Accommodations and Modification Addendum**

VI. ASSESSMENTS

- **Formative**
  - Independent student work
  - Ready Classroom Lesson Quizzes
  - Teacher Observations
  - Class Participation
  - Class Discussions
  - Class Assignments
  - Homework Assignments
  - Notebooks
  - Anecdotal Records
- **Summative**
  - Mid-Unit Test
  - **o** Unit Test
- **Alternative**
  - Live Online Assessment Tools (Kahoot, Brainpop)
  - Student Projects
  - Student Presentations
  - Self-Assessments
- **Benchmark (given September, March, and June)**
  - I-Ready Diagnostic
  - Performance Assessments

VII. MATERIALS

- **Core**
  - Ready Classroom Mathematics, Curriculum Associates, LLC
  - Teacher Manual Volumes 1 & 2
  - Student Books Volumes 1 & 2
  - Ready Classroom Teacher Toolbox
- **Supplemental Resources**
  - **Technology**
    - Brain Pop
    - IXL
    - Reflex Math
    - Online Tutorials (Learnzillion, Khan Academy, Math Antics)
    - Online Math Games (Math is Fun, Funbrain, Cool Math Games, Math Playground)

VIII. CAREER READINESS, LIFE LITERACIES, AND KEY SKILLS AND COMPUTER SCIENCE

Counting and Cardinality

- **Career Ready Practices**
  - Utilize critical thinking to make sense of problems and persevere in solving them.

    K.CC.A.3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

    Activity: The students will be given various objects in a brown bag. The students will count out the different objects and record in their math journal.
  - Utilize critical thinking to make sense of problems and persevere in solving them.

    K.CC.A.3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

    Activity: Students will fill out a daily calendar and school day count. Each day adding one more. During that time students will discuss patterns in the calendar and the school day count.

- **9.2 Career Awareness, Exploration, and Preparation**
  - **9.2.2.CAP.1:** Make a list of different types of jobs and describe the skills associated with each job.

    K.CC.A.1 Know number names and the count sequence. 1. Count to 100 by ones and by tens.

    Activity: Students will be given an assignment to be a bank teller. The students will count out pennies and dimes to practice counting by 1's and 10's. They will then record their answers in their journals.

- **9.4 Life Literacies and Key Skills**
  - **9.4.2.CT.3:** Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

    K.CC.B.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

    Activity: Students will be given a homework assignment to count out different items at home. Students will be asked to answer questions about how many do you need in your house, what happens if you run out? Where do you go to buy the items? Students will record their answers on a piece of paper and share out with their peers the next day.

- **Computer Science**
  - **8.1.2.CS.1:** Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.

    K.CC.C.6 Compare numbers. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

    Activity: The students will make a document by pasting in pictures and then typing the correlating number to the pictures.

Geometry

- **Career Ready Practices**
  - Utilize critical thinking to make sense of problems and persevere in solving them.

    K.G.B.4 Analyze, compare, create, and compose shapes. 4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners"), and other attributes (e.g., having sides of equal length).

    Activity: Students will sort 3- D shapes by their attributes. Students will then do another sort to show

another way. Students will then explain to their partners how and why they sorted the shapes.

- **9.2 Career Awareness, Exploration, and Preparation**
  - **9.2.4.A.2** Identify various life roles and civic and work-related activities in the school, home, and community.
    K.G.B.5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
    Activity: The students will be assigned to work with a partner and create a structure using at least 4 different shapes that would be able to hold a small wooden block. Students will then share out what was created and what they learned.

- **9.4 Life Literacies and Key Skills**
  - **9.4.2.CT.3:** Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
    K.G.A.3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").
    Activity: Students will create a sort for their partner. The partner will then determine how the shapes were sorted.

- **Computer Science**
  - **8.2.2.ED.3:** Select and use appropriate tools and materials to build a product using the design process.
    K.G.A.3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").
    Activity: Students will create a new three- dimensional object. Students will work in a small group. Students will then explain their process.

Operations and Algebraic Thinking

- **Career Ready Practices**
  - Demonstrate creativity and innovation.
    K.OA.A.2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
    Activity: Students will work with a partner. Each student will create number stories using manipulatives from the classroom. The partner will solve the problem on their whiteboards.

- **9.2 Career Awareness, Exploration, and Preparation**
  - **9.2.2.CAP.1:** Make a list of different types of jobs and describe the skills associated with each job.
    K.OA.A.1. Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
    Activity: Students will be given an assignment for homework to ask their parents, grandparents, and/ or neighbors how do they solve number problems. Are number problems part of their job?

- **9.4 Life Literacies and Key Skills**
  - **9.4.2.CT.3:** Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
    K.OA.A.1. Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
    Activity: Students will solve basic addition problems. After they are completed students will share with their partner how they solved the problem.

- **Computer Science**
  - **8.1.2.CS.1**: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
    K.OA.A 1. Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
    Activity: Students will use a technology device to help solve word problems.

Number and Operations in Base Ten

- **Career Ready Practices**
  - Demonstrate creativity and innovation.
    K.NBT.A.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g.,

18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.
Activity: Students will be given a homework assignment to collect objects from around the house. The students will then create equations representing, for example, 17+10+7, then try another way. Students will then share out with their peers their collection and equations.

- **9.2 Career Awareness, Exploration, and Preparation**
  - **9.2.2.CAP.1:** Make a list of different types of jobs and describe the skills associated with each job.
    K.NBT.A.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.
    Activity: Students will work in small groups. They will use base tens and ones to create and solve various equations. Discuss how these basic skills will help later in life.

- **9.4 Life Literacies and Key Skills**
  - **9.4.2.CI.1:** Demonstrate openness to new ideas and perspectives.
    K.NBT.A.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.
    Activity: Students will create a picture drawing of teen numbers. Students will then go on a museum walk to see how their classmates created their work.

- **Computer Science**
  - **8.1.2.CS.1:** Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
    K.NBT.A.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.
    Activity: Students will use the computer to show teen numbers represented with groups of tens and ones.

Measurement and Data

- **Career Ready Practices**
  - Utilize critical thinking to make sense of problems and persevere in solving them.
    K.MD.B.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.
    Activity: The students will be given a tray of 15 different objects. Students will work with a partner to sort their objects; shape, size, color, or any other way. Students will record their answers in their math journals. They will then try another sort.

- **9.2 Career Awareness, Exploration, and Preparation**
  - **9.2.2.CAP.2:** Explain why employers are willing to pay individuals to work. There are benefits and drawbacks to being an entrepreneur.
    K.MD.A.2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.
    Activity: Students will be given a homework assignment to ask family members a question about what they like or dislike, for example, pizza versus hamburgers. Students will record the data and then be asked to share key information about their findings. How many people liked pizza? How many more people liked hamburgers than pizza? Students will discuss how owning a restaurant, based on how many people come in, that has a correlation to how many people work there.

- **9.4 Life Literacies and Key Skills**
  - **9.4.2.CT.3:** Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
    K.MD.A.1: Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

Activity: The students find various objects in the classroom. They will then compare those objects observing weight and length.

- **Computer Science**
  - **8.1.2.DA.4:** Make predictions based on data using charts or graphs.
    K.MD.B.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.3
    Activity: Students will collect information from another kindergarten classroom. They will input their results in a spreadsheet that will generate a graph. They will then discuss their findings with the other students.

IX. PACING

A. Counting and Cardinality

Understand Numbers 0-5
Lessons 1-5 (25 days)

- Understand Counting
- Count and Write to 5
- Compare Within 5

Interdisciplinary Connections:
Literacy/ Math

- **K.CC.B.4** Understand the relationship between numbers and quantities; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
  SL.K.5. Add drawings or other visual displays to descriptions as desired to provide additional detail.
  Activity: Students will draw pictures to represent objects from 0-5.

Science/ Math

- **K.CC.B.4. A** When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
  K-PS2-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.*
  Activity: Students will create different types of ramps. The students will roll objects down the ramp. The students will count out more than one to roll at times, deciding if having more objects slows or speeds up the push.

Understand Numbers 6-10, Teen Numbers, and Counting to 100
Lessons 6-9, 27, 29, 30 (30 days)

- Count and Write to 10
- Understand 1 More
- Compare Within 10
- Sort and Count Objects

Interdisciplinary Connections:
Literacy/ Math

- **K.CC.B.5.** Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
  SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
  Activity: Students will work with a peer. They will group objects and discuss "how many?", adding and subtracting to become more familiar with math vocabulary.

Science/ Math

- **K.CC.A.** Know number names and the count sequence.
  K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.
  Activity: The students will keep a weather calendar. At the end of the month, they will count the different types of weather . "How many cloudy days?" for example.

B. Geometry

Shapes
Lessons 12-15 (21 days)

- Name Shapes
- See Position
- Compare Shapes
- Build Shapes

Interdisciplinary Connections:
Literacy/ Math

- **K.GO.A.1** Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

  W.K.2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

  Activity: Students will draw a picture using various shapes in their journal. Then label the shapes describing where it is.

Math/ Science

- **K-PS2-2.** Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.*

  K.G.B.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

  Activity: The students will use 3-D shapes to create a ramp and test other 3- D objects. The students will record their observations.

C. Operations and Algebraic Thinking

Addition and Subtraction
Lessons 10-11, 16-25 (50 days)

- Understand the Process of Addition and Subtraction Within 5
- Add and Subtract Within 10
- Find Missing Parts of 10
- Solve Word Problems

Interdisciplinary Connections:
Literacy/ Math

- **K.OA.A.3.** Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).

  W.K.8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

  Activity: Each lesson begins with a **Start** question that helps students connect to prior learning experiences. They may draw, write, or use words or symbols to communicate information they recall.

Science/ Math

- **K.OA.A.5.** Demonstrate fluency for addition and subtraction within 5.

  K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

  Activity: The students will draw and create a number story. The students will then write words to help explain their word problem. They can choose an addition or subtraction word problem.

D. Number and Operations in Base Ten

Teen Numbers and Counting by 1s and 10s
Lessons 26, 28, (25 days)

- Understand Concept of Teen Numbers
- Count and Make Teen Numbers
- Count to 100 by Ones and Tens

Interdisciplinary Connections:
Literacy/ Math

- **SL.K.1.** Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.

  K.NBT.A.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a

drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Activity: The students will be given various math problems. They will then talk through their understanding as a class.

Social Studies/ Math

6.1.2.CivicsCM.2: Use examples from a variety of sources to describe how certain characteristics can help individuals collaborate and solve problems (e.g., open-mindedness, compassion, civility, persistence).

K.NBT.A.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Activity: The students will be given various math problems. They will then talk through their understanding as a class.

E. Measurement and Data

Describe, Compare, and Classify

Lessons 31-32 (11 days)

- Describing objects with measurable attributes (length, height, weight)
- Comparing objects using measurable attributes

Interdisciplinary Connections:

Science/ Math

- **K-PS2.2** Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

K.MD.A.2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.

Activity: The students will be asked to create a ramp system. The students will then measure how far an object rolled. The students will compare the objects, for example the marble rolled father than the tennis ball.

Literacy/ Math

- **SL.K.4.** Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.

K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. 2. Directly compare two objects with a measurable.

Activity: Students will work with a peer to discuss the similarities and differences among objects. Giving as much detailed information as possible.

Readington Township Public Schools

Grade 1 Math

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Approval Date: July 19, 2022

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I. OVERVIEW

Readington Township Public Schools' K-5 mathematics curriculum provides students with a strong foundation in mathematics content while promoting and instilling the skills of problem-solving, communication in mathematics, making mathematical connections, and reasoning. Throughout the delivery of the K-5 mathematics program, various tools and technology are employed, including manipulatives, calculators, software, apps, videos, websites, and computing devices (computers, tablets, interactive whiteboards, etc.). A strong focus of the program in on promoting high levels of mathematical thought through experiences that extend beyond traditional computation.

In Grade 1, instructional time focuses on four critical areas: (1) developing an understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing an understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing an understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing, and decomposing geometric shapes. (NJSLS)

II. STUDENT OUTCOMES (Linked to New Jersey Student Learning Standards for Mathematics 2016)

OPERATIONS AND ALGEBRAIC THINKING (1.OA)

A. Represent and solve problems involving addition and subtraction.

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.[2]
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.

B. Understand and apply properties of operations and the relationship between addition and subtraction.

3. Apply properties of operations as strategies to add and subtract.[3] *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.) {Students need not use formal terms for these properties}*
4. Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.*

C. Add and subtract within 20.

5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
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).

D. Work with addition and subtraction equations.

7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*
8. Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = – 3, 6 + 6 = .*

NUMBER OPERATIONS IN BASE TEN (1.NBT)

A. Extend the counting sequence.

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.

B. Understand place value.

2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
    a. 10 can be thought of as a bundle of ten ones — called a "ten."
    b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.

c. 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).

3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

C. Use place value understanding and properties of operations to add and subtract.

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.
5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
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.

MEASUREMENT AND DATA (1.MD)

A. Measure lengths indirectly and by iterating length units.

1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.
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. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*

B. Tell and write time.

3. Tell and write time in hours and half-hours using analog and digital clocks.

C. Represent and interpret data.

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.

GEOMETRY (1.G)

A. Reason with shapes and their attributes.

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.
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.[4]
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.

III. ESSENTIAL QUESTIONS AND CONTENT

OPERATIONS AND ALGEBRAIC THINKING

- **Partners and Number Patterns Through 10**
  - What do I know about numbers less than 10?
  - What patterns can I find in numbers less than 10?
- **Addition and Subtraction Strategies**
  - What does it mean to add or to subtract?
  - Are there different ways to show addition or subtraction?
- **Unknown Numbers in Addition and Subtraction**
  - Can I use strategies to find missing numbers in addition or subtraction problems?

NUMBER OPERATIONS IN BASE TEN

- **Place Value Concepts**

- How can I use what I know about place value to read and write numbers up to 100 and beyond?
- **Place Value Situations**
  - What patterns are there in place value?
- **Two-Digit Addition**
  - How can I use what I know about place value to add numbers bigger than 10?

MEASUREMENT AND DATA

- **Comparisons and Data**
  - How can I collect, represent, and compare information that I have?
  - What should I use to measure how big things are?
  - How do I know what time it is?

GEOMETRY

- **Shapes, Attributes and Equal Shares**
  - What shapes can I make with other shapes?
  - How can I divide a shape into equal parts?

IV. STRATEGIES

- Teacher presentation
- Daily Routines
- Math Talk (solve, explain, question, and justify)
- Student Pairs
- Scenarios to act out
- Small Group instruction

V. ACCOMMODATIONS

- **Accommodations and Modification Addendum**

VI. ASSESSMENTS

- **Formative**
  - Independent student work
  - Ready Classroom Lesson Quizzes
  - Teacher Observations
  - Class Participation
  - Class Discussions
  - Class Assignments
  - Homework Assignments
  - Notebooks
  - Anecdotal Records
- **Summative**
  - Mid-Unit Test
  - Unit Test
- **Alternative**
  - Live Online Assessment Tools (Kahoot, Brainpop)
  - Student Projects
  - Student Presentations
  - Self-Assessments
- **Benchmark** (given September, March, and June)
  - i-Ready Diagnostic
  - Performance Assessments
  - Reflex Mathematics

VII. MATERIALS

- **Core**
  - Ready Classroom Mathematics, Curriculum Associates, LLC
  - Teacher Manual Volumes 1 & 2
  - Student Books Volumes 1 & 2
  - Ready Classroom Teacher Toolbox
- **Supplemental Resources**

- Technology
  - Brain Pop
  - IXL
  - Reflex Math
  - Online Tutorials (Learnzillion, Khan Academy, Math Antics)
  - Online Math Games (Math is Fun, Funbrain, Cool Math Games, Math Playground)

VIII. CAREER READINESS, LIFE LITERACIES, AND KEY SKILLS AND COMPUTER SCIENCE

Operations And Algebraic Thinking

- **Career Ready Practices**
  - Utilize critical thinking to make sense of problems and persevere in solving them.
    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.
    Activity: The students will solve word problems. After solving the word problems students will share out with a partner how they solved their problem and what tools they use.

- **9.2 Career Awareness, Exploration, and Preparation**
  - **9.2.2.CAP.1:** Make a list of different types of jobs and describe the skills associated with each job. Income is received from work in different ways including regular payments, tips, commissions, and benefits.
    1.OA.B4. Understand subtraction as an unknown-addend problem.
    Activity: Students will be given a homework assignment to ask their parents about ways they solve math problems at their place of employment. Students will share with their peers.

- **9.4 Life Literacies and Key Skills**
  - **9.4.2.CT.3:** Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
    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.
    Activity: Students will work with partners creating word problems. Each student will take turns solving their partner's work.

- **Computer Science**
  - **8.1.2.CS.1:** Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
    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.
    Activity: Students create a number story on the computer and solve the activity using pictures.

Number Operations In Base Ten

- **Career Ready Practices**
  - Demonstrate creativity and innovation.
    1.NBT.B.2.C 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).
    Activity: Students will be given an assignment to build a structure using base ten blocks. Once the structure is created students will then take it apart and count how many of each were used, giving totals of hundreds, tens, and ones.

- **9.2 Career Awareness, Exploration, and Preparation**
  - **9.2.2.CAP.1:** Make a list of different types of jobs and describe the skills associated with each job.
    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 <.

Activity: Students will work with a partner. Each partner will create a coin combination using pennies and dimes for various jobs. They will then compare the numbers using the symbols >, =, and <. For example, the baker is greater than the truck driver.

- **9.4 Life Literacies and Key Skills**
  - **9.4.2.CI.1:** Demonstrate openness to new ideas and perspectives.

    1.NBT.B.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.

    Activity: Students will explore various ways to decompose numbers when adding a two-digit number.

- **Computer Science**
  - **8.1.2.CS.1:** Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.

    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.

    Activity: Students will use the iReady lessons and games to strengthen their skills.

Measurement And Data

- **Career Ready Practices**
  - Demonstrate creativity and innovation.

    1.MD.A.1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.

    Activity: Students will be given an assignment to search for objects around the classroom. The objects will be sorted out at the desk. Students will then have a museum walk (students will walk to each desk articulating what they see).

- **9.2 Career Awareness, Exploration, and Preparation**
  - **9.2.2.CAP.1**: Make a list of different types of jobs and describe the skills associated with each job. Income is received from work in different ways including regular payments, tips, commissions, and benefits.

    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.

    Activity: Students will discuss in groups the importance of creating surveys, gathering data, and analyzing it. Students will discuss what types of jobs need information gathered to be successful.

- **9.4 Life Literacies and Key Skills**
  - **9.2.2.CAP.2:** Explain why employers are willing to pay individuals to work. There are benefits and drawbacks to being an entrepreneur.

    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.

    Activity: Students will discuss when owning a business why it is important to track your products being sold, customers who purchase products, and how making graphs help a business grow.

- **Computer Science**
  - **8.1.2.DA.4:** Make predictions based on data using charts or graphs.

    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.

Activity: Students will survey another class. They will input the results into a google spreadsheet and create a bar graph. The students will report out their findings.

Geometry

- **Career Ready Practices**
  - Work productively in teams while using cultural/global competence.

    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.

    Activity: Students will work together in groups to sort shapes by several different attributes. Sharing out and their reasoning for the sort.

- **9.2 Career Awareness, Exploration, and Preparation**
  - **9.2.2.CAP.1***:* Make a list of different types of jobs and describe the skills associated with each job.

    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.

    Activity: Students will work to create shapes and build a structure. They will then connect the importance of knowing how shapes fit together to make a sound structure. As a class discussion students will list jobs that require understanding shapes.

- **9.4 Life Literacies and Key Skills**
  - **9.4.2.CT.3:** Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

    1.G.A3. 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.

    Activity: Students will be given various shaped objects and decide if those objects can be divided into equal parts.

- **Computer Science**
  - **8.1.2.CS.1:** Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.

    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.

    Activity: Students will use the iReady math lessons to strengthen their skills.

IX. PACING

A. Operations And Algebraic Thinking

Numbers Within Ten

Lessons 1-10(50 days)

- Count on to Add
- Doubles and Near Doubles
- Missing Addends
- Count on to Subtract
- Add and Subtract Word Problems
- Strategies for Addition and Subtraction Facts

Numbers Within Twenty

Lessons 11-18 (40 days)

- Understanding Teen Numbers
- Make a Ten to Add
- Totals Greater than Ten
- Make a Ten to Subtract
- Finding an Unknown Number
- Word Problems to Twenty

Interdisciplinary Connections:

- ***Math/ Literacy***
  1. OA.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.
  NJSLSA.W4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
  Activity: Students will create and solve word problems up to 20

- ***Math/Visual and Performing Arts***
  1.OA2. 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.
  Visual and Performing Arts: 1.4.2.Cn11b: Collaborate on the creation of a short scene based on personal perspectives and understandings.
  Activity: Students will work with a partner. Each student will create a number story. The partner will act out the number story to solve the problem.

B. **Number Operations In Base Ten**
Counting and Place Value
Lessons 19-24 (24 days)
- Teens as Tens and Ones
- Place Value to 120
- Comparing numbers

Operations with Tens and Ones
Lessons 25-29 (21 days)
- Add and Subtract Tens
- Understand Ten More and Ten Less
- Add Two-Digit and One-Digit Numbers
- Add Two-Digit and Two Digit Numbers

Interdisciplinary Connections:
- ***Math/Science***
  1-LS1-1.A: Structure and Function All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow
  1.NBT.B.3 Compare two two-digit numbers based on the meanings of the tens and one digits, recording the results of comparisons with the symbols >, =, and <.
  Activity: Students will record and compare the growth of the plants in the classroom.

- ***Math/ Literacy***
  W.1.5. With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers and self-reflection, and add details to strengthen writing and ideas as needed.
  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 .
  Activity: Students will survey classmates asking which genre of writing they prefer. Students will use this information to compare the number of students that prefer fiction to nonfiction or other genres.

C. **Measurement And Data**
Comparing, Ordering, and Measuring
Lessons 30-32(15 days)
- Tell and Write Time
- Order Objects by Length
- Length Measurement

Interdisciplinary Connections:
- ***Math/Science***
  1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
  1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a

third object.
Activity*:* Students will line up pipes and determine if being in size order changes the sound.

- ***Math/ Literacy***
  1.MDC. 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 the other.
  SL.1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
  Activity: Students will use the data gathered about their favorite author to analyze findings. Example: How many more children like Mo William than Kevin Henkes.

D. **Geometry**
Analyzing, Composing, and Partitioning Shapes
Lessons 33-35 (13 days)
- Shape Identification
- Breaking Shapes into Equal Parts

Interdisciplinary Connections:
- ***Math/ Literacy***
  1.GA. 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.
  RI.1.1. Ask and answer questions about key details in a text.
  Activity: Students will read text about shapes and their attributes and respond to questions.
- ***Science/ Math***
  K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.*[Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]
  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.
  Activity: Students will use shapes to create to help reduce the warming effect of sunlight on an area.