Readington Township Public Schools

Grade Kindergarten Math

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Approval Date: September 2014
Updated NJ Standards August 2016

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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, smart phones, 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 then 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)

Know number names and the count sequence.

NJSLS.MATH.CONTENT.K.CC.A.1

Count to 100 by ones and by tens.

NJSLS.MATH.CONTENT.K.CC.A.2

Count forward beginning from a given number within the known sequence (not having to begin at 1).

NJSLS.MATH.CONTENT.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).

Count to tell the number of objects.

NJSLS.MATH.CONTENT.K.CC.B.4

Understand the relationship between numbers and quantities; connect counting to cardinality.

NJSLS.MATH.CONTENT.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.

NJSLS.MATH.CONTENT.K.CC.B.4.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.

NJSLS.MATH.CONTENT.K.CC.B.4.C

Understand that each successive number name refers to a quantity that is one larger.

NJSLS.MATH.CONTENT.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.

Compare numbers

NJSLS.MATH.CONTENT.K.CC.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]

NJSLS.MATH.CONTENT.K.CC.7

Compare two numbers between 1 and 10 presented as written numerals

Operations and Algebraic Thinking: Understand addition, and understand subtraction

NJSLS.MATH.CONTENT.K.OA.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.

NJSLS.MATH.CONTENT.K.OA.2

Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

NJSLS.MATH.CONTENT.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).

NJSLS.MATH.CONTENT.K.OA.A.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.

NJSLS.MATH.CONTENT.K.OA.A.5

Demonstrate fluency for add and subtract within 5.

Describe and compare measurable attributes.

NJSLS.MATH.CONTENT.K.MD.A.1

Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

NJSLS.MATH.CONTENT.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*.

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

NJSLS.MATH.CONTENT.K.MD.B.3

Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.[1]

Identify and describe shapes.

NJSLS.MATH.CONTENT.K.G.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*.

NJSLS.MATH.CONTENT.K.G.A.2

Correctly name shapes regardless of their orientations or overall size.

NJSLS.MATH.CONTENT.K.G.A.3

Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

Analyze, compare, create, and compose shapes.

NJSLS.MATH.CONTENT.K.G.B.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).

NJSLS.MATH.CONTENT.K.G.B.5

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

NJSLS.MATH.CONTENT.K.G.B.6

Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle*?"

III. ESSENTIAL QUESTIONS AND CONTENT

Unit 1, Understanding Numbers

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

Unit 2, Groups in Numbers

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

Unit 3, Teen Numbers

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

Unit 4, 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?

Unit 5, Teen Numbers and Problem-Solving

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

Unit 6, Measurement and Geometry

- What words do I use to describe and identify objects?

IV. STRATEGIES

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

V. EVALUATION

- Math Expressions Unit Tests
- Math Expressions End of Year Assessment
- Student work completed independently
- Student homework

VI. REQUIRED RESOURCES

- *Math Expressions Common Core* by Dr. Karen Fuson; Published by Houghton Mifflin Harcourt
- *Math Expressions* Math Workbook Volume 1 and 2
- *Math Expressions* Homework and Remembering Volume 1 and 2

Supplemental Resources

- IXL
- Brain Pop
- **Think Central**

VII. SCOPE AND SEQUENCE

Unit 1 Understand numbers 1-10 (26 Days)

- Counting and Cardinality 1-5
- Adding, subtracting, and Comparing Through 5
- Show numbers 1 Through 10
- Practice Numbers 1 Through 10

Unit 2 Groups in Numbers (27)

- 5- Groups in Numbers 6 to 10
- Addition and Subtraction Stories
- Practice Numbers 1 Through 10, the + pattern
- Numbers 1 Through 10, the – Pattern

Unit 3 Teen Numbers as Tens and Ones (31)

- Partners of 5 and 6
- Classifying
- Tens in Teen Numbers
- Build Teen Numbers

Unit 4 Partners, Problem Drawings, and Tens (31)

- Story Problems and Equations
- Practice with Comparing
- Equations and Teen Numbers
- Equations for Partners

Unit 5 Consolidation of Concepts (35)

- More Partners of 10
- Numbers 1 Through 20
- More Teen Numbers and Partners
- More Story Problems and Equations

Unit 6 Measurement and Geometry

- Describing objects with measurable attributes (length, height, weight)
- Comparing objects using measurable attributes
- Describing objects with proper shape names (two- and three-dimensional shapes)