Math 1 Overview - Course 4151

Content Area: **Math**
Course(s): **MATH-1**
Time Period:
Length: **Full Year**
Status: **Published**

Cover Page

EAST BRUNSWICK PUBLIC SCHOOLS

East Brunswick New Jersey

Superintendent of Schools

Dr. Victor P. Valeski

Mathematics

Math 1 - Course Number: 4151

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Course Overview

COURSE DESCRIPTION:

The overall mission of the mathematics curriculum is for students to communicate, make connections, reason and represent the world quantitatively in order to pose and solve problems. In Grade 1, instructional time will focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20 (this includes using a variety of models to model "add-to, take-from, put-together, take-apart, and compare" situations to develop contextual meaning for the operations of addition and subtraction as well as developing strategies to solve arithmetic problems with these operations); (2) developing understanding of whole number relationships and place value, including grouping in tens and ones (this includes comparing whole numbers (at least to 100) to develop understanding of and solve problems involving their relative sizes, thinking of whole numbers between 10 and 100 in terms of tens and ones and building number sense through hands-on activites); (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes (with the goal being to develop the background for measurement and for initial understandings of properties such as congruence and symmetry).

Textbooks and other resources

Textbook: Everyday Math 4 (Grade 1) by McGraw-Hill Education (2014).

- Student Math Journal, Vol. 1 (ISBN 978-0-02-143078-9)

- Student Math Journal, Vol. 2 (ISBN 978-0-02-143081-9)
- Student Home Links (ISBN 978-0-02-137958-3)
- Teacher's Resource Package, classroom resources and online resources accompanying text (connectED.mcgraw-hill.com)

Units

Course Scope and Sequence

Unit	Focus Skills	Approximate Time Frame	Quart
1	Counting	4 weeks	
2	Introducing addition Decomposing numbers Subtraction Number models	4 weeks	
3	Number Stories Counting on a number line Skip counting Using frames and arrows	4 weeks	
4	Length and Addition Facts Measuring length Using a bar graph Combinations of 10 Adding 3 numbers Doubles	4 weeks	
5	Place Value and Comparisons Use =, <, >, symbols Two digit addition and subtraction Place value	4 weeks	
6	Addition Fact Strategies Time to the hour Near doubles Making 10 Place value	4 weeks	
7	Subtraction Fact Strategies and Attributes of Shapes Fact families Attributes of shapes	4 weeks	

	Digital clocks		
8	Geometry Halves & fourths 2D and 3D shapes Time to the half hour	4 weeks	
9	**Choose from the following topics:** Two-Digit Addition and Subtraction Review: Time Review: 3-Dimensional Geometry	Time-permitting	

Standards

Grade One Overview

Operations and Algebraic Thinking

• Represent and solve problems involving addition and subtraction.

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

• Add and subtract within 20.

• Work with addition and subtraction equations.

Number and Operations in Base Ten

• Understand place value.

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

• Extend the counting sequence.

Measurement and Data

• Measure lengths indirectly and by iterating length units.

• Tell and write time.

• Represent and interpret data.

Geometry

• Reason with shapes and their attributes.

Standards for Mathematical Practice:

MP1. Make sense of problems and persevere in solving them.

MP2. Reason abstractly and quantitatively.

MP3. Construct viable arguments and critique the reasoning of others.

MP4. Model with mathematics.

MP5. Use appropriate tools strategically.

MP6. Attend to precision.

MP7. Look for and make use of structure.

MP8. Look for and express regularity in repeated reasoning

MA.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.
MA.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.
MA.1.OA.B.3	Apply properties of operations as strategies to add and subtract.
MA.1.OA.B.4	Understand subtraction as an unknown-addend problem.
MA.1.OA.C.5	Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
MA.1.OA.C.6	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
MA.1.OA.D.7	Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.
MA.1.OA.D.8	Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers.

MA.1.NBT.A.1	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
MA.1.NBT.B.2	Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
MA.1.NBT.B.2a	10 can be thought of as a bundle of ten ones — called a “ten.”
MA.1.NBT.B.2b	The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
MA.1.NBT.B.2c	The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
MA.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 <.
MA.1.NBT.C.4	Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g., base ten blocks) or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
MA.1.NBT.C.5	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
MA.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.
MA.1.MD.A.1	Order three objects by length; compare the lengths of two objects indirectly by using a third object.
MA.1.MD.A.2	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.
MA.1.MD.B.3	Tell and write time in hours and half-hours using analog and digital clocks.
MA.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.
MA.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.
MA.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.
MA.1.G.A.3	Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

Grading and Evaluation Guidelines

Grading Guidelines:

Students are regularly assessed for learning at developmentally appropriate levels throughout the school year. Items used for assessment may include: teacher observation, explanations of problems, ability to use manipulatives to model mathematical thinking, fact fluency assessments, extended constructed responses and unit tests. Common summative assessments for each unit of study are used to measure attainment of grade level goals.

In terms of proficiency level the East Brunswick grades equate to:

- **+: Special Commendation**
- **√: Steady Progress**
- **-: Needs Improvement**

Assessments of student progress are reported to parents as follows:

- Parent conferences are held twice a year
- Standards-based report cards are sent home four times a year
- Students in Grade 1 are evaluated through a portfolio. Specific mathematics skills are outlined and assessed both informally in verbal and written form and through the use of end of unit district oral and unit assessments.
- Unit Portfolio assessments, delineated for each unit, will include such measures as:
    - Written and Performance Measures of proficiency objectives (NJSLO)
    - Records of oral participation in classroom discussions related to unit objectives
    - Records of achievement of lesson objectives (i.e. activity pages, relevant homework)

Course Evaluation:

In terms of proficiency the East Brunswick grades are as follows:

- **+: Special Commendation**
- **√: Steady Progress**
- **-: Needs Improvement**

In Grade 1 Mathematics the goal is that a minimum of 95% of the students will meet at least the minimum proficiency level set for the course. The department will analyze the achievement of students on Unit Assessments, the mid-year assessment, the end of year test, and Final Course Grades. For final course grades the achievement of sub-groups identified by the state will be used to determine if modifications to the curriculum and instructional methods are needed.

Course evaluation requires the answering of the following questions:

1. Are course content, instruction and assessments aligned with the required NJ Student Learning

Standards?
2. Is instruction sufficient for students to achieve the Standards?
3. Do all students achieve the set proficiencies/benchmarks set for the course?

Other Details

Mathematics (AAAN)

Math 1

Course No. 4151

SCED

52031 Mathematics (Grade 1)

The Mathematics Grade 1 course help build a conceptual foundation in number, operation, and quantitative reasoning; patterns, relationships, and algebraic thinking; geometry and spatial reasoning; and measurement. This course also helps students to develop their numerical fluency and to make calculation predictions. Specific course content depends upon state learning standards for grade 1.