

HOWELL TOWNSHIP
PUBLIC SCHOOLS

**MATHEMATICS CURRICULUM
FRAMEWORK**

GRADE 1

BOARD APPROVED: August 23, 2017

Howell Township Public Schools
1st Grade Curriculum Map

Pacing	September	October	November	December	January	February	March	April	May	June
	Topic 2: Fluently Add and Subtract Within 10.	Topic 3: Addition Facts to 20: Use Strategies Topic 4: Subtraction Facts to 20: Use Strategies	Topic 1: Solve Addition and Subtraction Problems to 10.	Topic 7: Extend the Counting Sequence	Topic 8:Understand Place Value Topic 9:Compare Two-Digit Numbers	Topic 10:Use Models and Strategies to Add Tens and Ones Topic 11:Use Models and Strategies to Subtract Tens	Topic 5: Work with Addition and Subtraction Equations Topic 6: Represent and Interpret Data	Topic 12: Measure Lengths Topic 13: Time	Topic 14:Reason with Shapes and Their Attributes Topic 15: Equal Shares of Circles and Rectangles	Step Up to Grade 2
Calendar Math	September	October	November	December	January	February	March	April	May	June
NJSLS Domain	Operations and Algebraic Thinking	Operations and Algebraic Thinking	Operations and Algebraic Thinking	Number and Operations in Base Ten	Number and Operations in Base Ten	Number and Operations in Base Ten	Number and Operations in Base Ten Measureme nt and Data	Measureme nt and Data	Geometry	
District Assessments	End of Year Assessment STAR Math Fluency Assessment	Fluency Assessment	Fluency Assessment	Fluency Assessment	STAR Math Fluency Assessment	Fluency Assessmen t	Fluency Assessmen t	Fluency Assessment	Fluency Assessmen t	End of Year Assess ment

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Unit 1		
Unit Summary	NJSL Standards	Essential Questions
<p>Unit 1:</p> <p>In this unit, students will solve addition problems by using a number line to count on. Students will learn that using doubles can make adding numbers easier and that some addition facts can be solved by changing them to an equivalent fact with 10. Students will learn that there are many ways to word problems including using objects, drawing pictures, or writing an equation.</p> <p>Students will explore strategies for subtraction facts to 20. These strategies include counting to subtract, making ten to subtract, and using addition to subtract.</p> <p>Students will expand their understanding of addition by putting two parts together to make a whole and that addition equations are used to show the joining of parts. Students will learn that subtraction is taking away one part from the whole and that subtraction equations can be used to show subtraction situations in which one part is taken away from the whole. (Topics 1-4)</p>	<p>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.²</p> <p>1.OA.B.3 Apply properties of operations as strategies to add and subtract.³</p> <p>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.) <i>{Students need not use formal terms for these properties}</i></p> <p>1.OA.B.4 Understand subtraction as an unknown-addend problem. <i>For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.</i></p> <p>1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p> <p>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</p>	<p>How are addition and subtraction alike and how are they different?</p> <p>What strategies can you use while adding and subtracting?</p> <p>How can addition strategies help with subtracting?</p>

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	<p>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 $6 + 6 + 1 = 12 + 1 = 13$).</p> <p>1.OA.D.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 $8 + ? = 11$, $5 = \square - 3$, $6 + 6 = \square$.</p>	
<p>Learning Goals:</p> <ul style="list-style-type: none"> ● Students will be able to represent and solve problems involving addition and subtraction. ● Students will be able to add within 20. ● Students will be able to add and subtract within 20. ● Students will be able to understand and apply properties of operations and the relationship between addition and subtraction. 		
<p>Vocabulary: add, sum, plus, equals, equation, parts, whole, difference, subtract, minus, more, fewer, addend, number line, doubles facts, near doubles fact, open number line, doubles-plus-1 fact, doubles-plus-2 fact, make 10, fact family, related facts</p>		
<p>Fluency Expectations: To be able to identify numbers to 20.</p>		
<p>Unit 1 Student Goals: I will be able to identify numbers to 20.</p>		
Unit 2		
Unit Summary	NJSL Standards	Essential Questions
<p>Unit 2:</p> <p>In this unit, students will focus on counting to 120 by tens and ones, reading and writing</p>	<p>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.</p>	<p>How can you count and add using tens and ones?</p>

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<p>numbers to 120, and representing a number of objects with a written numeral for quantities to 120. (Topic 7)</p> <p>Students' strengthen their understanding of the place value system in preparation for 2-digit addition and subtraction. Students will learn that 2-digit numbers represent amounts of tens and ones. In addition, students learn that 2-digit numbers can be decomposed as groups of tens and a group of ones. Students' will use place-value concepts to compare numbers. (Topics 8 and 9)</p>	<p>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:</p> <p>a. 10 can be thought of as a bundle of ten ones — called a “ten.”</p> <p>b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.</p> <p>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).</p> <p>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 $<$.</p> <p>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.</p>	<p>What strategies can be used to compare numbers greater than 100?</p>
<p>Learning Goals:</p> <ul style="list-style-type: none">● Students will be able to extend the counting sequence.● Students will be able to compare 2-digit numbers.● Students will be able to understand place value.		
<p>Vocabulary: hundred chart, tens digit, row, ones digit, column, ten, ones, less, compare, greater than ($>$), less than ($<$)</p>		
<p>Fluency Expectations: 1.OA.C.6 Add and subtract within 20.</p>		
<p>Unit 2 Student Goals: I will be able to add and subtract within 20 using mental strategies.</p>		

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Unit 3		
Unit Summary	NJSLS Standards	Essential Questions
<p>Unit 3:</p> <p>In this unit, students' will use concrete models, drawings properties of operations, the relationship between addition and subtraction, and strategies based on place value to add and subtract numbers with up to 2-digit numbers. Students will be able to use reasoning to explain their models. (Topics 10 and 11)</p>	<p>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.</p> <p>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.</p> <p>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.</p>	<p>How do addition and subtraction relate to each other?</p> <p>How does the place value system work?</p> <p>What are ways to compare numbers to 120?</p> <p>What are ways to use tens and ones to add?</p> <p>How can I use what I know about subtraction to subtract tens?</p>
<p>Learning Goals:</p> <ul style="list-style-type: none"> ● Students will be able to use place value understanding and properties of operations to add and subtract. ● Students will be able to use place value understanding and properties of operations to add and subtract. 		
<p>Vocabulary: continuation of previous vocabulary</p>		

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Fluency Expectations: 1.OA.C.6 Add and subtract within 20.

Unit 3 Student Goals: I will be able to add and subtract within 20 using mental strategies.

Unit 4		
Unit Summary	NJSLS Standards	Essential Questions
<p>Unit 4:</p> <p>In this unit, students’ will deepen their understanding that the equal sign indicates that both sides of an equal sign represent the same value. Students will determine whether addition and subtraction equations are true or false, and they find the missing number in addition and subtraction equations. (Topic 5)</p> <p>Students will explore concepts of data analysis involving up to three categories of data. Students will collect, organize, represent, and interpret data. (Topic 6)</p>	<p>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.²</p> <p>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.</p> <p>1.OA.B.3 Apply properties of operations as strategies to add and subtract.³</p> <p>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.) <i>{Students need not use formal terms for these properties}</i></p> <p>1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. <i>For example, which of the following equations</i></p>	<p>How can addition and subtracting help you solve or complete equations?</p> <p>How are expressions and equations related?</p> <p>Why do we collect and analyze data?</p> <p>How can information be gathered, organized, and represented?</p> <p>How does collecting data help us solve problems or make decisions in our world?</p> <p>Can data be sorted or organized in different ways? Is one way better than another?</p>

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	<p><i>are true and which are false?</i> $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.</p> <p>1.OA.D.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 $8 + ? = 11$, $5 = \diamond - 3$, $6 + 6 = \diamond$.</p> <p>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.</p>	
<p>Learning Goals:</p> <ul style="list-style-type: none"> • Students will be able to work with addition and subtraction equations. • Students will be able to represent and interpret data. 		
<p>Vocabulary: expressions, equations, equal sign, tally marks, data, tally chart, picture graph, survey</p>		
<p>Fluency Expectations: 1.OA.C.6 Add and subtract within 20.</p>		
<p>Unit 4 Student Goals: I will be able to add and subtract within 20 using mental strategies.</p>		
<p>Unit 5</p>		
<p>Unit Summary</p>	<p>NJSLS Standards</p>	<p>Essential Questions</p>
<p>Unit 5:</p> <p>In this unit, students' will deepen their understanding of the measurement of length and time.</p> <p>Students will compare the lengths of objects using nonstandard units found around the classroom such</p>	<p>1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p> <p>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</p>	<p>What are ways to measure how long an object is?</p> <p>What are different ways to tell time?</p>

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<p>as paper clips and connecting cubes. Students will develop an understanding that the length of any object can be used as a nonstandard measurement unit of length.</p> <p>Students will be introduced to telling and writing time to the hour and half hour using both analog and digital clocks. Students will understand that the position of the hands on an analog clock determines the time shown on the clock. Students will be able to identify that the shorter hand is the hour hand and the longer hand is the minute hand. (Topics 12 and 13)</p>	<p>units that span it with no gaps or overlaps. <i>Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.</i></p> <p>1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.</p>	
<p>Learning Goals:</p> <ul style="list-style-type: none"> ● Students will be able to measure lengths indirectly and by iterating length units. ● Students will be able to tell and write time. 		
<p>Vocabulary: length, longer, longest, shorter, shortest, measure, length unit, hour, hour hand, minute, minute hand, o'clock, half hour,</p>		
<p>Fluency Expectations: 1.OA.C.6 Add and subtract within 20.</p>		
<p>Unit 5 Student Goals: I will be able to add and subtract within 20 using mental strategies.</p>		
<p>Unit 6</p>		
<p>Unit Summary</p>	<p>NJSLS Standards</p>	<p>Essential Questions</p>
<p>Unit 6:</p> <p>In this unit, students will deepen their understanding of defining and non-defining attributes of two-dimensional and</p>	<p>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.</p>	<p>What are some different names for equal shares?</p>

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three-dimensional shapes. Students will put together various shapes to create composite shapes, and then use the composite shapes to make new shapes. (Topics 14 and 15)	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.	How can you define shapes and create new shapes?
Learning Goals: <ul style="list-style-type: none">• Students will be able to reason with shapes and their attributes.• Students will be able to divide shapes into equal pieces.		
Vocabulary: two-dimensional shapes, sides, vertices, equal shares, halves, fourths, quarters		
Fluency Expectations: 1.OA.C.6 Add and subtract within 20.		
Unit 6 Student Goals: I will be able to add and subtract within 20 using mental strategies.		