

New Jersey Student Learning Standards for Mathematics and Student Learning Objectives

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Grade 1 – Strategies for Addition and Subtraction – Unit 1

Rationale

The primary focus of Unit 1 is addition and subtraction. Building upon the counting sequence mastered in Kindergarten, learners begin counting to 120, reading and writing numbers through 50 and representing objects with a written number. Learners build place value understanding as they learn that a ten is a bundle of ten ones and can be used to compose numbers 11 through 19.

An important conceptual understanding for their future work in mathematics is the meaning of the equal sign. Learners use this understanding to determine if addition and subtraction equations are true or false. Learners solve word problems using various strategies for addition and subtraction and use equations with an unknown in any position.

Introducing composite two-dimensional shapes is essential for expanding geometric skills and concepts from kindergarten. Grade 1 learners move beyond describing objects in the environment using two-dimensional shapes to composing new shapes from composite two-dimensional shapes.

Note: Double asterisks (**) indicate that the example(s) included within the New Jersey Student Learning Standard may be especially informative when considering the Student Learning Objective.

Grade 1 – Unit 1, Module A

Standard	Student Learning Objectives We are learning to ... / We are learning that ...
■ 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.	<ul style="list-style-type: none">▪ count to 120▪ count on from any number within 120▪ read numbers within 50▪ write numbers within 50▪ represent up to 50 objects with a written number

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Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<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 style="margin-left: 20px;">a. 10 can be thought of as a bundle of ten ones — called a “ten.”</p> <p style="margin-left: 20px;">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>	<ul style="list-style-type: none"> ▪ 10 can be thought of as a bundle of ten ones called a “ten” ▪ the numbers 11 to 19 are made up of one ten and one, two, three, four, five, six, seven, eight, or nine ones
<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.</p>	<ul style="list-style-type: none"> ▪ represent a word problem using objects, drawings, or equations using a symbol for the unknown ▪ solve addition and subtraction word problems within 10 involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions
<p>■ 1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p>	<ul style="list-style-type: none"> ▪ relate counting to addition ▪ relate counting to subtraction
<p>■ 1.OA.B.3 Apply properties of operations as strategies to add and subtract.³ <i>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}</p>	<ul style="list-style-type: none"> ▪ apply the commutative and identity properties as strategies to add and subtract
<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 are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.</i></p>	<ul style="list-style-type: none"> ▪ an equal sign means both sides of the equal sign have the same value in an addition or subtraction equation within 10 ▪ determine if equations involving addition and subtraction within 10 are true or false

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Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<p>■ 1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = \diamond - 3$, $6 + 6 = \diamond$.</i></p>	<ul style="list-style-type: none"> ▪ determine the unknown number that makes an equation involving addition or subtraction within 10 true**

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Grade 1 – Unit 1, Module B

Standard	Student Learning Objectives We are learning to ... / We are learning that ...
○ 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.	<ul style="list-style-type: none">▪ a composite shape is a shape built by combining other shapes▪ compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) to create a composite shape▪ compose new shapes from composite shapes

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Grade 1 – Place Value and More Strategies for Addition and Subtraction – Unit 2

Rationale

Continuing the counting sequence of Unit 1, learners read and write numbers up to 120. The major focus of Unit 2 is place value of two digit numbers as students learn to use the conceptual understanding of tens and ones in order to compare two-digit numbers. Learners build upon the properties of operations introduced in Unit 1 as they discover the relationship between addition and subtraction, understanding subtraction as an unknown-addend problem. They use this understanding as a strategy to add and subtract numbers within 20. While students develop their repertoire of addition and subtraction strategies, they use them in context with varied word problem situations including adding three whole numbers within 20. Learners continue to work towards fluency when adding and subtracting within 10, and extend their understanding of the equals sign as they apply its meaning to determine whether equations are true or false.

Building upon kindergarten skills of classifying objects into categories and sorting categories by count, grade 1 learners organize, represent and interpret data in up to three categories. Learners answer questions about the data that they have represented, reinforcing their numeracy skills. Learners also tell and write time to the hour.

Grade 1 – Unit 2, Module A

Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<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>	<ul style="list-style-type: none"> ▪ read numbers up to 120 ▪ write numbers up to 120 ▪ represent objects with a written number in sets within 120 objects
<p>■ 1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones.</p> <p style="padding-left: 20px;">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>	<ul style="list-style-type: none"> ▪ in a two-digit number, one digit represents the amount of tens and the other digit represents the amount of ones ▪ the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 are made up of some tens and 0 ones
<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>	<ul style="list-style-type: none"> ▪ compare two two-digit numbers using the meanings of the tens and ones digits ▪ compare two numbers using the symbols $<$, $>$, and $=$

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Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<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.</p>	<ul style="list-style-type: none"> ▪ represent a word problem using objects, drawings, or equations using a symbol for the unknown ▪ solve addition and subtraction word problems within 20 involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions
<p>■ 1.OA.B.3 Apply properties of operations as strategies to add and subtract. <i>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}</p>	<ul style="list-style-type: none"> ▪ apply the associative, commutative and identity properties as strategies to add and subtract
<p>■ 1.OA.B.4 Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.</p>	<ul style="list-style-type: none"> ▪ subtraction can be thought of as an addition problem with an unknown addend ▪ a related addition problem can be used to solve a subtraction problem
<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 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>	<ul style="list-style-type: none"> ▪ add and subtract within 20 using strategies such as counting on, making ten, and decomposing a number leading to a ten ▪ add and subtract within 20 using strategies such as relationship between addition and subtraction, and using easier or known sums within 10 ▪ working towards accuracy and efficiency for addition and subtraction within 10, use efficient strategies to add and subtract within 20
<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 are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.</i></p>	<ul style="list-style-type: none"> ▪ determine if equations involving addition and subtraction within 20 are true or false using the meaning of the equal sign

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Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<p>■ 1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = \diamond - 3$, $6 + 6 = \diamond$.</i></p>	<ul style="list-style-type: none"> ▪ determine the missing number (in any position) that makes an equation within 20 true

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Grade 1 – Unit 2, Module B

Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<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>	<ul style="list-style-type: none"> ▪ solve addition word problems with three whole numbers with a sum of 20 or less using objects, drawings or equations with symbols for the unknown
<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>	<ul style="list-style-type: none"> ▪ organize and represent data with up to three categories ▪ interpret data with up to three categories by stating observations about the data ▪ ask and answer questions about the total number of data points, the number in each category, and how many more or less are in one category than in another
<p>□ 1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.</p>	<ul style="list-style-type: none"> ▪ tell and write time to the hour using analog and digital clocks

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Grade 1 – Place Value and Two Digit Addition and Subtraction Strategies - Unit 3, Module A

Rationale

The major focus of Unit 3 is demonstrating place value understanding through addition and subtraction strategies. Learners demonstrate understanding of the composition of tens through the use of concrete models or drawings, and become more sophisticated in their use of strategies. They add and subtract within 100, working towards fluency within 10. Learners relate their concrete models and drawings to their strategy and explain the reasoning used.

Learners, knowing from Kindergarten that length is a measurable attribute of shapes, measure lengths of objects. They compare the lengths of two objects indirectly and lay multiple copies of a shorter object to measure a longer object. These concrete experiences with measurement build a foundation for measurement in second grade.

Grade 1 – Unit 3, Module A

Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<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>	<ul style="list-style-type: none"> ▪ sometimes it is necessary to compose tens when adding ▪ compose tens when adding two-digit numbers, if necessary ▪ when adding two-digit numbers, one adds tens and tens, ones and ones ▪ 10, 20, 30, 40, 50, 60, 70, 80, and 90 are multiples of 10 ▪ add a two-digit number and a one-digit number within 100 using concrete models (e.g., base ten blocks) or drawings ▪ add a two-digit number and a one-digit number within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction ▪ relate strategies for adding a two-digit and a one-digit number within 100 to a written method and explain the reasoning used to solve ▪ add a two-digit number and a multiple of 10, within 100, using concrete models (e.g., base ten blocks) or drawings ▪ add a two-digit number and a multiple of 10, within 100, using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction ▪ relate strategies for adding a two-digit number and a multiple of 10, within 100, to a written method and explain the reasoning used to solve

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Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<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>	<ul style="list-style-type: none"> ▪ mentally find 10 more or 10 less than any given two-digit number, without having to count ▪ explain how to mentally find 10 more or 10 less than any given two-digit number
<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>	<ul style="list-style-type: none"> ▪ subtract multiples of 10 from multiples of 10 using concrete models or drawings (multiples of 10 less than or equal to 90) ▪ subtract multiples of 10 from multiples of 10 using strategies based on place value or properties of operations (multiples of 10 less than or equal to 90) ▪ subtract multiples of 10 from multiples of 10 using the relationship between addition and subtraction (multiples of 10 less than or equal to 90) ▪ relate the strategy used to subtract multiples of 10 from multiples of 10 to a written method ▪ explain the reasoning used when subtracting multiples of 10 from multiples of 10 (multiples of 10 less than or equal to 90)
<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.</p>	<ul style="list-style-type: none"> ▪ represent a word problem using objects, drawings, or equations using a symbol for the unknown ▪ solve addition and subtraction word problems within 20 involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions
<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 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>	<ul style="list-style-type: none"> ▪ add and subtract within 20 using strategies such as counting on, making ten, decomposing a number leading to a ten, relationships within addition and subtraction, and using easier or known facts within 10 ▪ working towards accuracy and efficiency for addition and subtraction within 10, use efficient strategies to add and subtract within 20

New Jersey Student Learning Standards for Mathematics and Student Learning Objectives

Grade 1 – Unit 3, Module B

Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<p>■ 1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p>	<ul style="list-style-type: none"> ▪ length is measured from one endpoint to another ▪ use a third object to compare lengths of two objects that may not be moved ▪ order three objects by length
<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 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.</p>	<ul style="list-style-type: none"> ▪ the length of an object is the number of same-size length units that span it with no gaps or overlaps ▪ express the length of an object as a whole number of length units, by laying multiple copies of a shorter object end to end

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Grade 1 – Place Value Strategies and Composite Shapes - Unit 4, Module A

Rationale

The focus of unit 4 is solidifying learners place value understanding for addition within 100, as well as the use of various strategies to efficiently add and subtract within 20. They apply addition and subtraction strategies to solve word problems and become fluent with adding and subtracting within 10. Learners tell and write time to the half-hour, and partition shapes to develop a foundation for understanding fractions.

Learners extend their geometric understanding from Kindergarten as they identify defining and non-defining attributes of shapes. They extend their understanding of composite two-dimensional shapes to create composite three-dimensional shapes and to compose new shapes from composite three-dimensional shapes.

Grade 1 – Unit 4, Module A

Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<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>	<ul style="list-style-type: none"> ▪ add a two-digit number and a one-digit number within 100 using concrete models (e.g., base ten blocks) or drawings ▪ add a two-digit number and a multiple of 10, within 100, using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction ▪ relate strategies for adding a two-digit and a one-digit number within 100 to a written method and explain the reasoning used to solve ▪ relate strategies for adding a two-digit number and a multiple of 10, within 100, to a written method and explain the reasoning used to solve. ▪ when adding two-digit numbers, one adds tens and tens, ones and ones ▪ sometimes it is necessary to compose tens when adding ▪ compose tens when adding two-digit numbers, if necessary

New Jersey Student Learning Standards for Mathematics and Student Learning Objectives

Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<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.</p>	<ul style="list-style-type: none"> ▪ represent a word problem using objects, drawings, or equations using a symbol for the unknown ▪ solve addition and subtraction word problems within 20 involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions
<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 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>	<ul style="list-style-type: none"> ▪ add and subtract within 20 using strategies such as counting on, making ten, decomposing a number leading to a ten, relationships within addition and subtraction, and using easier or known facts within 10 ▪ add and subtract within 10 with accuracy and efficiency

New Jersey Student Learning Standards for Mathematics and Student Learning Objectives

Grade 1 – Unit 4, Module B

Standard	Student Learning Objectives We are learning to ... / We are learning that ...
<p>■ 1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.</p>	<ul style="list-style-type: none"> ▪ tell and write time to the hour using analog and digital clocks ▪ tell and write time to the half-hour using analog and digital clocks
<p>○ 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.</p>	<ul style="list-style-type: none"> ▪ partition means to split a shape into smaller parts, also called shares ▪ partition circles and rectangles into two equal shares and describe each share using the word “halves” or the phrase “half of” ▪ partition circles and rectangles into four equal shares and describe each share using the word “fourths” or the phrase “fourth of” ▪ decomposing shapes into more equal shares creates smaller shares
<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>	<ul style="list-style-type: none"> ▪ distinguish between defining and non-defining attributes ▪ build and draw shapes that have particular defining attributes
<p>○ 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.</p>	<ul style="list-style-type: none"> ▪ a composite shape is a shape built by combining other shapes ▪ compose three-dimensional shapes (cubes, rectangular prisms, cones, and cylinders) to create a composite shape ▪ compose new shapes from composite shapes