Grade 2: Math Expressions Common Core 2020

Course Overview

In **Math Expressions**, teachers create an inquiry-based environment and encourage constructive discussion. Students invent, question, model, represent and explore, but also learn and practice important math strategies. Through daily "Math Talk", students explain their methods and, in turn, become more fluent in them. Mathematics content and models connect and build across the grade levels in **Math Expressions** to provide a progression of teaching and learning that aligns precisely with the Common Core State Standards for Mathematics.

Scope and Sequence

Timeframe	Unit	Instructional Topics
31 Day(s)	Unit 1- Addition and Subtraction Within 20	1.1: Literacy Connection 1.2: Preview and Pre-Assess 1.3: Strategies for Addition and Subtraction 1.4: Addition and Subtraction Situations 1.5: More Complex Situations 1.6: Review and Assess
25 Day(s)	Unit 2- Addition within 200	2.1: Literacy Connection 2.2: Preview and Pre-Assess 2.3: Use Place Value 2.4: Add 2-Digit Numbers 2.5: Money and Fluency for Addition Within 100 2.6: Review and Assess
18 Day(s)	Unit 3- Length and Shapes	3.1: Literacy Connection 3.2: Preview and Pre-Assess 3.3: Length and Shapes 3.4: Estimate, Measure, and Make Line Plots 3.5: Review and Assess
33 Day(s)	Unit 4- Subtract 2-Digit Numbers	4.1: Preview and Pre-Assess 4.2: Totals of Mixed Coins and Bills 4.3: Multi-Digit Subtraction Strategies 4.4: Word Problems- Addition and Subtraction Within 100 4.5: Review and Assess
19 Day(s)	Unit 5- Time, Graphs, and Word Problems	5.1: Preview and Pre-Assess 5.2: Time

		5.3: Picture Graphs 5.4: Bar Graphs 5.5: Review and Assess
24 Day(s)	Unit 6- 3-Digit Addition and Subtraction	6.1: Preview and Pre-Assess 6.2: Numbers to 1,000 6.3: Adding to 1,000 6.4: 3-Digit Subtraction 6.5: 3-Digit Addition and Subtraction 6.6: Review and Assess
14 Day(s)	Unit 7- Arrays, Equal Shares, and Adding or Subtracting Lengths	7.1: Preview and Pre-Assess 7.2: Arrays and Equal Shares 7.3: Relate Addition and Subtraction to Length 7.4: Review and Assess

Unit 1- Addition and Subtraction Within 20

Duration of Unit: 31 Day(s)

Description of Unit: Children review making a ten to extend their fluency with addition and subtraction to totals through 20. Children solve all types of word problems they are expected to **master** in Grade 2.

Essential Questions and/or Enduring Understandings:
1.1: Literacy Connection
1.2: Preview and Pre-Assess
1.3: Strategies for Addition and Subtraction
1.4: Addition and Subtraction Situations
1.5: More Complex Situations
1.6: Review and Assess

Unit 1 Essential Standards:
I can add within 20
I can subtract within 20
I can solve unknown numbers in addition and subtraction equations
I can differentiate between odd and even numbers

ESSENTIAL Standards	Topics	Learning Targets
	1.1	Students will participate in collaborative conversations with diverse partners about kindergarten math topics with scaffolded support from adults.
		Students will ask and answer questions in order to seek help, get information, or clarify something that is not understood.
		Students will add drawings or other visual displays to descriptions as desired to provide additional detail.
		Students will notice, when speaking, listening and/or writing, if calculations are repeated.
	1.2	Students will demonstrate prior knowledge and application of determining whether a group of objects (up to 20) has odd or even number of members and write an equation to express an even number as the

		sum of two equal addends.
		Students will demonstrate prior knowledge and application of fluently adding and subtracting within 20.
		Students will demonstrate prior knowledge and application of how to add three or four 1-digit addends.
		Students will demonstrate prior knowledge and application of using addition and subtraction within 20 to solve one-and two-step word problems.
	1.3	Students will review the relationship between addition and subtraction equations, Math Mountains, and word problems.
		Students will find teen Math Mountains and relate to addition problems with two unknown addends.
		Students will practice addition and subtraction with totals less than or equal to 10.
		Students will use the Make-a-Ten strategy to add single-digit addends that have a teen total.
		Students will make a ten to solve unknown addend and subtraction word problems.
		Students will practice solving addition, subtraction and unknown addend equations with teen totals.
		Students will identify numbers as odd or even.
		Students will find totals using Plus/Minus 1 or the Doubles Plus/Minus 2 strategies.
		Students will write equations and equation chains and use vertical form for addition and subtraction.
		Students will add three or four 1-digit addends using strategies based on properties of addition.
	1.4	Students will represent and solve Add To and Take From word problems.
		Students will create and solve *Add To* and *Take From* word problems --unknown in all six positions.
		Students will introduce and solve *Put Together/Take Apart* problems.
		Students will solve *Put Together/Take Apart* problems that involve the use of group names and/or have both addends unknown.

		Students will represent and solve *Compare* word problems.
		Students will create, paraphrase, and solve *Compare* word problems.
		Students will solve mixed word problems and use the Make-a-Ten strategy to find totals.
		Students will complete formative assessment - Quick Quiz 2.
	1.5	Students will discuss and solve problems with not enough, extra, or hidden information.
		Students will represent and solve more complex *Compare* problems.
		Students will solve two-step word problems.
		Students will solve mixed word problems.
		Students will solve a variety of real world problem-solving situations.
		Students will complete formative assessment - Quick Quiz 3.
	1.6	Students will fluently add and subtract within 20.
		Students will determine whether a group of objects (up to 20) has odd or even number of members and write an equation to express an even number as the sum of two equal addends.
		Students will add three or four 1-digit addends.
		Students will use addition and subtraction within 20 to solve one-and two-step word problems.
NICE TO KNOW Standards		**Learning Targets**

Unit 2- Addition Within 200

Duration of Unit: 25 Day(s)

Description of Unit: Children use place value concepts to add numbers within 200 and they begin working toward fluency of addition within 100. They work with money: penny, nickel, and dime.

Essential Questions and/or Enduring Understandings:
2.1: Literacy Connection
2.2: Preview and Pre-Assess
2.3: Use Place Value
2.4: Add 2-Digit Numbers
2.5: Money and Fluency for Addition Within 100
2.6: Review and Assess

Unit 2 Essential Standards:
I can understand place value (hundreds, tens, ones) and compare numbers using less than, greater than, and equal
I can skip count by 2's, 5's, 10's, and 100's

ESSENTIAL Standards	Topics	Learning Targets
	2.1	Students will participate in collaborative conversations with diverse partners about kindergarten math topics with scaffolded support from adults.
		Students will ask and answer questions in order to seek help, get information, or clarify something that is not understood.

		Students will add drawings or other visual displays to descriptions as desired to provide additional detail.
		Students will notice, when speaking, listening and/or writing, if calculations are repeated.
	2.2	Students will demonstrate prior knowledge and application of how to add three or four 2-digit addends, sums within 200.
		Students will demonstrate prior knowledge and application of how to add two numbers with up to 2 digits, sums within 200.
		Students will demonstrate prior knowledge and application of how to compare two numbers within 200 using >, <, and = symbols.
		Students will demonstrate prior knowledge and application of how to find the value of a group of dimes, nickels and pennies, and write the value using $ and ¢ symbols.
		Students will demonstrate prior knowledge and application of how to represent, read, and write numbers to 200 using pictures, base ten numerals, number names, and expanded form.
		Students will demonstrate prior knowledge and application of how to skip count by 5s.
		Students will solve ten-based word problems.
	2.3	Students will represent numbers to 200 and identify patterns involving place value.
		Students will represent numbers to 200 in different ways.
		Students will represent numbers using base ten numerals, expanded form, and number names.
		Students will solve ten-based word problems.
		Students will add 10 or 100 to a given number.
		Students will compare two numbers using >, <, or + symbols.
		Students will complete formative assessment - Quick Quiz 2.
	2.4	Students will explore methods of 2-digit addition that involve making a new ten or hundred.

		Students will apply addition concepts and strategies to real world situations and solve 2-digit addition problems.
		Students will solve 2-digit addition exercises using the New Groups Below method.
		Students will choose a method to solve 2-digit addition exercises.
		Students will compare various solution methods for 2-digit addition.
		Students will complete formative assessment - Quick Quiz 2.
	2.5	Students will solve word problems involving dollar bills, dimes, and pennies, using $ and ¢.
		Students will skip count by 5s and find the values of collections of dimes, nickels, and pennies.
		Students will build fluency for addition within one hundred (100).
		Students will add three or four 2-digit addends.
		Students will solve a variety of real world problem-solving situations.
		Students will complete formative assessment - Quick Quiz 3.
	2.6	Students will represent, read, and write numbers to 200 using pictures, base ten numerals, number names, and expanded form.
		Students will compare two numbers within 200 using >, <, and = symbols.
		Students will add two numbers with up to 2 digits, sums within 200.
		Students will add three or four 2-digit addends, sums within 200.
		Students will skip count by 5s.
		Students will find the value of a group of dimes, nickels and pennies, and write the value using $ and ¢ symbols.
		Students will use addition within 200 and/or the values of pennies, nickels and dimes to solve word problems.

NICE TO KNOW Standards		Learning Targets

Unit 3- Length and Shapes

Duration of Unit: 18 Day(s)

Description of Unit: Children begin using rulers to determine lengths. They notice two-and three-dimensional shapes. They use measurement skills collected and organized data as they display measurements on line plots. They analyze measurements given in different units to explore the relationship between the size of a measuring unit and the number of units.

Essential Questions and/or Enduring Understandings:
3.1: Literacy Connection
3.2: Preview and Pre-Assess
3.3: Length and Shapes
3.4: Estimate, Measure, and Make Line Plots
3.5: Review and Assess

Unit 3 Essential Standards
I can estimate and measure length using cm, in, meter, and ft.

ESSENTIAL Standards	Topics	Learning Targets
	3.1	Students will participate in collaborative conversations with diverse partners about kindergarten math

		topics with scaffolded support from adults.
		Students will ask and answer questions in order to seek help, get information, or clarify something that is not understood.
		Students will add drawings or other visual displays to descriptions as desired to provide additional detail.
		Students will notice, when speaking, listening and/or writing, if calculations are repeated.
	3.2	Students will demonstrate prior knowledge and application of how to draw shapes having a given number of sides, angles, or equal faces.
		Students will demonstrate prior knowledge and application of how to estimate and then measure the length of an object using appropriate tools.
		Students will demonstrate prior knowledge and application of how to identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
		Students will demonstrate prior knowledge and application of how to measure the length of an object twice, in inches and centimeters, and describe how the measurements relate to the size of the units.
		Students will demonstrate prior knowledge and application of how to measure to determine how much longer one object is than another.
		Students will demonstrate prior knowledge and application of how to show measurement data on a line plot.
	3.3	Students will measure line segments; break apart centimeter lengths into partner lengths.
		Students will describe properties of squares, rectangles, triangles, pentagons, and hexagons.
		Students will estimate and measure the sides and the distances around squares and rectangles.
		Students will draw and name shapes with 3, 4, 5, and 6 angles.
		Students will estimate and measure sides of a triangle.
		Students will explain how 2-dimensional and 3-dimensional shapes are related.

		Students will draw rectangular prisms and cubes using faces.
		Students will complete formative assessment - Quick Quiz 1.
	3.4	Students will solve a variety of real world problem-solving situations.
		Students will estimate and measure with centimeters, and use a line plot to display measurement data.
		Students will estimate and measure with inches, feet, and yards. Show measurement data on a line plot.
		Students will measure length and show the data on a line plot.
		Students will determine the relationship between length and the size of the measurement unit.
		Students will complete formative assessment - Quick Quiz 2.
	3.5	Students will estimate and then measure the length of an object using appropriate tools.
		Students will measure the length of an object twice, in inches and centimeters, and describe how the measurements relate to the size of the units.
		Students will measure to determine how much longer one object is than another.
		Students will show measurement data on a line plot.
		Students will draw shapes having a given number of sides, angles, or equal faces.
NICE TO KNOW Standards		**Learning Targets**

Unit 4- Subtract 2-Digit Numbers

Duration of Unit: 33 Day(s)

Description of Unit: Children extend their work with money to include quarters and dollars. They use place value concepts to subtract numbers within 200 and they begin working toward fluency of subtraction within 100. They solve all the problem types from Unit 1, now using numbers within 200.

Essential Questions and/or Enduring Understandings:
4.1: Preview and Pre-Assess
4.2: Totals of Mixed Coins and Bills
4.3: Multi-Digit Subtraction Strategies
4.4: Word Problems- Addition and Subtraction Within 100
4.5: Review and Assess

Unit 4 Essential Standards:
I can identify coins and count money up to $1.00
I can solve one step addition and subtraction word problems within 100

ESSENTIAL	Topics	Learning Targets

Standards		
	4.1	Students will demonstrate prior knowledge and application of how to explain a subtraction method using place value.
		Students will demonstrate prior knowledge and application of how to solve problems involving dollar bills, quarters, dimes, nikles, and pennies, using $ and ¢ appropriately.
		Students will demonstrate prior knowledge and application of how to subtract within 200.
		Students will demonstrate prior knowledge and application of how to use addition and subtraction within 100 to solve one-and two-step word problems.
	4.2	Students will count by quarters, dimes, nickels, and pennies up to different totals.
		Students will find the value of a collection of dollar bills, quarters, dimes, nickels, and pennies.
		Students will solve subtraction story problems using a preferred method and explain the method used.
	4.3	Students will find unknown addends and use different methods to find addends for 100.
		Students will use student-generated methods to solve subtraction word problems.
		Students will solve 2-digit subtraction problems using the Expanded Method and the Ungroup First Method.
		Students will solve subtraction story problems using a preferred method and explain the method used.
		Students will review 2-digit subtraction methods and apply those methods to subtracting from 200.
		Students will decide when to ungroup in subtraction and subtract a 2-digit number from any number less than 200.
		Students will subtract 2-digit numbers from numbers with a zero in the tens or ones place.
		Students will relate ungrouping hundreds and tens in subtraction to ungrouping dollars and dimes.
		Students will complete formative assessment - Quick Quiz 2.

	4.4	Students will build fluency for subtraction within 100.
		Students will compare addition and subtraction methods and use addition and subtraction to solve word problems.
		Students will generate eight equations from Math Mountain and practice solving different types of word problems.
		Students will practice addition and subtraction within 100 and use those skills to solve word problems.
		Students will add up to calculate change from a dollar.
		Students will add up to solve unknown addend word problems.
		Students will solve word problems with start unknown or change unknown.
		Students will represent and solve *Compare* word problems.
		Students will solve mixed word problems.
		Students will solve two-step word problems.
		Students will solve a variety of real world problem-solving situations.
		Students will complete formative assessment - Quick Quiz 3.
	4.5	Students will solve problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ appropriately.
		Students will subtract within 200.
		Students will explain a subtraction method using place value.
		Students will use addition and subtraction within 100 to solve one-and two-step word problems.
NICE TO KNOW Standards		**Learning Targets**

Unit 5- Time, Graphs, & Word Problems

Duration of Unit: 19 Day(s)

Description of Unit: Children tell and write time to five minutes, using A.M. and P.M. They also will make and read picture graphs and bar graphs. They then use the information in graphs to solve *Put Together/Take Apart* and *Compare* word problems.

Essential Questions and/or Enduring Understandings:
5.1: Preview and Pre-Assess
5.2: Time
5.3: Picture Graphs
5.4: Bar Graphs
5.5: Review and Assess

Unit 5 Essential Standards:
I can tell time to the nearest five minutes

ESSENTIAL Standards	Topics	Learning Targets
I can complete and read basic bar and picture graphs		
	5.1	Students will demonstrate prior knowledge and application of how to draw a bar graph to represent a data set with up to four categories.
		Students will demonstrate prior knowledge and application of how to draw a picture graph to represent a data set with up to four categories.
		Students will demonstrate prior knowledge and application of how to solve *Compare* problems within 100.
		Students will demonstrate prior knowledge and application of how to solve *Put Together/Take Apart* or *Compare* problems using information from a picture graph or bar graph.
		Students will demonstrate prior knowledge and application of how to solve 2-step problems using information from a graph.
		Students will demonstrate prior knowledge and application of how to tell time from an analog or digital clock to the nearest 5 minutes.
		Students will demonstrate prior knowledge and application of how to use A.M. and P.M.
	5.2	Students will tell and write time to the hour including A.M. and P.M.
		Students will tell time to 5 minutes.
		Students will complete formative assessment - Quick Quiz 1.
	5.3	Students will draw picture graphs and solve problems using information from the graphs.
		Students will solve *Compare* and *Put Together/Take Apart* problems using information from a picture graph.
		Students will complete formative assessment - Quick Quiz 2.
	5.4	Students will draw bar graphs.

		Students will read and analyze information in horizontal and vertical bar graphs.
		Students will use information in bar graphs to solve *Put Together/Take Apart* and *Compare* problems having one or more steps to solve.
		Students will gather, organize, and display data.
		Students will interpret data in graphs and use the data for problem-solving.
		Students will solve a variety of real world problem-solving situations.
		Students will complete formative assessment - Quick Quiz 3.
	5.5	Students will tell time from an analog or digital clock to the nearest 5 minutes.
		Students will use A.M. and P.M.
		Students will draw a picture graph to represent a data set with up to four categories.
		Students will draw a bar graph to represent a data set with up to four categories.
		Students will solve *Put Together/Take Apart* or *Compare* problems using information from a picture graph or bar graph.
		Students will solve 2-step problems using information from a graph.
		Students will solve Compare problems within 100.
NICE TO KNOW Standards		**Learning Targets**

Unit 6- 3-Digit Addition and Subtraction

Duration of Unit: 24 Day(s)

Description of Unit: Children extend knowledge of place value and of addition and subtraction to numbers within 1,000. They now solve addition and subtraction word problems with totals up to 1,000.

Essential Questions and/or Enduring Understandings:
6.1: Preview and Pre-Assess
6.2: Numbers to 1,000
6.3: Adding to 1,000
6.4: 3-Digit Subtraction
6.5: 3-Digit Addition and Subtraction
6.6: Review and Assess

Unit 6 Essential Standards:
I can solve 2-digit and 3-digit addition and subtraction problems (with and without regrouping and ungrouping)

ESSENTIAL Standards	Topics	Learning Targets
	6.1	Students will demonstrate prior knowledge and application of how to add 10 or 100 to a given number 100-900 or subtract 10 or 100 from a given number 100-900.
		Students will demonstrate prior knowledge and application of how to add within 1,000.
		Students will demonstrate prior knowledge and application of how to compare two numbers within 200 using >, <, and = symbols.
		Students will demonstrate prior knowledge and application of how to count within 1,000; skip count by 10s and 100s.
		Students will demonstrate prior knowledge and application of how to read and write numbers to 1,000 using base-ten numerals, number names, and expanded form.
		Students will demonstrate prior knowledge and application of how to subtract within 1,000.
		Students will demonstrate prior knowledge and application of how to use addition and subtraction within 1,000 to solve word problems.
		Students will demonstrate prior knowledge and application of how to use drawings to represent amounts

		of hundreds, tens, and ones in 3-digit numbers.
	6.2	Students will count to 1,000 and represent 3-digit numbers.
		Students will explain the value of the digits in a 3-digit number and write 3-digit numbers in expanded form.
		Students will compare numbers within 999.
		Students will count by ones and tens, add and subtract 10 from a number, and read and write number names for 3-digit numbers.
		Students will use addition exercises to show place value, and apply knowledge of place value to word problems.
		Students will complete formative assessment - Quick Quiz 1.
	6.3	Students will explain the methods used to solve addition problems and discuss good explanations and good questions.
		Students will add within 1,000 using drawings and strategies based on place value.
		Students will use the Adding Up method to solve unknown addend problems with 3-digit numbers.
		Students will complete formative assessment - Quick Quiz 2.
	6.4	Students will subtract 3-digit numbers from hundreds numbers through 1,000.
		Students will subtract from 3-digit numbers with a zero in the ones or tens place.
		Students will subtract from any 3-digit number, with or without ungrouping.
		Students will practice subtracting 3-digit numbers with and without ungrouping.
		Students will complete formative assessment - Quick Quiz 3.
	6.5	Students will practice addition and subtraction with 3-digit numbers and use the relationship between addition and subtraction to check answers.

		Students will use addition and subtraction within 1,000 to solve word problems.
		Students will solve a variety of real world problem-solving situations.
		Students will complete formative assessment - Quick Quiz 4.
	6.6	Students will use drawings to represent amounts of hundreds, tens, and ones in 3-digit numbers.
		Students will read and write numbers to 1,000 using base-ten numerals, number names, and expanded form.
		Students will compare two 3-digit numbers using >, =, < symbols to record the results of the comparison.
		Students will count within 1,000; skip count by 10s and 100s.
		Students will add 10 or 100 to a given number 100-900 or subtract 10 or 100 from a given number 100-900.
		Students will add within 1,000.
		Students will subtract within 1,000.
		Students will use addition and subtraction within 1,000 to solve word problems.
NICE TO KNOW Standards		**Learning Targets**

Unit 7- Arrays, Equal Shares, and Adding and Subtracting Lengths

Duration of Unit: 14 Day(s)

Description of Unit: Children are introduced to arrays. They then use their measurement skills to partition rectangles into rows and columns to determine equal shares. They extend their knowledge of equal shares using paper folding and drawings. They then solve word problems about addition and subtraction of lengths and show these operations on a number line diagram.

Essential Questions and/or Enduring Understandings:

7.1: Preview and Pre-Assess

7.2: Arrays and Equal Shares

7.3: Relate Addition and Subtraction to Length

7.4: Review and Assess

Unit 7 Essential Standards:

ESSENTIAL Standards	Topics	Learning Targets
	7.1	Students will demonstrate prior knowledge and application of how to partition a rectangle into rows and columns of same-size squares and find the total number of them.
		Students will demonstrate prior knowledge and application of how to partition circles and rectangles into 2 halves, 3 thirds, and 4 fourths.
		Students will demonstrate prior knowledge and application of how to recognize that equal shares of identical wholes need not have the same shape.
		Students will demonstrate prior knowledge and application of how to represent whole numbers as lengths and represent whole-number sums and differences within 100, on a number line diagram.
		Students will demonstrate prior knowledge and application of how to use addition and subtraction within 100 to solve word problems involving lengths.
		Students will demonstrate prior knowledge and application of how to use addition to find the total number of objects arranged in rectangular arrays up to 5 rows and up to five columns; write an equation to express the total as the sum of equal addends.
	7.2	Students will arrange items in rectangular arrays and partition rectangles into equal shares.
		Students will fold and draw equal shares to show halves, thirds, and fourths.
		Students will complete formative assessment - Quick Quiz 1.
	7.3	Students will solve word problems involving length and use a line diagram to add and subtract within 100.

		Students will add three and four lengths to solve word problems.
		Students will solve problems involving adding and subtracting lengths.
		Students will solve a variety of real world problem-solving situations.
		Students will complete formative assessment - Quick Quiz 2.
	7.4	Students will use addition to find the total number of objects arranged in rectangular arrays up to five rows and up to five columns; write an equation to express the total as the sum of equal addends.
		Students will partition circles and rectangles into 2 halves, 3 thirds, and 4 fourths.
		Students will recognize that equal shares of identical wholes need not have the same shape.
		Students will partition a rectangle into rows and columns of same-size squares and find the total number of them.
		Students will on a number line diagram, represent whole numbers as lengths and represent whole-number sums and differences within 100.
		Students will use addition and subtraction within 100 to solve word problems involving lengths.
NICE TO KNOW Standards		**Learning Targets**