Standards Based Map

Second Grade Math

Timeline	NxG Standard(s)	Student I Can Statement(s) / Learning Target(s)	Essential Questions	Academic Vocabulary	Strategies / Activities	Resources / Materials	Assessments	Notes / Self - Reflection
All Year	M.2.OA.2: fluently add and subtract within 20 using mental strategies and by the end of grade 2, know from memory all sums of two one-digit numbers.	I can add and subtract any numbers from 0 to 20 in my mind.	Why is it important to add and subtract numbers mentally? How can math facts help you solve problems?	sum	Students use concrete models (interlocking cubes, two-color counters, titles) and pictorial models (e.g., number lines) to show addition and subtraction	cubes, counters number line	Performance	

	M.2.MD.10: draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories and solve simple put-together and take-apart and compare problems using information presented in a bar graph.	I can draw a picture graph to share number information.	How can you best show a set of data? Why does showing the data help you to explain the data?	picture graph bar graph data	Students create real graphs to collect, organize, and display data. Students transfer the data from real graphs to picture graphs or to bar graphs. Students create questions that require the use of addition and subtraction and trade to answer questions.	Graph Paper	Performance Observation Written Response	
	M.2.OA.1: using addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions, e.g. by using drawings and equations with a symbol for the unknown number to represent the problem.	I can use strategies to solve addition word problems within 100. I can use strategies to solve subtraction word problems within 100.	How do you know if solving a problem requires addition or subtraction?	addition subtraction solve adding to taking from putting together taking apart comparing equations represent addend	Students use the following think-aloud questions to solve problems: *Understand the problem? What do I know? What do I need to know? Do I need more information? *Make a plan: How can I solve the problem? What strategy can I use? What operation should I use? *Carry out the plan: What steps do I take? *Evaluate the solution: Is my answer reasonable? Does my answer make sense? Did I add or subtract correctly? Is there another way to write this equation? Could I use a different strategy to solve the problem?	Math Journal	Performance, Personal communication	
Beginning of the Year	M.2.OA.3 determine whether a group of objects (up to 20) has an odd or even number of members, e.g. by paring objects or counting them by 2s and write an equation to express an even number as a sum of two equal	I can group objects to tell if a number is even or odd. I can write a number sentence	How can you tell if a group of objects is an odd or even number?	odd even equation	Students count out a designated number of cubes (up to 20) and group in pairs. Students identify numbers as even (all cubes in pairs) or	cubes	Performance	

	addends.	to show how adding two of the same number will equal an even number.	How can you represent an equal group of objects using numbers and symbols?		odd (one cube left over)			
Beginning of the Year	M.2.NBT.8 Mentally add 10 or 100 to a given number 100-900 and mentally subtract 10-100 from a given number 100-900.	I can add and subtract 10 or 100 to any number from 100 to 900 in my head.	How will being able to add and subtract 10 or 100 for any number help me solve real-world problems?		In small groups, students use cards that read plus 10, minus 10, plus 100 or minus 100. As numbers are called, students respond by stating the equation and the solution according to their cards. (e.g. called number 230; 230 plus 10=240. Students rotate their cards and continue the process.	Plus 10 Plus 100 Minus 10 Minus 100 cards http://www.k-5mathteachingresources.com	Personal communication Observation Performance	
Beginning of the Year	M.2.NBT.1: understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g. 706 equals 7 hundreds, 0 tens and 6 ones and understand the following as special cases: a. 100 can be thought of as a bundle of tens-called a "hundred". B. numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight or nine hundreds (and 0 tens and 0 ones).				Students use manipulative (e.g. straws, craft sticks, chenille sticks) bundling sets of tens and hundreds to represent three-digit numbers Students build three-digit numbers using individual place value pocket charts labeled hundreds, tens, and ones and sets of digit cards. Students name numbers in both standards and expanded form.	Manipulative Pocket Charts Digit Cards	Performance Observation	
Beginning of the Year	M.2.NBT.2: count within 1000 and skip-count by 5s, 10s, and 100s.				Students use hundreds charts to skip count by 5s and 10s. Discuss the patterns students find on the hundred charts when skip counting.	Pocket Chart Hundreds chart Grid paper	Performance Observation	

					On blank grid paper, students write numbers by tens to create thousands charts			
Beginning of the Year	M.2.NBT.3: read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	I can read and write numbers to 1,000 in different ways.	How can place value help you solve problems?	numerals expanded form	Read " 100 Hungry Ants" Read " Artic Fives Arrive" by Elinor J. Pinczes Students work with partners. One partner builds a number using base ten materials; the other partner writes the number in both standard form and words.	Books Base Ten Materials	Performance Observation	
Beginning of the Year	M.2.NBT.4: compare two and three-digit numbers based on meanings of the hundreds, tens and ones digits, using >, =, and < symbols to record the results of comparisons.	I can compare three-digit numbers using <, =, and > because I understand hundreds, tens, and ones.	How does place value help you compare numbers?	compare greater than less than equal	With partners. One partner builds a number using base ten materials; the other partner builds a second number using base ten materials. Students use symbol cards to show greater than, less than or equal to to compare the numbers	Base ten materials Symbol cards	Performance Observation Personal communication	
Beginning of the Year	M.2.NBT.5: fluently add and subtract within 100 using strategies based on place value, properties of operations and/or the relationship between addition and subtraction.	I can add two-digit numbers. I can subtract two-digit numbers.	Why is place value important when you add and subtract?	add subtract strategies place value	With partners, students use different colored interlocking cubes to build two digit numbers. Students join their models finding sums to demonstrate properties of addition (e.g., red + blue = sum; blue + red = sum). Students separate the sets finding differences to demonstrate the relationship between addition and	Interlocking cubes	Personal communication Observation Performance	

				subtraction (e.g., sum – red= blue; sum – blue = red).			
Middle of the Year	M.2.NBT.7 add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties or operations and/or the relationship between addition and subtraction, relate the strategy to a written method and understanding that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones and sometimes it is necessary to compose or decompose tens or hundreds.	I can use strategies to add numbers within 1000. I can use strategies to subtract numbers within 1000.	Why do you need to understand place value to add and subtract 3-digit numbers?	models compose decompose	Students draw pictorial models of three digit number and use the models to compute the computations. Students record the addition and subtraction problems.	Math Journals	Written response Performance
Middle of the Year	M.2.NBT.9 explain why addition and subtraction strategies work, using place value and the properties of operations (Explanations may be supported by drawing or objects.)	I can explain why adding and subtracting strategies work using what I know about place value.		place value	Students use triangular flashcards to explain the relationship between addition and subtraction fact families.	Triangular flash cards	Personal communication Observation Performance
Middle of the Year	M.2.MD.6: represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0,1,2…and represent whole-number sums and differences within 100 on a number line diagram.	I can make and use a number line.	How does a number line help you show a number? Why does using a number line to add and subtract help you to understand the sum or difference?	number line	Students use a 0-100 number line diagrams to solve for sums, placing objects end-to-end on the diagrams. Students solve for differences, placing objects parallel to compare. Students then move on to a 0-100 floor number line to act out addition or subtraction word problems.	number line diagram	Performance Observation Personal Communication

Middle of the Year	M.2.MD.7: tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	I can tell time to five minutes. I can use a.m. and p.m. in the right ways.	How do clocks help you to organize your day?	analog digital AM PM	Students match times on analog clocks to digital clock displays. Write daily events that typically occur in a.m. and p.m.	analog clocks digital clocks *The Grouchy Ladybug* by Eric Carle	Written Response Observation Performance	
Middle of the Year	M.2.MD.8: solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and cent symbols appropriately. *Example: If you have 2 dimes and 3 pennies, how many cents do you have?*	I can count money to help me solve word problems.	Why is it important for you to be able to count, add, and subtract money?	dollar bill quarter dime nickel penny dollar cent money	Students create price tags for items, showing prices written with dollar and cent symbols. Students write and solve word problems using the items and prices.	money manipulatives *Alexander, Who Used to be Rich Last Sunday* by: Judith Viorst *Arthur's Funny Money* by Lillian Hoban.	Performance Observation Written Response	
End of the Year	M.2.NBT.6 add up to four two-digit numbers using strategies based on place value and properties of operations	I can add up to four 2-digit numbers.			Students use base ten models and place value mats to add up to four addends that are two digit numbers regrouping as necessary. Students record the column addition problems and sums showing regrouping.	Base ten blocks Place value mats Math journal	Personal communication Observation Performance Written response	
End of the Year	M.2.MD.1: measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	I can use different tools to measure objects.	Why do we use tools to measure? Why did you choose the tool you did to measure an object? How could changing the tool	ruler yardstick meter stick measuring tape	Students create graphic organizers labeled ruler, yardstick, and measuring tape. Students categorize items from the classroom by the most appropriate tool for measuring.	rulers yardsticks meter sticks measuring tape	Performance Observation Personal Communication	

		you used to measure the object change the measurement?					
End of the Year	M.2.MD.2: measure the length of an object twice, using length units of different lengths for the two measurements, describe how the two measurements relate to the size of the unit chosen.	I can use two different units to measure the same object and tell how the measurements compare.	Why does using one unit of measurement make more sense than using another?	unit	Students measure the same objects with different units and describe how the measurements are related based on the sizes of the units.	rulers yardsticks meter sticks measuring tape *How Big is A Foot?* By Rolf Myller	Performance Personal communication Observation
End of the Year	M.2.MD.3: estimate lengths using units of inches, feet, centimeters, and meters.	I can estimate the lengths of objects using inches, feet, centimeters, and meters.	How does knowing different units of measurement help estimate the length of an object?	inch feet centimeter meter	Using personal benchmarks, students estimate the lengths of objects and record their predictions. Students measure the objects with standard measuring tools and record. Students compare their estimates to the actual measurements.	rulers yardsticks meter sticks measuring tape	Performance Personal communication Observation Written Response
End of the Year	M.2.MD.4: measure to determine how much longer on object is than another, expressing the length difference in terms of a standard length unit.	I can tell the difference in lengths of two different objects.	Why is it important to use the same unit when comparing two different objects?	standard unit	In pairs, students select items from desks. Students measure items using the same units and complete sentences using the words longer and shorter.	rulers measuring tape yard sticks meter sticks	Written Response Observation
End of the Year	M.2.MD.5: use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g. by using drawings (such as drawings of rulers) and equations within a symbol for the unknown number to represent the problem.	I can use addition and subtraction to solve measurement problems.	How can knowing some of the lengths in the problem help to find the unknown lengths?	equation symbol length	Students create word problems involving length. Students exchange problems with partners, write the equations, and solve.		Performance Written Response Observation

		Why do units in a problem need to be the same?					
End of the Year	M.2.MD.9: generate measurement data by measuring lengths of several objects to the nearest whole unit or by making repeated measurements of the same object and show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	I can make a table to organize information about measurement. I can show measurements with a line plot.	Why is it important to organize data and information?	line plot horizontal scale	Working in pairs, students spill a bag of cubes containing a random number of eight colors of cubes. Students sort the cubes, connect by color, and count the cubes in each train. Students create line plots of their data and explain their representation.		Performance Oral Exam	
End of the Year	M.2.G.1: recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces (sizes are compared directly or visually, not compared by measuring) and identify triangles, quadrilaterals, pentagons, hexagons and cubes.	I can name and draw shapes. (I know triangles, quadrilaterals, pentagons, hexagons and cubes.)	Why should we identify shapes using angles and faces?	attribute angle equal faces triangle quadrilateral pentagon hexagon cube	In pairs, students describe attributes of shapes (e.g. *I am thinking of a shape with….)* Student A describes the shape while Student B draws and identifies the shape. Continue, reversing the roles.	*The Greedy Triangle* (Burns) *The Silly Story of Goldilocks and the Three Squares* (Maccarone) Marker boards Dry-erase markers	Personal Communication Performance	
End of the Year	M.2.G.2 partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	I can find the area of a rectangle by breaking it into equal sized squares.	Why is knowing the area of an object important?	partition rows columns total	Students use geoboards and rubber bands to create rectangles and count the numbers of squares within the rubber bands. Students estimate number of square tiles needed to cover surfaces (e.g. book, paper). Students then cover the surface with square tiles and	Geoboards rubber bands square tiles	Performance Written Response	

							compare the estimates to the actual number.			

End of the Year	M.2.G.3 partition circles and rectangles into two, three or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., describe the whole as two halves, three thirds, four fourths and recognize that equal shares of identical wholes need not have the same shape.	I can divide shapes into equal parts and describe the parts with words like halves or thirds I can understand that equal parts of a shape may look different depending on how I divide the shape.	What happens to equal shares as more equal shares are made within a shape?	partition equal describe halves thirds fourths whole	Students fold paper circles and rectangles to create and identify equal shares.	*Eating Fractions* (McMillian) Paper cutouts	Performance
End of the Year	M.2.OA.4 use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns and write an equation to express the total as a sum of equal addends.	I can use addition to help me figure out how many objects are in an array. I can write a number sentence to show the total number of objects in an array.		total array row column sum addend	Students use square tiles to join equal numbers of three colors of tiles. Students record their arrays on grid paper and write the appropriate addition equation (e.g., 4 red, 4 blue, 4 green is 4+4+4=12)	Square tiles of three different colors	Performance