Curriculum Sample for 1st Grade Math

Grade Level	1st	**Content Area**	Math
Course Title (grades 9-12 Only)	n/a		
Length of Unit	5 days	**Time of Year**	3rd Quarter
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	Students will be able to compose and decompose numbers from 11 to 19 into tens and ones using objects or drawings. Students will be able to record compositions or decompositions with drawings and equations. Students will understand that numbers 11 to 19 are composed of ten ones, and one, two, three, four, five, six, seven, eight, or nine ones. Students need to be able to count back by tens. Students need to understand that subtraction is the process of taking apart, taking from or comparing.		
Alignment to Program of Instruction *Briefly outline methods of instruction found in this sequence of lessons that align to the Program of Instruction described in A.3.*	Students will be taught using scaffolding methods as well as with direct instruction. Through lecture-discussions and demonstrations, students will develop their knowledge while practicing problem-based learning & inquiry activities.		
Standard Number and Description *List the Number* and full description for the required Standard.*	1.NBT.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.		
Summative Assessment *Describe a cumulative and comprehensive activity, clearly separate from instruction and guided or independent practice, which allows each student to individually demonstrate mastery of the required Standard. A copy of the summative assessment must be attached to the curriculum sample.*	Students will be given 8 subtraction problems worth 3 points each. Students will be assessed by their correct answer, using words to describe the equation, and their capability to choose a strategy to solve subtraction problems with multiples of 10 using bundles of 10. Students will demonstrate their knowledge by representing the subtraction equation with bundles of 10. Students will be able to relate the strategy used when formulating an answer to a subtraction problem. Students will also be able to explain why they used the chosen strategy to solve a written equation.		
Scoring Scale and Mastery Level *Explain how the assessment is scored, to include points per question, how points are awarded, total points possible, criteria necessary to demonstrate mastery, and grading scale. A copy of the answer key and scoring rubric (whichever applicable) must be attached to the curriculum sample.*	The assessment is a quiz that will again demonstrate Students' knowledge of subtraction of multiples of 10 in the range of 10 – 90 by using concrete models and strategies. Students will relate the strategy to a written method and explain reasoning. This assessment has 8 problems worth 3 points each. The assessment totals 24 points; 20 points or more = mastery which is set at 80% or higher.		
Materials/Resources Needed	Candy pieces printed on paper; felt cookie jar and cookies; hundred charts; base-ten blocks; iPads; website: "Subtracting Multiples of Ten Quiz;" "Quiz;" Scoring Rubric		

Lesson (add as needed)	**Instruction**	**Student Activities**
1	Teacher will have the class sit in a circle on the floor and discuss Halloween with Students. Teacher asks Students, "How much candy do you think you will get next year? Will you share it with someone?" Next, Teacher reviews addition using candy pieces printed or drawn on paper. Teacher explains an addition story to students (e.g. "If you had 50 pieces of candy and received 10 more, how many pieces would you have?") Teacher has a volunteer write the corresponding equation on the board: "50 + 10 = 60 pieces of candy." Teacher then explores subtraction with the students by asking, "What would happen if you shared some pieces of candy?" teacher then states a new story. For example, "What if you had 75 pieces of candy and shared 20 pieces with your friend, how many pieces would you have?" Teacher then assesses whether students can use appropriate subtraction language to help write a new equation for the story. Teacher continues to provide examples for children to come up to the board and write equations down.	Student will thin k about Halloween and how much fun they have collecting candy. Students will then contemplate whether or not they would share their candy with a friend. Students listen to Teacher's examples. Students volunteer to write equations on the board. Students use appropriate subtraction language to help write an equation. Students volunteer to come up to the board and write down equations.
2	The next day, Teacher leads the class in the song, "Who Took the Cookies from the Cookie Jar." Teacher reviews addition by using a felt cookie jar and cookies. Teacher demonstrates to Students an addition story (e.g. "If you had 25 cookies in the jar, and ate five, how many cookies would you have left?") Teacher has a volunteer write the corresponding equation on the board. Teacher explains this strategy to Students. When they are working with tens, they can hide the zeros to make it easier to add, and then bring back the zeros at the end. So "50 + 30" can	Students sing the song, "Who Ate the Cookies in the Cookie Jar." Students listen to Teacher's examples. Students volunteer to write equations on the board.

	become “5 + 3,” which is a basic number fact. Since “5 + 3 = 8,” then “50 + 30 = 80,” Try solving other number sentences together where children add tens by hiding the zeros. Teacher reminds Students that when they subtract using manipulatives, they take away pieces. For example, when using base-ten blocks to show 90 and take away 20. This number sentence reads, “90 + 20 = 70.” Teacher then uses the base-ten to solve the problem. Teacher reminds children that they can hide the zeros to help solve the problem. Since “9 – 2 = 7,” “90 – 20 = 70.” Teacher points out this strategy while solving the rest of the problems. Next, teacher explores subtraction by asking students what happens when we take cookies from the cookie jar. Teacher assesses whether Students can use appropriate subtraction language and write an equation for the new story. Teacher gives several more examples and has Students write the equations on the board.	
3	The next day, Teacher the number “90” on the board. Teacher models to students how to count back by tens to zero. Teacher write the numbers “80,” “70,” “60,” “50,” “40,” “30,” “20,” and “10” on the board and leads students in counting back buy tens for each number. Teacher provides each student with a sheet that has several hundred charts (a graph with number 1 – 100 on it.) Then Teacher calls out a number and has student volunteers say the number that is 10 more or 10 less than the number. Teacher instructs students that they will have the chance to use the hundred charts to subtract by tens. Teacher models the hundred charts and subtracts by tens. Teacher does this by writing an equation on the board (e.g. “50 – 30 = 20.) Teacher	Students count back by tens. Students use hundred chart to respond to the Teacher’s questions concerning numbers that are 10 more or 10 less that the number. Students use hundred chart to demonstrate knowledge of subtraction.

	then displays to Students how an equation can be displayed using a hundred chart. Teacher does this by circling the first number (the minuend) and drawing a line through the bases of then and stopping at the second number (the subtrahend.) Teacher tells students to count the squares between the two numbers to find out the difference. Teacher then reviews the equation and checks to see if the drawing and the equation are consistent. Teacher continues to go through problems on the hundred chart until all 10 problems are completed. Teacher does each problem on the board after giving the students enough time to think about it and attempt it on their own.	
4	The fourth day of instruction, Teacher instructs Students to count Teacher provides base-ten block sheets for students containing subtraction problems. Teacher demonstrates how to use the base-ten blocks when subtracting. Teacher write an equation on the board: "70 – 10 = 60." Teacher then uses base-ten blocks to demonstrate how to subtract. Teacher gives students several examples and has students come up to the board to demonstrate how to subtract. Teacher gives Students several examples and has Students come up to the board to demonstrate equations. Teacher then discusses the worksheet and has Students try to complete the problems on their own. Teacher explains, "These problems are base-ten pictures and require you to count the number of blocks and subtract by writing an equation." Teacher then gives the students the answers to the problems and reviews how each one is completed. Teacher scans the room to assess the group's ability to formulate equations. Teacher then decides how many more examples to give to Students. Teacher looks for approximately 80 % of his or her class to be successfully creating subtraction equations using the base-ten exercise.	Students count backwards from 90 to 10. Students come up to the board to write equations. Students use base-ten blocks and sheets to display and record equations. Students independently take the online "Subtracting Multiples of 10 Quiz" using iPads for practice.

	Teacher then instructs Students to use their iPads and go onto the website: "Subtracting Multiples of 10 Quiz." http://maths.primarytopics.co.uk/calculating/mental/year3/interactive /quizzes/subm10q.htm Here Students complete the 20 – question quiz for practice where Students demonstrate their knowledge of that subtraction is the process of taking apart, taking from, or comparing.	
5	Teacher states, "Today we will be testing you to see what you have learned about subtracting numbers with multiples of ten." Parent volunteers are used to assist Teacher with testing. They are reviewing the subtraction material with the students. Teacher has a couple parent volunteers in order to keep Students busy. Teacher gives students a quiz with five equations on it (e.g. "40 – 40 = 0.) Students are required to show Teacher how to correctly represent the equation using bundles of ten and using their words and equations to describe their actions. Teacher requires each student to explain why he or she used a chosen strategy to solve the written equation given (e.g. "Did you count by tens, take off zeros, etc." Teacher assess whether Students can accurately subtract any combination of multiples of ten where the difference results in a positive value or zero.	Students independently complete 8 – question quiz using bundles of ten and their words describing the equation and what strategy was used.

Summative Assessment:

Quiz

Name _____Date_____

Directions for Students (Read aloud by Teacher): "Please answer the following questions in order to demonstrate subtraction of multiples of 10 in the range of 10 – 90. You will use concrete models and strategies. You will relate the strategy to a written method and explain the reasoning you used."

1.) What does the equation, 80 – 30 = look like using bundles of ten?
   - Use your words to describe the equation.
   - What strategy did you use in order to arrive at this answer?
2.) What does the equation, 70 – 70 = look like using bundles of ten?
   - Use your words to describe the equation.
   - What strategy did you use order to arrive at this answer?
3.) What does the equation, 30 – 20 = look like using bundles of ten?
   - Use your words to describe the equation.
   - What strategy did you use order to arrive at this answer?
4.) What does the equation, 90 – 50 = look like using bundles of ten?
   - Use your words to describe the equation.
   - What strategy did you use order to arrive at this answer?
5.) What does the equation, 60 – 10 = look like using bundles of ten?
   - Use your words to describe the equation.
   - What strategy did you use order to arrive at this answer?
6.) What does the equation, 50 – 20 = look like using bundles of ten?
   - Use your words to describe the equation.
   - What strategy did you use order to arrive at this answer?
7.) What does the equation, 70 – 60 = look like using bundles of ten?
   - Use your words to describe the equation.
   - What strategy did you use order to arrive at this answer?
8.) What does the equation, 80 – 40 = look like using bundles of ten?
   - Use your words to describe the equation.
   - What strategy did you use order to arrive at this answer?

Answer Key/Scoring Rubric:

Scoring Rubric

1) 8–Question Quiz has a total of 24 points (each problem is worth three points.) 20 points or higher is mastery. Students will be graded using three learning targets:

- Student's ability to subtract by multiples of 10 up to 90 using bundles of ten. (1 point for correct answer)
- Student's ability to use words to describe the equation. (1 point)
- Student's ability to choose a strategy was used to solve a written equation. (1 point)

Problem 1 = _____/3
Problem 2 = _____/3
Problem 3 = _____/3
Problem 4 = _____/3
Problem 5 = _____/3
Problem 6 = _____/3
Problem 7 = _____/3
Problem 8 = _____/3
Total = _____/24

Points	Percentage
18	75%
19	79%
20	83% *mastery
21	88% *mastery
22	92% *mastery
23	96% *mastery
24	100 *mastery

TOTAL ASSESSMENT = _____/24

Comments :