Curriculum Sample for Kindergarten Math

Grade Level	Kindergarten	**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 are expected to understand that numbers 11-19 are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. Students will know how to record drawings, to record equations, and to make up and break down numbers 1 to 19.		
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.*	K.NBT.1 - Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.		
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 demonstrate knowledge by displaying numbers 11 to 19 with counters on a "Ten Frame." Students will also complete an assessment, "Tens on the Ten Frame," and compose and decompose numbers 11 to 19 by filling in answers to number sentences and writing equations.		
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.*	Assessment has two parts: The first assessment, "Ten Frames," is out of 5 total points with a score of 4 or higher for mastery. Here, Students are using counter chips to compose and decompose numbers from 11 to 19 into ten ones and further ones. The second assessment, "Teens on the Ten Frame," is 16 total points with a score of 13 for mastery. In this assessment, Students are orally completing each sentence by filling in the correct number and describing the equation. Students must achieve mastery on both assessments.		
Materials/Resources Needed	19 lima beans; blue and red spray paint; a paper cup; bean worksheets; "Ten Frame" papers; "Tens on the Ten Frame" papers; Scoring Rubric		

Lesson (add as needed)	**Instruction**	**Student Activities**
1	The teacher brings students to the floor and tells them they are going to play a fun game in math this week. Before starting the game, spray paint 19 lima beans on one side only. When you're finished, one side of each bean should be blue and the other side should be white. The teacher keeps nine beans aside for a later game. The teacher begins to play the game by placing ten beans in the paper cup, shaking the cup to mix up the beans, and then tossing the contents onto the table. The teacher gives each child a piece of paper (that shows ten clear beans drawn in each row) and blue crayons and asks the students to draw the total number of beans he or she sees on the piece of paper. Then, the teacher instructs students to color in the beans according to the tossed beans' colors. (For example, if your toss shows six beans facing blue side up, and four bean facing white side up, students should color six beans blue and leave four not colored in, or white.) On the board, the teacher writes down the equation that the toss represents. (In our previous example it would look like this: 6 + 4 = 10. Repeat step 3 and 4 several times, encouraging students to come up and roll the beans themselves. The teacher has students continue tossing the 10 beans from the cup, until the teacher believes the class has discovered all the ways to make 10. The teacher stacks the pages and binds them together with string	Students watch the teacher put the ten lima beans into the cup. Students take part in shaking the beans and dumping them out while counting the different colors. Students take crayons and color in each representation of a roll. Students try to respond to all of Teacher's questions.

	or staples to make a book showing all the different ways to make the number 10.	
2	The next day, teacher reminds students of the game they played yesterday. She reviews some of the equations that make up 10. She then asks the students to count with her from 1 – 19. The teacher asks students what numbers make up the tens (11-19). The teacher asks, "Would we need to use more beans in order to make a higher number? How many beans more beans would we need to make 12, 16, and 19?" The teacher waits for students' replies. The teacher explains answers and reviews the process of addition. The teacher proceeds by showing students on the board with a picture that the number 19 looks like 10 beans plus 9 beans. Next, the teacher shows that the number 18 is 10 beans plus 8 beans. The teacher continues this pattern down to the number 11. The teacher demonstrates and emphasizes that all "tens" are 10 plus another number. The teacher then pulls out one colored bean and puts it in the cup of ten. The teacher tells students that there are a total of 11 beans in the cup. The teacher passes out papers to students (with 11 clear beans per row, 12 clear beans per row, and so on) and blue crayons. The teacher asks students to volunteer to shake the beans and dump them out on the table. The teacher explains to students that they are going to color in the 11 beans on the paper according to each roll. The teacher models how to color in beans. After students have worked with the number 11 five times, teacher puts another bean in the cup. The teacher explains that they are now going to work with the number 12. The teacher has students roll the cup five times and color in the rows with 12 beans. The teacher then continues this pattern of rolling and coloring up to the number 19. Teacher collects papers.	Students count from 11 to 19 out loud with the teacher. Students listen to the teacher's instructions. Students think about the teacher's questions and answer accordingly. Students record each rolling of the beans on their papers by coloring in blue beans and leaving white beans blank.

3	The teacher reviews the game from yesterday and states they will continue playing. This day, the students are going to be able to choose a number from 11-19, count the beans, and toss them out. Everyone will again color in the number of beans on a piece of paper drawing the beans and coloring them in blue or leaving them blank for white. (This time the only difference is that the students get to choose.) Teacher emphasizes to students that the number of blue beans and the white beans will always total the number that is started with. The teacher collects all the papers and tells students, "Tomorrow we will be writing equations from our pictures."	Students will choose a number between 11 and 19 to help the class learn a new equation. Students record the bean-rolling results by again coloring in the beans for blue, or leaving them blank for white.
4	The teacher takes all the papers and passes each one out to its owner. The teacher states, "All of these colored beans represents an equation. We can find that equation by counting each colored bean and putting it into a number sentence. Here watch me." The teacher then uses one of the rolls to write an equation on the board. (For example, if the roll was 8 blue beans and 11 white beans the equation would read 8 + 11 = 19.) Next, the teacher explains all of the equations are going to end with numbers from 11-19 because those are the total numbers of beans being used. The teacher states for an example, "If we start with 15 beans, we are going to end up with a total of 15 beans." The teacher then goes through each row of colored beans with the students and has them write as the teacher writes the equation. Each time the teacher points out that they are making an "equation" out of numbers.	The students take their papers. Students write equations down on papers, watching Teacher for assistance.
5	Summative Assessment: The teacher takes five students at a time to test them. Other students are working quietly with a parent helper reviewing equations from the past couple days.	The students work with parent helpers to review for assessment. The students take "Ten Frame" and take 19 counters. Students

	The teacher tells students that today they will be using two frames of ten to represent a number from 11 to 19 on the "Ten Frame" paper. The teacher reviews that each ten is 10 plus another number. The teacher randomly places a set of numeral cards down on the table from 11-19. The teacher then gives each child 19 counters. The teacher tells students that they are to put down however many counters represent each number. The teacher picks numbers randomly and uses a check-off sheet to determine if students correctly place the chips on their "Ten Frames." After teacher has assessed each student, the teacher sends for the next group. Teacher continues this until all students have completed the assessment. Immediately after, teacher again takes five students at a time and passes out a hard copy of "Tens on a Ten Frame" to each student. The teacher instructs students that are not testing to be working with a parent helper reviewing ten numbers. The teacher reads the statement on each of the problems. (For example, "11 is one group of ten and ____ more." Teacher tells students to fill in the blank. Next, the teacher asks students to write an equation. (For example, students would write 10 + 1 = 11.) Students complete each problem, using numbers 11 to 19, by filling in blanks and writing equations. The teacher takes each group back to test and then collects papers to assess.	put down counters to represent each number (11 – 19). The students take "Tens on a Ten Frame" papers and complete them as directed filling in the missing digits and creating equations.

Summative Assessment:

Ten Frames

Name_____Date_____

Directions: Please place your counters on each square to represent the number given. Your numbers will be 11 – 19. Students will understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Tens on the Ten Frame

Name _____Date_____

Directions for Teacher/Parent Volunteers: Please have students orally complete each sentence by filling in the correct number and describing the equation (write down Students' responses.) Students will compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation.

1. 11 is one group of ten and _____ more.
Equation: _____

2. 12 is one group of ten and _____ more.
Equation: _____

3. 19 is one group of ten and _____ more.
Equation: _____

4. 13 is one group of ten and _____ more.
Equation: _____

5. 18 is one group of ten and _____ more.
Equation: _____

6. 15 is one group of ten and _____ more.
Equation: _____

7. 14 is one group of ten and _____ more.
Equation: _____

8. 17 is one group of ten and _____ more.
Equation: _____

Answer Key/Scoring Rubric:

Scoring Rubric

1.) Ten Frame Scoring Rubric
Students will need to get a 4 or higher for mastery.

5 – Students knew five ways to correctly represent a number from 11 through 19 on the Ten Frame board.

4 – Students knew four ways to correctly represent a number from 11 - 19 on the Ten Frame board.

3 – Students knew three ways to correctly represent numbers 11 – 19 on the Ten Frame board.

2 – Students knew two ways to correctly represent a number from 11 - 19 on the Ten Frame board.

1 – Students knew one way to correctly represent a number from 11 - 19 on the Ten Frame board.

0 – Students knew no ways to correctly represent a number from 11 – 19.

Total = ___/5 Students will need to get 4 out of 5 for mastery.

2.) Tens on the Ten Frame Scoring Rubric
All questions are worth 2 points each. Students will need to get 13 out of 16 for mastery.

Total = ____/16

Students must achieve 80% on both assessments to demonstrate mastery of this measured standard.