Module 8 Lesson Plan (Make 8 & 9)

Lesson by Cameo Lakey *(created 11/12/17 with the CalStateTEACH Lesson Plan Assistant)*

ATTACHED FILES AND VIDEOS

Module8_Make8and9_Assessment.docx
Lakey_Module_8_MathLesson_enc.mp4

GENERAL COMMENTS

I. ESTABLISHING GOALS AND STANDARDS

Subject Area(s)

Math

Central Focus

Write numbers from 0 to 20, represent objects with a written numeral 0-20, understand that the number of objects is the same regardless of their arrangement or the order in which they were counted, given a number from 1-20, count out that many objects, represent addition with objects, and decompose numbers less than or equal to 10 into pairs in more than one way and record each decomposition by a drawing or equation.

Standards

California Academic Content Standards

Mathematics, Grade K
Number Sense | 2.0 Students understand and describe simple additions and subtractions:
- Standard 2.1: Use concrete objects to determine the answers to addition and subtraction problems (for two numbers that are each less than 10).
Mathematical Reasoning | 1.0 Students make decisions about how to set up a problem:
- Standard 1.2: Use tools and strategies, such as manipulatives or sketches, to model problems.
Mathematical Reasoning | 2.0 Students solve problems in reasonable ways and justify their reasoning:
- Standard 2.1: Explain the reasoning used with concrete objects and /or pictorial representations.

Common Core Standards

Mathematics, Grade K
Counting and Cardinality (K.CC) | Know number names and the count sequence.
- Standard 3: Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).
Counting and Cardinality (K.CC) | Count to tell the number of objects.
- Standard 4: Understand the relationship between numbers and quantities; connect counting to cardinality. a) When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b) Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. c) Understand that each successive number name refers to a quantity that is one larger.
Counting and Cardinality (K.CC) | Count to tell the number of objects.
- Standard 5: Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects
Operations and Algebraic Thinking (K.OA) | Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
- Standard 1: Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. (Drawings need not show details, but should show the mathematics in the problem. This applies wherever drawings are mentioned in the Standards.)
Operations and Algebraic Thinking (K.OA) | Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
- Standard 3: Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).

English-Language Arts, Grade K
Speaking and Listening Standards | Comprehension and Collaboration
- Standard 3: Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

California English Language Development Standards

Listening and Speaking, Grades K-2
Strategies and Applications | Beginning ELD level | Comprehension
- Standard : Answer simple questions with one- to two-word responses.
Strategies and Applications | Beginning ELD level | Comprehension
- Standard : Respond to simple directions and questions by using physical actions and other means of nonverbal communication (e.g., matching objects, pointing to an answer, drawing pictures).

Grade/Level

Pre-K, Kindergarten

Content Objective

At the conclusion of this Mathematics lesson, Kindergarten students will be able to individually show at least two different ways to make the numbers 8 and 9, with the assistance of using counter manipulatives, by coloring a certain amount of circles red and yellow with a crayon and writing the corresponding numbers below using a pencil on a sheet of paper. 70% of students will meet the objective.

Academic Language Demands

Students will understand the mathematics vocabulary being taught (_____ and _____ make 8/9, counters) as well as the concept of using two numbers to make one number through teaching methods that include linking their past learning of what the numbers 8 and 9 look like and how to write them, being told their objective for the lesson, visually seeing and saying all of the numbers that are less than and equal to 8 and 9, me modeling to them how to use the counter manipulatives in different ways to make 8 and 9, students partner sharing how many more are needed to make 8 and 9, students using their own manipulatives, completing a guided practice worksheet together as a class, students completing an independent practice worksheet and assessment worksheet on their own, and students sharing different ways to make these two numbers.

II. LEARNING ABOUT STUDENTS

Class Information

- Total Number of students: 25 (8 TK, 17 K)
- Number of boys: 11 (3 TK, 8 K)
- Number of girls: 14 (5 TK, 9 K)
- African American: 3 (1 boy, 2 girls)
- Asian American: 1 (1 boy, 0 girls)
- Caucasian: 15 (5 boys, 10 girls)
- Hispanic/Latino Americans: 6 (4 boys, 2 girls)
- English Language Learners: none identified
- Special Needs: Speech - 3 (1 boy, 2 girls)

III. MAKING ADAPTATIONS

Adaptations

Wait Time, Grouping, Preferred Seating, Technology

Adaptation Details

Students who did not turn in permssion slips to be videotaped will still be taught this lesson; however, they will be seated at the back of the ABC rug and at the back of the room in order to not be shown in the video. English Learners (ELs) will be provided with visuals of the number 8 and 9 so they know what numbers we are focusing on, they will watch me model how to use the counter manipulatives in order to explore different ways to make 8 and 9, and will be able to partner share with native English speakers for scaffolding. Additionally, allowing ELs to answer using one word sentences and/or pointing to a visual and providing them with one-on-one assistance when needed. For speech students, I will stand in close proximity to them while they are speaking and will place them in groups with students without a speech impediment for scaffolding. Checking the work first of students who lose focus easily or become frustrated quickly when meeting a performance obstacle and repeating directions to these students directly to ensure they understand what they need to do. I also will walk the room during the completion of the guided practice in order to provide additional modeling and assistance to students who are struggling with using the manipulatives and transferring answers to their worksheets.

IV. ANALYSIS OF STUDENT LEARNING

Assessment

Formative

Description of Assessment

Written Assessment: At the end of the lesson, students will be given a worksheet (see attached example: Module 8_Make8and9_Assessment) in which they need to show two different ways to make the number 8 and the number 9. Students will be directed that they can use the counter manipulatives to assist them. Students will need to color circles on the worksheet red and yellow, then write the numbers to show how many are yellow and how many are red (for example: To show 8, I color 2 circles red, write the number 2, then color the remaining circles (6) red, and write the number 6). These worksheets will be collected.

For early finishers, students will be directed to write more ways to make 8 and 9 on the back of their paper.

V. PROCEDURE

Prerequisite Background Knowledge/Skills

Students will need to know how to write their name and numbers from 0-9 and how to color with crayons.

Materials

<u>Technological Materials</u>:

- Computer
- ELMO Projector
- SMART Board

<u>Other Materials</u>:

- Name cards (if needed)
- Folders
- Pencils
- Crayons
- Counters (Manipulatives)
- 8 and 9 charts (Manipulatives)
- Guided Practice Worksheet
- Independent Practice Worksheet
- Assessment Worksheet

INSTRUCTIONAL STRATEGIES

Open

~Starting at the ABC rug~

LINKS TO PAST LEARNING:

1. I show the numbers 8 and 9 on the whiteboard and ask students to tell me what numbers these are together as a class (students should respond 8 and 9). Using the SMART Board, I show them how to write these numbers.

STATE THE OBJECTIVE:

2. I read the lesson objective to the class using a sheet of paper on the whiteboard, students will listen first, then we will read it together. "Students will show at least two different ways to make the numbers 8 and 9 by coloring circles red and yellow and writing the corresponding numbers." And I explain its meaning to them.

WHAT THEY WILL BE LEARNING:

3. I say: "Today we are going to discover different ways to show how to make the numbers 8 and 9 by using two numbers."

Body

GUIDED PRACTICE:

1. I explain to them that the numbers we use to make 8 and 9 need to be smaller than, or equal to, 8 and 9. I write these numbers on the board, in order, as the students say them (0,1,2,3,4,5,6,7,8 below the number 8 and 0,1,2,3,4,5,6,7,8,9 below the number 9).

2. I write 9 and ask them if we can use this number to make 8 (students should say no) I call on volunteers to tell me why we cannot use 9 to make 8. I do the same for the number 9 but with the number 10.

MODELING:

3. I pick the number 2 and, using my large counter manipulatives, I put that many red counters on the board, covering 2 squares on a grid with eight squares for 8 and another with nine squares for 9.

4. I have the students partner share how many more squares we will need to fill in with our yellow counters to make 8 and how many will be needed to make 9. (students share as I walk around the ABC rug to listen to them)

5. I have students call out the answer, first for 8 and then for 9 (students should say 6 for 8 and 7 for 9). I put 6 yellow counters on the board for 8 and 7 for 9 to cover the rest of the squares. We count all of the red and yellow counters together to check our answers.

6. I ask them, what two numbers did we use to make 8? (students should say 2 and 6) I write these numbers on the board. We do the same for nine (students should say 2 and 7).

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7. I call on a student using equity sticks to give me a different number, then we follow the same steps to make 8 and 9 a new way, except I call up students to place the counters on the board this time.

MODELING:

8. I tell them they will be using their own counters at their seats to help them discover new ways to show how to make 8 and 9. I model what I do not want to see the students doing with them and how to properly use the counters using the ELMO Projector.

~Students go to their seats~

9. I give the students a few minutes to play with the manipulatives in order to satiate their curiosities.

10. We complete the guided worksheet together as a class. I walk the room to assess student performance and to assist struggling students.

INDEPENDENT PRACTICE:

11. I give the students directions on how to complete the independent practice section of their worksheet.

12. Students complete the independent practice while I walk the room to assess student performance and provide any clarification where needed.

13. I call on students using equity sticks to share what numbers they used to make 8 and 9 in order to complete the independent practice, I fill these in on my worksheet being projected onto the whiteboard using the ELMO Projector.

Close

ASSESSMENT:

1. I give the students directions on how to complete the assessment worksheet. They will be directed to put their name on their paper and for early finishers to turn their paper over after finishing it and (drawing or writing numbers) to show even more ways to make 8 and 9. They also will be told that these will be collected.

2. Students complete the assessment.

~Students return to the ABC rug~

WHAT THEY HAVE LEARNED:

3. Together as a class, I call on students using equity sticks to share different ways to make 8 and 9.

4. We work together until we have all of the different ways to make 8 and all of the different ways to make 9 written on the board.

~END OF LESSON~

VI. ANALYSIS AND REFLECTION

Analysis and Reflection

The parts of the lesson I felt were effective included having students share why a number greater than 8/9 could not be used to make 8/9. I felt this was great practice for the students to think about the "why" instead of just answering yes or no questions and assisted in them practicing with being able to explain their thoughts/reasoning. From this activity, I learned that the students were on the right track, but struggled with their explanations since they do not have the specific mathematical vocabulary (such as "greater than") mastered yet. I also felt that having the students partner share was effective. Listening to the students showed me that they were struggling, in which I modeled the first one for them (2 and 6 make 8) and then had them partner share again for 9, in which they successfully partner shared that 2 and 7 makes 9. Additionally, calling on students to come up and show their work on my worksheet being projected onto the whiteboard was effective since it increased student engagement with the lesson. Lastly, I felt that the use of manipulatives with the lesson was effective because it allowed the students to enhance their learning by using concrete objects and also allowed me to give direct feedback to them before they transferred their arrangement of the counters to their worksheet.

The changes I would make to my instruction to better support student learning includes additionally linking the students past learning to the mathematical vocabulary terms of "greater than," "less than," and "equal to" at the beginning of the lesson alongside activating their prior knowledge of the numbers 8 and 9. I also would like to implement more opportunities into the lesson where students can explain their thinking. Lastly, I feel that future lessons involving the learning of decomposing numbers should only focus on one number each lesson instead of focusing on two.

My objective goal was for 70% of the class, or about 11 out of 16 students, to complete the assessment worksheet correctly. The assessment results consisted of 71% of the class, or 10 out of 14 students (2 were absent) who met the objective (see application/next steps below for what I would do with this information and my attachment to the "Student work samples for this lesson" deliverable for activity 8.03 for an in depth description of student performance levels).

Based on the assessment results and observations I made on student performance during the lesson, I saw that students did understand that you need to use two numbers in order to make a number. The entire class used only two colors (red and yellow) to show their work and would write in two numbers (some were correct, some were not correct) in the spaces provided. Some of the students would only use one color for some of the problems, but they would write zero as one of the numbers, which showed me that they understood that zero is used to make a number when there is only one color used. The students also understood that you cannot use a number greater than the number you are decomposing into pairs; however, the students are struggling with recalling the vocabulary terms they have learned in past lessons. Even though the students know they are to use only two colors, there were four students who wrote numbers that did not correspond with how many circles they had colored red and yellow. Additionally, some of the students wrote some of their numbers backwards.

Application/Next Steps

From looking at the assessments of the four students who did not meet the objective, I see that all of them understood that they needed to use two colors (red and yellow) and that if they colored all of their circles in using one color, then a zero would be involved in the answer. Two of the students kept their red circles and yellow circles together, but the other two students colored the colors in different orders (i.e. to show 8, a students colored two red circles, then the next two yellow, then the next two red, and the last two yellow instead of four red circles together and four yellow circles together). This shows me that I need to explicitly tell the students, and model it to them, that I want them to group their red circles together and their yellow circles together (I do not want them to make color patterns). Despite one of the students not grouping his colors together, he did write the correct corresponding numbers; however, because of him making the patterns, he did not show me two DIFFERENT ways to make 8 and 9 (he did 4 and 4 for 8 and 0 and 9 for 9). The other three students did not write the correct numbers that corresponded with their coloring. It would be a good strategy to have these students share their thinking to me so I can understand where they made their mistake and so I can better develop activities to provide these students with additional practice.

Additionally, I need to activate prior learning of the already covered vocabulary terms at the beginning of the lessons and not assume that the students remember them. Also, providing opportunities for students to practice their number writing, specifically with the ones that I saw being written backwards (2,5,6,7, and 9). Having students practice this concept of decomposing numbers through two eight minute sessions daily (see deliverable for activity 8.02) would also be beneficial to the students. Especially since this concept is vital to students being able to learn addition and subtraction.

I provided feedback to the students by walking the room and taking a moment to assess each student's work. I would have the students tell me what they did and would either provide praises/affirmations to those who completed their work correctly or would work with the students who made a mistake by assisting them to discover where their mistake was and how to fix it. This feedback allows the students to be able to know why they are correct and teaches them how to check their work and fix mistakes on their own without needing someone to directly tell them how to fix it every time.