

## Ten Frames

Lesson by Cameo Lakey (created 10/15/17 with the CalStateTEACH Lesson Plan Assistant)

### ATTACHED FILES AND VIDEOS

[TenFrame\\_Assessment.docx](#)

[Lakey\\_MathLesson\\_10-19\\_enc.mp4](#)

### GENERAL COMMENTS

### I. ESTABLISHING GOALS AND STANDARDS

#### Subject Area(s)

Math

#### Central Focus

When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each name with one and only one object.

#### Standards

##### Common Core Standards

###### Mathematics, Grade K

*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.

##### California Academic Content Standards

###### Mathematics, Grade K

*Number Sense | 1.0 Students understand the relationship between numbers and quantities, (i.e., that a set of objects has the same number of objects in different situations regardless of its position or arrangement):*

- Standard 1.2: Count, recognize, represent, name, and order a number of objects (up to 30).

*Number Sense | 1.0 Students understand the relationship between numbers and quantities, (i.e., that a set of objects has the same number of objects in different situations regardless of its position or arrangement):*

- Standard 1.3: Know that the larger numbers describe sets with more objects in them than the smaller numbers have.

*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.

##### 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).

###### Reading, Grades K-2

*Fluency and Systematic Vocabulary Development | Beginning ELD level | Vocabulary and Concept Development ( The standards are also addressed in "Listening and Speaking.")*

- Standard : Produce simple vocabulary (single words or short phrases) to communicate basic needs in social and academic settings (e.g., locations, greetings, classroom objects).

##### Technology Standards

###### NETS (National Educational Technology Standards), Grades K-12

*NETS for Students | 6. Technology Operations and Concepts*

- Standard a: Students understand and use technology systems.

#### Grade/Level

Pre-K, Kindergarten

#### Content Objective

Students recognize the numbers 1 to 10 and can visually show these numbers by correctly coloring in the corresponding number of boxes on a ten frame.

Percentage of students who will meet the objective: 80%

## Academic Language Demands

Students will understand the mathematical vocabulary being used (ten frame, top row, bottom row, and the numbers 1 to 10) through teaching methods that include showing visuals, saying parts of a ten frame together whole group, partner sharing using the vocabulary, modeling how to fill in a ten frame while using vocabulary, physically filling in a large ten frame together, using ten frame manipulatives, inviting individual students to fill in a ten frame on the board, and students coloring in a ten frame on a worksheet.

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## II. LEARNING ABOUT STUDENTS

### Class Information

- Total Number of students: 26 (9 TK, 17 K)
  - Number of boys: 11 (3 TK, 8 K)
  - Number of girls: 15 (6 TK, 9 K)
  - African American: 3 (1 boy, 2 girls)
  - Asian American: 1 (1 boy, 0 girls)
  - Caucasian: 16 (5 boys, 11 girls)
  - Hispanic/Latino Americans: 6 (4 boys, 2 girls)
  - English Language Learners: none identified
  - Special Needs: Speech - 3 (1 boy, 2 girls)
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## III. MAKING ADAPTATIONS

### Adaptations

Wait Time, Grouping, Preferred Seating, Technology

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### Adaptation Details

Providing visuals for English Learners (ELs) including an image of a ten frame and pointing to the specific areas of the ten frame while saying the vocabulary and talking, modeling how to fill in a ten frame, and showing a visual on the whiteboard of a completed example of the assessment before handing it out. Additionally, allowing ELs to answer using one word sentences, pointing, or showing with their fingers, checking their work, partnering them with an English-fluent student for scaffolding, and providing one-on-one assistance when needed. Standing in close proximity to speech students when speaking and giving them the opportunity to answer questions in order for them to feel included. Checking the work first of students who lose focus easily or become frustrated quickly when meeting a performance obstacle and repeating the question or problem to these students directly to ensure that they understand what they need to do.

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## IV. ANALYSIS OF STUDENT LEARNING

### Assessment

Formative

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### Description of Assessment

Written assessment: At the end of the lesson, students will be given a worksheet (see attached example: TenFrame\_Assessment) that will require students to correctly fill in a ten frame independently according to the number they are given. The number on this worksheet will be larger than 5. To dissuade students from copying, these worksheets will have different numbers (Either 6, 8, or 9). These worksheets will be collected.

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## V. PROCEDURE

### Prerequisite Background Knowledge/Skills

Students must be able to visually recognize their numbers from 1 to 10 and know how many in a group match that number.

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### Materials

#### Technological Materials:

- Computer
- ELMO Projector
- SMART Board

#### Other Materials:

- Numbers 1 to 10 visual
  - Masking Tape
  - Ten Frame Manipulatives
  - "On My Own" Ten Frame Worksheet
  - Name Cards (if needed)
  - Pencils
  - Crayons
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### Open

~starting on the ABC rug~

#### **LINKS TO PAST LEARNING:**

1. I say: "Together as a class, lets count our numbers from one to ten."

\*we count numbers one to ten using a visual on the board\*

#### **STATE THE OBJECTIVE:**

2. I say: "Today we are going to learn how to show our numbers one to ten using... \*pointing at a ten frame being projected onto the whiteboard\* a ten frame"

3. "Lets say 'ten frame' together as a class \*we say 'ten frame'\*

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## Body

### **PARTNER ACTIVITY:**

1. I show them the part of the ten frame that is called the top row and we say it together as a class.
2. I have them partner share how many squares they think are in the top row.
3. I say: "Together as a class, how many squares are there in the top row?"

Students say: "Five"

4. We do the same three steps with the bottom row.

5. I ask: "If our top row has five squares and our bottom row has five squares, showing me with your fingers, how many squares do we have in a ten frame in all?"

Students show ten fingers.

### **MODELING:**

6. I fill in the numbers one to ten in the ten frame being projected onto the board with the SMART Board.

### **GUIDED PRACTICE:**

7. I say: "One day, I went on a hike. I was walking along and then... some animals jumped out of a bush!"
8. I call on three volunteers to come up using equity sticks and ask them to pick and share with the class which animal they are.
9. I ask: "How many animals are there?"

Students say: "Three"

10. I ask: "Will we fill in all of one row?"

Students say: "No"

11. I ask: "How many squares do I fill in?"

12. Students say: "Three"

### **MODELING**

13. I show them how to fill in a ten frame with the SMART Board (we fill in the top row first and move from left to right)

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14. I ask the volunteers I called up to do the same with a large ten frame on the floor made out of masking tape

15. We do the same with seven super heroes. This time students answering yes to the question if we fill in all of one row. Then asking how many we fill in the bottom row, with students answering "two".

### **MODELING:**

16. I show the students a ten frame manipulative they will be using at their seats using the ELMO Projector.
17. I tell them what I do not want to see them doing with the pieces while modeling (throwing them, flicking them, putting them in their mouth, etc.)
18. I show them how to use the manipulatives with the number seven.

### **INDEPENDENT PRACTICE:**

19. I give them directions that after everyone walks to their seat and sits down, I will give them a number one at a time and they need to show me this number using their manipulative like I just modeled to them.

~students go to their seats~

20. I give the numbers 1, 4, and 10 to them, one at a time.

21. Students fill in their ten frame to show the number.

22. I call on a student to complete 1 and 4 on the SMART Board, while I complete 10.
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## Close

### ASSESSMENT:

1. I project a completed example worksheet (with the number seven) onto the board and give directions to the students on how they are expected to complete the worksheet using my example as reference. I tell them that the number on their worksheet will be different from mine and their table partner's.
2. I direct them to put their name on their paper as soon as they get it and complete the worksheet and also tell them to turn their paper over and practice writing their numbers one to ten on the back when finished (to keep early finishers occupied).
3. I remove the example from the whiteboard
4. I pass out the worksheets and students complete them. Once everyone is finished, students will return to the ABC rug.

~students return to the ABC rug~

### WHAT THEY HAVE LEARNED:

5. I have students answer ten frame questions whole group, using a ten frame to point to for reference (What is this part called?(ten frame, top row, bottom row) How many squares are there in the top row? The bottom row? In all? What is the first row I fill in? What is the last? What is the first square I fill in? What is the last?)

~END OF LESSON~

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## VI. ANALYSIS AND REFLECTION

### Analysis and Reflection

The students had previously completed their Math chapter assessment which involved them needing to be able to recognize and write their numbers from one to ten and have just started to learn how to show numbers larger than ten by using ten frames. I developed this lesson so students could review and apply their previous learning of the numbers one to ten while learning about the different parts of a ten frame and how to fill in a ten frame with these numbers through the use of visuals, partner sharing, physically filling up a large ten frame using their bodies, and hands-on practice through the use of manipulatives.

The parts of the lesson that I found effective included the partner sharing. The students enjoy having the opportunity to work with a partner or in small groups and I was able to hear them talk about a ten frame while using the vocabulary (top row, bottom row, squares). I also found the addition of incorporating the opportunity for students to share their favorite animal or super hero during the guided practice activity to be effective. I saw that this increased student engagement while allowing me to learn more about the students and one student in particular who generally does not like to participate in activities in front of the class had a fun time openly participating in this activity. Lastly, I felt that the ten frame manipulatives were also effective because I saw that everyone was participating in using them without having to reengage students losing focus or not completing their work. There is one specific student who takes a long time to complete worksheets because she becomes easily distracted and loses interest in her work; however, she was actively participating with the manipulatives and was staying with the pace of the rest of the class. As always, letting some of the students come up and complete a problem for me on the SMART Board adds to making them further engaged in the lesson and gives them the opportunity to practice using technology.

The changes I would make to this instruction include having the students that I called up to participate in the guided practice activity moving back to their spots on the ABC rug after filling in the ten frame on the floor and before modeling how to fill in the ten frame on the SMART Board. I noticed that keeping the three "animals" at the front of the room while filling in the ten frame would cause a distraction at times. I had the "super heroes" move back to their spots before filling in the ten frame on the SMART Board, which dissolved students becoming distracted during my modeling and kept students engaged. Additionally, another change I would make to this instruction consists of starting to color in a wrong square on the ten frame and having students answer why it is incorrect before I correctly fill in the ten frame. This would alleviate any potential confusion and the students would be able to better give me the answers that I am looking for (such as, "because that square is in the bottom row" instead of "because we already have three squares colored in").

My initial objective goal was that 80%, or 14 out of 17 students, could visually show the numbers 1 to 10 by correctly coloring in the corresponding number of boxes on a ten frame. I formulated this percentage because I knew that three of the students still struggle with knowing these numbers. Upon looking at the results of the assessment, I discovered that I did not reach this goal, in which about 70%, or 11 out of 16 students (one student was absent) successfully met this goal (see application/next steps below for what I would now do with this information).

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### Application/Next Steps

From looking at the assessments, all of the five students who did not correctly fill in their ten frames did correctly use the color blue in the top row and the color green in the bottom row. This shows that 100% of the class, or 16 out of 16 students, understood that the top row needed to be blue and that the bottom row needed to be green, which shows me that I do not need to spend a lot of time on telling them what color I want in each row. Additionally, all of these students also filled in their ten frames from the left to the right, which shows me that the students understand and know how to perform this concept. Four of the five students were off by one square (colored in 10 or 8 squares instead of 9 and 7 squares instead of 6 or 8). This shows me that it would be good to build background knowledge and connect to their previous learning by having review activities before the start of the Math lesson where I have them fill in a few numbers on their own ten frame whiteboard. As Guillaume explained, using whiteboards is a great way to include whole group participation and practice of concepts while checking for understanding. Additionally, whiteboards save on paper waste as well. This repetition of using different numbers in a ten frame daily will increase student performance because of the "repeat to remember" brain rule, where re-exposure to a concept through repetition will increase memory and understanding of the concept. Lastly, one of the students correctly filled in 8 squares; however, she filled in three squares in the top row and five squares in the bottom row. This shows that I need to work with this student one-on-one during the ten frame review sessions in order for her to correctly remember the concept of filling in all of the top row first before filling in the bottom row.

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