

Math: Fun With Ten Frames

Lesson Objective:

After direct instruction and guided practice about how to use their ten frame and double-sided counters, the learners will explore different ways to reach (decompose) the number 10.

Standard(s) Addressed:

K.CC 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)

K.CC 4. Understand the relationship between numbers and quantities; connect counting to cardinality

K.OA 1. Represent addition...with objects, fingers, mental images...or equations

K.OA 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 $5=4+1$)

K.OA 4. From any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation

K.MD 3. Classify objects into given categories; count the number of objects in each category and sort the categories by count

Anticipatory Set:

"Can anyone tell me what this is?" (Hold up picture of a ten frame)

"That's right, this is a ten frame. What do we know about a ten frame?" (Take 2-3 responses if applicable)

"So we know that a ten frame is a rectangle made up of 10 boxes"

Perceived Objective and Rationale:

"Today we are going to use double-sided counters (hold one up for students to see) and this ten frame to explore different ways we can add up to the number 10. We will learn that there are many different ways that we can add up to 10!"

Input:

-First each student will get 10 double-sided counters (one side red, the other side white), a ten frame, and a cup

-At their desk, each student will place those 10 double-sided counters into their cup

-Each student will dump the double-sided counters onto their desk out of their cup, making sure that the double-sided counters all lay flat (emphasize to the students that they should just gently dump the double-sided counters out of the cup; there is no need to throw them!)

-Now, they will place a double-sided counter in each box of the ten frame (when they complete this step, the entire ten frame will be filled up)

-Each student will then quietly count how many red double-sided counters are in their ten frame, and how many white double-sided counters are in their ten frame

-Then each student will count the total amount of double-sided counters they have

-Emphasize to students that no matter how many red or white double-sided counters they see, it will always add up to a total of 10 double-sided counters (this should introduce the concept that there are many ways to decompose the number 10)

-Have students repeat this process until they believe they have mastered the concept, then give option for a 'challenge activity' if time allows

...Input for "Challenge Activity" (will be given to students individually as needed):

-First, do the same process as shown above but stop after they have placed a double-sided counter in each box of the ten frame

-After their ten frame is full of double-sided counters, they should fill in their "Fun with Ten Frames" worksheet based on what they see (copy what they see on the ten frame in front of them)

-For example, if they have 3 red double-sided counters and 7 white double-sided counters, they should color in 3 blank counters with a pencil (representing the red) on their worksheet, and leave the other 7 blank (representing the white); (make sure to emphasize that even though the counters may be red, fill them in with a pencil NOT a marker since this is math time)

-Now the student will count up how many they have of each color

-Underneath their ten frame they filled in on their worksheet, they will write the number they have of each in the appropriate blank

-Now they will have completed an equation that demonstrates that two parts can make up a whole of 10

Modeling:

Will be done at the same time as the students are given input

Checking for Understanding:

After input is complete, I will ask the students if there is any confusion before dismissing them to get their supplies.

I will also be walking around the room once the students begin their independent practice to see how they are doing.

Independent Practice:

The students will go to their desks and perform the activity as directed in the input above. If they believe that activity is too simple, they may ask for a worksheet to work on the 'challenge activity' (aka the "Fun with Ten Frames" worksheet).

Assessment:

Walk around the room to see if the students are picking up on the concept. This is their very first introduction to the decomposition of the number 10, so the goal is to get them in the right mindset that 10 can be broken down in many different ways.

Seeing how the children perform on the worksheet may give us a better idea how they are handling this concept, however, no formal assessment will be given.

Closure:

“So today we learned that we can reach the number 10 in many different ways. For example (Student’s name) saw that we can add 3 and 7 to reach ten, while (Student’s name) saw that we can add 4 and 6 to reach ten.”

Differentiation:

The challenge activity is meant to be given to any child who is able to work quicker than the other children with this concept. Since every child is at a different point in their math skills, some kids will reach the ‘challenge activity’ faster than others. This will allow the students who are struggling to take more time on understanding the concept, while allowing the students who are not struggling to get a little more challenge.