

Fill Your 10-frame

Sums of Ten with Two Addends

Objective/Goal: Students will learn how to compose numbers up to 10 using 10-frames.

Benchmarks Touched On	Benchmark Emphasized
K.1.1.1, K.1.1.2, K.1.1.3, K.1.2.1, K.1.2.2	K.1.2.1: Use objects and draw pictures to find the sums and differences of numbers between 0 and 10.
1.1.2.1, 1.1.2.2	1.1.2.2 Compose and decompose numbers up to 12 with an emphasis on making ten.
2.1.2.1, 2.1.2.2	2.1.2.1 Use strategies to generate addition and subtraction facts including making tens, fact families, doubles plus or minus one, counting on, counting back and the commutative and associative properties. Use the relationship between addition and subtraction to generate basic facts.

From Scimathmn.org: Students understand, explain and use accurate and generalizable methods to add and subtract two-digit whole numbers. Estimating sums and differences is also included in the work with addition and subtraction. They use mental strategies and algorithms based on place value and equality to solve problems.

Reference: Book *Math Misconceptions* by Bamberger p. 6

Materials:

- ∞ EM cards 0-10 or dice
- ∞ 10-frame Recording Sheet
- ∞ 20 unifix cubes in 10 of each color or tiles
- ∞ Math notebook
- ∞ Pencil
- ∞ Crayons/Markers that match the color of your cubes
- ∞ Vocabulary Cards: sum, add, subtract, difference, ten, numeral

Directions for Flex Group:

- ∞ Teacher asks *Student A* to choose a card from the stack of EDM cards 1- 10.
- ∞ All students places that number of cubes on the 10-frame with one color of the cubes.
- ∞ Teacher asks *Student A*, “How many cubes do you have on your 10-frame?”
- ∞ Teacher asks *Student A*, “How many cubes **do you need to fill** the 10-frame?”
- ∞ All Students fill in the rest of the 10-frame with the other colored cubes.
- ∞ *Student A* counts the number of cubes and *Student A* says “ _____ cubes and ____ cubes make 10 cubes altogether.”
- ∞ All Students fill a small 10-frame on the 10-frame Recording Sheet to show how the filled 10-frame looks.
- ∞ All Students record a number model under the small 10-frame.
- ∞ *This work is repeated three more times with teacher asking Student B, C and D to choose card and answer prompts.*

Variations: This activity can be adjusted to make combinations of 6, 7, 8 and 9.

Directions for Partner Work:

1. Partners work in groups of two and decide who is *Partner A* and who is *Partner B*.

2. *Partner A* chooses a number from 0 – 10 and tells *Partner B*.
3. Both place that number of cubes on the 10-frame with one color of the cubes.
4. *Partner A* asks *Partner B*, “How many cubes do you need to fill the 10-frame?”
5. Both fill in the rest of the 10-frame with the other colored cubes.
6. Both count the number of cubes and say, “ _____ cubes and _____ cubes make 10 cubes altogether.”
7. Both fill a small 10-frame on the 10-frame Recording Sheet to show how they filled the 10-frame.
8. Both record a number model under the small 10-frame.
9. Partners continue to work together switching roles to find and record as many different facts as they can.

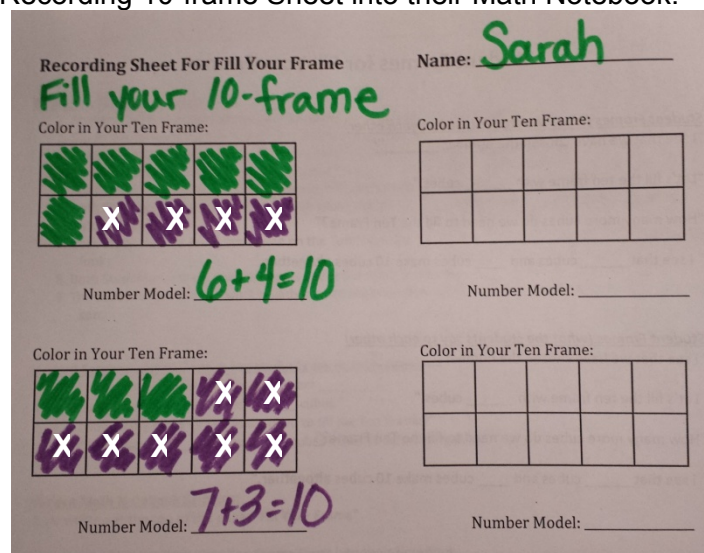
Student Sentence Frames (what the students say to each other):

- Partner A: “We start with the quantity _____.”
- Partner A: “How many more cubes do we need to make 10?”
- Partner A: “ I see that _____ cubes and _____ more cubes make 10 cubes altogether.”
- Partner A: “ _____ + _____ = 10”

Student Math Notebook Samples:

Title written at the top of the page: "Fill Your 10-Frame"

Students can glue the Recording 10-frame Sheet into their Math Notebook.



Purposefulness of Chosen Problems: This activity – working with filling the 10-frames and understanding that there are different combinations of ten will help the students develop **Level 1: Initial Concept of Ten**. This will help the student who does not see ten as a unit of any kind. The student focuses on the individual items that make up the ten. Student counts forward or backward by ones in addition or subtraction tasks involving tens. At this level, the student can identify numbers in the range of 1 to 10.

Student Sentence Frames for *Fill Your 10-Frame*

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Recording Sheet For Fill Your 10-Frame

Name: _____

Color in Your 10-frame:

Number Model: _____

Color in Your 10-frame:

Number Model: _____

Color in Your 10-frame:

Number Model: _____

Color in Your 10-frame:

Number Model: _____

Color in Your 10-frame:

Number Model: _____

Color in Your 10-frame:

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Vocabulary Cards

sum	sum	sum
add	add	add
subtract	subtract	subtract
difference	difference	difference
ten	ten	ten
numeral	numeral	numeral
quantity	quantity	quantity