Unit 5, Lesson 10

Introduce the 10-Frame

Standards

Addressing **K.CC.B, K.CC.B.5**

Instructional Routines

- Notice and Wonder

Goals

- Comprehend the term "10-frame" (in spoken language) refers to a tool made of two 5-frames put together that is used to represent numbers up to 10.
- Use counters and 10-frames to represent numbers within 10.

Student Facing Learning Goals

Let's make and use 10-frames.

Lesson Purpose

The purpose of this lesson is for students to understand the 10-frame as 2 combined 5-frames and to relate the 10-frame to fingers on two hands.

Narrative

In previous lessons and units, students represented numbers 1–10 on 5-frames. The structure of the 5-frame encouraged students to see numbers 6–9 in relation to 5. In this lesson, students create a 10-frame and begin to see numbers 1–9 in relation to 10. This lesson also connects the 10-frame with fingers on 2 hands. With repeated experience, students may be able to recognize quantities on a 10-frame without counting, or by counting on from 5 (MP7, MP8).

The 10-frame will be an important tool in upcoming lessons as students compose and decompose 10 in multiple ways and find the number that makes 10 when added to a given number.

Access for Students with Disabilities

- Representation

Access for English Learners

- MLR8

Required Materials

Materials to Gather

- Glue: Activity 1
- Scissors: Activity 1
- Two-color counters: Activity 2
- Counting mats: Activity 3
- Materials from previous centers: Activity 3

Materials to Copy

- Introduce 10-frames Handout (1 copy for every 1 students): Activity 1
- Numbers on Fingers and 10-frames Handout (1 copy for every 1 students): Activity 2
- Counting Collections Stages 1 and 2 Recording Sheet (1 copy for every 1 students): Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	20 min
Synthesis Estimate	5 min

Teacher Reflection Questions

In the next several lessons, students will find different ways to compose and decompose 10. The structure of the 10-frame can help students organize and understand these compositions and decompositions. How does organizing the counters on the 10-frame from left to right, top to bottom support this work?

Warm-up

10 min

Notice and Wonder: Fingers and 5-Frames

Standards

Addressing **K.CC.B**

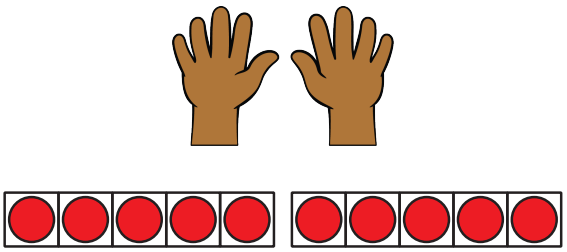
Instructional Routines

- Notice and Wonder

The purpose of this *Warm-up* is to elicit the idea that fingers and 5-frames both show 10 in 2 groups of 5, which will be useful when students use 5-frames to create a 10-frame and represent quantities on 10-frames in later activities.

Student Task Statement

What do you notice?
What do you wonder?



Student Response

Students may notice:

- There are 10 fingers.
- There are 10 red circles or counters.
- There are 5 fingers on each hand.
- There are 5 red circles or counters in each 5-frame.

Students may wonder:

- What do the fingers represent?
- What do the counters represent?
- Why are there the same number of fingers and counters?

Launch

- Groups of 2
- Display the image.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.

Activity Synthesis

- "How are the fingers and the counters on 5-frames the same?" (Each hand has 5 fingers. Each 5-frame has 5 counters. There are 10 fingers and 10 counters.)

Activity 1

15 min

Introduce 10-Frames

Standards

Addressing **K.CC.B.5**

The purpose of this activity is for students to represent quantities between 5 and 10 using 5-frames. Students cut out and put together 5-frames to create a representation of a given number. The images in the student responses look like 10-frames, but students may put the 5-frames together in creative ways or take parts of more than two 5-frames. Students may choose to use one 5-frame and draw additional circles to form the number. In the *Activity Synthesis*, students see and discuss a 10-frame for the first time. If needed, the 5-frames can be cut out for students before the activity.

Required Materials

Materials to Gather

- Glue: Activity 1
- Scissors: Activity 1

Materials to Copy

- Introduce 10-frames Handout (1 copy for every 1 students): Activity 1

Student Task Statement

Cut out and glue the 5-frames.

1. 
2. 
3. 
4.

Launch

- Groups of 2
- Give each student a copy of the Introduce 10-frames handout, glue, and scissors.
- "Make each number. You can cut out the 5-frames to help you make each number."

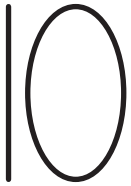
Activity

- 8 minutes: partner work time
- Monitor for students who glue two 5-frames, one right above the other.

Activity Synthesis

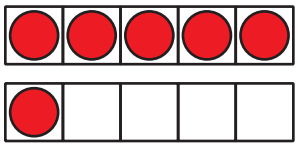
- Invite previously identified students to share their 5-frames for 9.
- "Today we are going to start using a new tool called a **10-frame**. It holds 10 counters and helps us organize and show numbers. A 10-frame is two 5-frames put together."
- Display a 10-frame or an image, such as:

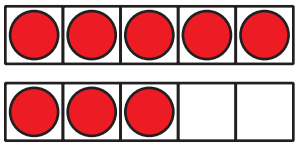


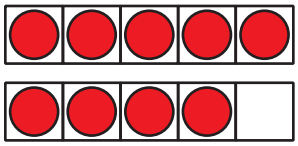


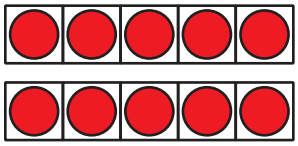


Student Response

1. 

2. 

3. 

4. 

Activity 2

10 min

Numbers on Fingers and 10-frames

Standards

Addressing **K.CC.B**

The purpose of this activity is for students to gain familiarity with the 10-frame by showing different numbers on it. While students may arrange the counters on the 10-frame in many different ways, the structure of the fingers with 5 on one hand and some more on another hand, encourages students to think about the 10-frame as 2 groups of 5.

The purpose of the *Activity Synthesis* is to highlight the convention of filling out the 10-frame from top to bottom and left to right. This allows students to see numbers 6–10 in relation to 5 and also makes it easy to determine how many squares are empty. While students may organize their counters differently, representations will be organized this way to emphasize the structure of the tool. In addition, moving from left to right and from top to bottom aligns with and reinforces the way children learn to read.

Access for English Language Learners

MLR8 Discussion Supports. Invite students to begin partner interactions by repeating the question, "How many fingers are held up?" for each picture. This gives both students an opportunity to produce language.
Advances: Conversing

Access for Students with Disabilities

Representation: Develop Language and Symbols. Synthesis: Make connections between the 5-frame representation that can be seen in the 10-frame that is being used. For example "Do you see a 5-frame in the 10-frame?" Reiterate the fact that when we use the 10-frame we will fill the top row first and then move from left to right. If time allows, show a non-example of what a 10-frame could look like.
Supports accessibility for: Visual-Spatial Processing, Conceptual Understanding

Required Materials

Materials to Gather

- Two-color counters: Activity 2

Materials to Copy

- Numbers on Fingers and 10-frames Handout (1 copy for every 1 students): Activity 2

Student Response

1. 6 counters
2. 3 counters
3. 10 counters
4. 7 counters
5. 8 counters
6. 5 counters

Launch

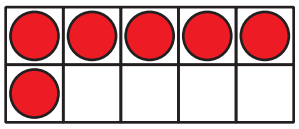
- Groups of 2
- Give each student a copy of the blackline master and two-color counters.
- "Figure out how many fingers are held up in each picture. Then use your counters to show that number on the 10-frame."

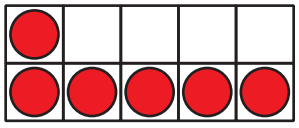
Activity

- 6 minutes: partner work time

Activity Synthesis

- Display 10-frames filled as shown:

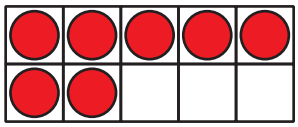




- "What is the same about these 10-frames? What is different?" (They both show 6 counters. They both have one full row and one counter in the other row.

The top one has a full top row and the bottom one has a full bottom row.)

- "In the images that we'll use in class, we will fill the top row first, from left to right, and then go to the bottom row and fill it from left to right."
- Display 10-frame filled as shown:



- "This is how we'll show 7."

Activity 3

20 min

Revisit Counting Collections—Up to 20

Standards

Addressing **K.CC.B**

The purpose of this activity is to revisit Stage 1 of the *Counting Collections* center. When this center was first introduced, students counted collections of up to 20 objects. In this variation, after students count their collections, they then represent their count in a way that makes sense to them. A recording sheet is available as a blackline master. Students may use drawings, numbers, or words to represent their count.

Give students access to counting mats, 5-frames, and 10-frames to help them accurately count or organize their collections. Use formative assessment data collected in previous sections to inform the number of objects in collections for individual students.

After they participate in the center, students choose any previously introduced stage from these centers:

- Shake and Spill
- Roll and Add

Students will choose from these centers throughout the section. Keep materials from these centers organized to use each day.

Required Materials

Materials to Gather

- Counting mats: Activity 3
- Materials from previous centers: Activity 3

Materials to Copy

- Counting Collections Stages 1 and 2 Recording Sheet (1 copy for every 1 students): Activity 3

Required Preparation

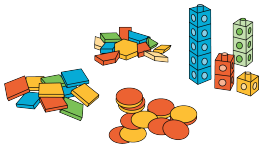
- Gather materials from previous centers:
  - Counting Collections, Stage 1

- Shake and Spill, Stages 1–3
- Roll and Add, Stages 1 and 2

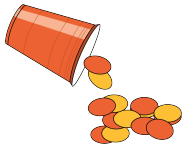
Student Task Statement

Choose a center.

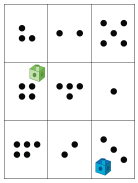
Counting Collections



Shake and Spill



Roll and Add



Launch

- Groups of 2
- Give each group of students a collection of objects, two recording sheets, and access to 5-frames, 10-frames, and counting mats.
- "We are going to learn a new way to do the *Counting Collections* center."
- Show students a collection of objects.
- "You and your partner will get a collection of objects. Work with your partner to figure out how many objects are in your collection. When you and your partner agree on how many objects are in your collection, show how many there are on your recording sheet using drawings, numbers, or words."

Activity

- 8 minutes: partner work time
- "Now you can choose another center. You can also continue with *Counting Collections*."
- Display the center choices in the student book.
- Invite students to work at the center of their choice.
- 8 minutes: center work time

Activity Synthesis

- "Mai counted a collection of 8 toy cars. What are some different ways she could show this on her recording sheet?" (She could write the number 8. She could draw 8 circles.)

Lesson Synthesis

"Today we used a new tool called a **10-frame** to organize and show numbers."

Display a 10-frame with 6 red counters.

"Tell your partner what you know about this 10-frame." (There are 10 squares on the 10-frame. There are 5 squares on the top and 5 squares on the bottom. There are 6 counters. 4 of the squares are empty.)

"Use your fingers to show how many counters are on the 10-frame."

Observation

Lesson Observations for Unit 5, Section C

Standards

Addressing **K.CC.B**

Look Fors

- Recognize that a full 10-frame contains 10 counters and that 2 hands have 10 fingers.