

Figure 2.17. *Our Counting Collections: K–2 Adapted Task*

Our Counting Collections



Muñeca quitapena (Guatemalan Worry Doll)


Overview: Teacher Notes

Students will develop competence in 1–1 correspondence. In this task, students will work with ten frames to count objects.

Prerequisite Understandings

Say, write, or identify numbers from 0–10.
Count up to 10 objects using 1–1 correspondence.

Cognitively Relevant and Culturally Demanding Framework Connection (Figure 1.8)

 Visit www.mathedleadership.org/EAsources to download a free reproducible version of this figure.

Task Rating: Developing Task

Requires considerable cognitive effort AND is embedded in cultural/self/community inquiry and activity

- The task is centered in real-world situations requiring students to inquire deeply about themselves, their communities, and the world about them.
- Requires students to draw from, use, and embrace community and cultural knowledge directly in developing strategy and solution processes.
- Task content seeks to add to this knowledge through mathematical activity.

Task Rating Reflection

This task has students both looking at other cultures in the warmup and then sharing their own culture while doing the activity.

The task has students thinking about the collections that they have and the various ways in which they can count them. It also gives them the opportunity to learn about the collections within their classroom community.

Students are adding to their own cultural knowledge and learning about their classmates through this task as they count their classmates' collections all while doing math.

(continued on next page)

Our Counting Collections (continued)

Curriculum Content

Content Standards Counting and Cardinality	<p>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). Understand that the last number name says the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.</p> <p>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.</p> <p>Extension Standards</p> <p>Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.</p> <p>Compare two numbers between 1 and 10 presented as written numerals.</p>
Mathematical Process Standards	<p>Reason abstractly and quantitatively: Students have the opportunity to use counting to reason that the way objects are counted does not affect the number of objects.</p> <p>Model with mathematics: Students create a picture to demonstrate a quantity represented by a number.</p> <p>Use appropriate tools strategically: Students must make appropriate choices placing their objects into ten frames to represent the situation.</p>

Task

Supplies <ul style="list-style-type: none"> 0–20 number track 2 small brown paper bags for the collection and organizing (see picture above) or 2 ten frames <p>A collection of objects brought from home or high-interest items you make available in class.</p>	Core Activity <p>Students will count their collections and compare their collections. Ask students to use ten frames to organize objects in two ways without changing their values.</p>
Launch <p>Show each image to your students and ask them how many they see and how they see them. Feel free to show images that are reflective of your classroom community and the cultures represented within your class.</p> <p>Practice number recognition by having students look at a picture of a collection, count, and say the correct number. Continue to practice counting by asking students to count objects and write or say the correct number.</p>	Extension(s) <p>More or fewer objects could be used. Multiple ten frames could be used to help students model numbers up to 20. Explore comparing more deeply by assigning students a different number of objects and asking them to compare to each other (fewer, more than, or equal to).</p>

(continued on next page)

Our Counting Collections (continued)

Launch

- Show each image to your students and ask them how many they see and how they see them. Feel free to show images that are reflective of your classroom community and the cultures represented within your class.

In African culture, hair beads are added to braids.

How many beads are on one braid? How do you know?



In Mexican culture, banners made of colorful paper called *papel picado* are used to celebrate birthdays and weddings.

How many banners do you see? How do you know?



(continued on next page)

Our Counting Collections (continued)

In Chinese culture, paper lanterns are used for celebrations.

How many lanterns do you see? How do you know?



In Indian culture, Punjabi shoes are worn on special occasions.

How many shoes do you see? How do you know?



(continued on next page)

Our Counting Collections (continued)

Activity

The teacher will bring in a collection of their own personal items to share with the class. The collection could represent one of their favorite things, something they use daily or something from their culture. Please keep the number of items up to or less than 20 (preferably less than 10 for the first example). Let the students count the collection in any way they want to organize it. Be sure you capture the different ways to count the different ways they count their collection. You can have ten frames and number tracks available if they choose to use them.

Students will demonstrate how to count the set of items, pointing to each item and saying each numeral during the count as the teachers check on each of the students. The teacher will facilitate the discussion around both the collection and the way they counted their collection. It is important that students are given a choice so they can showcase their thinking of how they counted their collection.

Questions to Guide Discussion

How many (insert item) does (insert teacher name) have? _____

How do you know?

Have students turn and talk, then share out. The teacher would have pairs of students share their thoughts.

Next, the teacher uses one of the student collections and puts them into a ten frame (double ten frame). The teacher asks the student to talk about their collection and explain why it is important to them. Then the teacher will pose the following questions:

How many (insert item) does (student's name) have? _____

How do you know?

Have students turn and talk, then share out. The teacher would have pairs of students share their thoughts.

How many (insert item) does (insert student's name) have? _____

How do you know?

Have students turn and talk, then share out. The teacher would have two to three pairs of students share their thoughts (repeat one to two more times).

Independent Work

Each student will count their collection any way they wish and record the count on a piece of paper and place it next to the collection. If the teacher has access to a camera, photograph each student's collection. If not, they can draw their collection. Have students count their collection two different ways and record the number on each drawing.

Photographs or drawings can be shared in a slide show, using a gallery walk, or posted for the class to see. These collections can serve as daily warmup.

Extension Ideas

Have students compare each other's collections. Which set has more? Which set has less? How do you know?

Supports

Ten frames

Number tracks from 1–10 (for students struggling with counting up to 10)

Number tracks from 1–20

 Visit www.mathedleadership.org/EAResources to download Number Tracks (online only)


Sentence frames for students to help them explain their thinking, such as:

I see _____. I know this because _____.

After students complete the task, here are some ways to both extend and honor their learning and the sharing of their story:

- Display the collection and welcome other classes to come in and see the collections.
- Invite families and have students talk about their collection and how they counted it.
- Compare and contract collections.
- Continue to use the pictures of their collections in later mathematics lessons to compare numbers, number of the day, and number webs, or create WWDB (Which one Doesn't Belong) activities.

Figure 2.17. *Our Counting Collections: K–2 Adapted Task*

 Visit www.mathedleadership.org/EAResources to download a free reproducible version of this figure.