

Counting Jar

Counting is the foundation for much of the number work that students do in kindergarten and in the primary grades. Children learn to count by counting and hearing others count. Similarly, they learn about quantity through repeated experiences with organizing and counting sets of objects. The Counting Jar routine offers practice with all of these.

When students count sets of objects in the jar, they are practicing the counting sequence. As in the Attendance routine, they begin to see the need to develop strategies for counting, including ways to double-check and keep track of what they have counted. By recording the number of objects they have counted, students gain experience in representing quantity and conveying mathematical information to others. Creating a new equivalent set gives them not only another opportunity to count, but also a chance to compare the two amounts.

Does my set have the same number as the set in the jar? How do I know?

The jar has 8 and I have 7. I need 1 more because 8 is 1 more than 7.

As students work, they are developing a real sense of both numbers and quantities.

The Counting Jar routine is introduced in the first unit of the kindergarten curriculum, *Mathematical Thinking in Kindergarten*. The basic activity is described here, followed by suggested variations for use throughout the school year on a weekly basis.

Materials and Preparation

Obtain a clear plastic container, at least 6 inches tall and 4–5 inches in diameter. Fill it with a number of interesting objects that are uniform in size and not too small, such as golf or table tennis balls, small blocks or tiles, plastic animals, or walnuts in the shell. The total should be a number that is manageable for most students in your class; initially, 5 to 12 objects would be appropriate quantities.

Prepare a recording sheet on chart paper. At the top, write *Counting Jar*, followed by the name of the material inside. Along the bottom, write a number line. Place each number in a box to clearly distinguish one from another and to help students count them more easily.

Laminate this chart so that students can record their counts on the chart with stick-on notes, write-on/wipe-off markers, or small squares of paper and tape; these can later be removed and the chart reused.

Also make available one paper plate for each student and sets of countable materials, such as cubes, buttons, keys, teddy bear counters, or color tiles, so that students can create a new set of materials that corresponds to the quantity in the Counting Jar.

Counting Jar: Color Tiles														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Counting

How Many in the Jar? The basic routine has three steps:

- Working individually or in pairs, students count the objects in the Counting Jar.
- Students make a representation that shows how many objects are in the jar and place their response on the chart.
- Students count out another set of objects equivalent to the quantity in the Counting Jar. They place this new set on a paper plate, write their name on the plate, and display their equivalent collection near the Counting Jar.

As you use Counting Jar throughout the school year, call attention to it in a whole-group meeting whenever you have changed the material or the amount inside the jar. Then leave it in a convenient location for two or three days so that everyone has a chance to count. After most students have counted individually, meet with the whole class and count the contents together.

Note: Some kindergarten teachers use a very similar activity for estimation practice. We exclude the task of estimation from the basic activity because until students have a sense of quantity, a sense of how much 6 is, a sense of what 10 balls look like compared to 10 cubes, it is difficult for them to estimate or predict how large a quantity is. When students are more familiar with the routine and have begun to develop a sense of quantity, you might include one of the variations suggested for Estimation.

One More, One Less When students can count the materials in the jar with a certain amount of accuracy and understanding, try this variation for work with the ideas “one more than” and “one less than.” As you offer the Counting Jar activity, ask students to create a set of objects with one more (or less) than the actual amount in the jar.

Filling the Jar Ourselves When the Counting Jar routine is firmly established, you might give individuals or pairs of students the responsibility for filling the jar. Discuss with them an appropriate quantity to put in the jar or suggest a target number, and let students decide on suitable objects to put in the jar.

At-Home Counting Jars Suggest to families that they set up a Counting Jar at home. Offer suggestions for different materials and appropriate quantities. Family members can take turns putting sets of objects in the jar for others to count.

Estimation

Is It More Than 5? To introduce the idea of estimation, show students a set of five objects identical to those in the Counting Jar. Ask them to think about whether there are *more than* (or less than) five objects in the jar. This gives students a concrete amount for reference to base their estimate on. The number in the reference group can grow as the number of objects in the jar changes, and you can begin to ask “Is it more than 8? more than 10?”

More or Less Than Yesterday? You can also encourage students to develop estimation skills when the material in the jar stays the same over several days but the quantity changes. In this situation, students can use reasoning like this:

Last time, when there were 8 blocks in the jar, it was filled up to *here*. Now it's a little higher, so I think there are 10 or 11 blocks.