K(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system.
$\mathbf{K}(\mathbf{2})(\mathbf{B})$ The student is expected to read, write, and represent whole numbers from 0 to at least 20 with and without objects or pictures.
$\mathbf{K}(\mathbf{2})(\mathbf{C})$ The student is expected to count a set of objects up to at least 20 and demonstrate that the last number said tells the number of objects in the set regardless of their arrangement or order.

## Materials

- 20 counters

Procedure: Provide students with counters.

1. Create a set of 5 counters.
2. Create a set of $\mathbf{9}$ counters.
3. Create a set of $\mathbf{1 4}$ counters.

## 4. Create a set of $\mathbf{1 8}$ counters.

This activity may be repeated using different numbers from 0 to 20. You may also show the student written numbers to prompt him or her to create a set of counters.

\begin{tabular}{|c|c|}
\hline Check Student's Responses: \& Check Student's Strategies: \\
\hline \begin{tabular}{l}
1. The student created a set with:
5 counters \\
- \(\qquad\) counters
\end{tabular} \& \multirow[t]{4}{*}{\begin{tabular}{l}
The student:
Counted counters one at a time
Pushed aside counters or pointed to counters
Other: \\
Notes:
\end{tabular}} \\
\hline 2. The student created a set with:
9 counters

$\qquad$ counters \& <br>
\hline 3. The student created a set with:
14 counters

$\qquad$ counters \& <br>
\hline 4. The student created a set with:
18 counters

$\qquad$ counters \& <br>
\hline
\end{tabular}

$\mathbf{K ( 2 ) ( B )}$ The student is expected to read, write, and represent whole numbers from 0 to at least 20 with and without objects or pictures.
$\mathbf{K}(\mathbf{2})(\mathbf{C})$ The student is expected to count a set of objects up to at least 20 and demonstrate that the last number said tells the number of objects in the set regardless of their arrangement or order.

Possible interpretations, issues to follow up on, and implications for teaching

## What did you observe?

- The student counted one object at a time and counted aloud. Consider whether or not:
- The student repeated the last number in the counting sequence (e.g., 7...8...8).
- The student understands that each counting word corresponds to one object AND the total number of all objects counted up. This is an aspect of cardinality-that the last number indicates how many.

To assess this understanding, present the student with a given number of counters. Say, "Here are six counters. Please give six counters to [another student]." Observe the student's strategy.

- The student pushed aside or pointed at objects, then gave you the entire group of objects. If the student recognizes that the number in a set remains the same even if the objects are moved into different formations, he or she may be ready to create sets of given sizes beyond 20 .
- The student created the sets in what appears to be an arbitrary way. The student may need additional support.

A teaching strategy may involve asking the student to create small sets of objects, two or three, and gradually increasing the number when the student appears ready.

