Illustrative Mathematics

K.CC Number Line Up

Alignment 1: K.CC.A.2

The teacher will need a set of number cards (easily created using large index cards) that begin with 1 and end with the number of students in the class. So for a class of 22, the teacher would need 22 cards numbered from 1-22. Remove the card(s) with the largest number(s) to adjust for absent students.

Shuffle the cards until they are in random order in preparation of handing one care to each student. Ask students not to look at their card until the teacher says, “GO.” The teacher should identify where "1" should stand and the direction the line should form.

When the teacher says, “GO,” students work together to order themselves from 1 to the largest number. Each student should hold his or her number card face out, so that it is visible to others. When students are satisfied with their line up, ask them to read their numbers, beginning with "1." In other words, the student holding the card with a number 1 says “one,” followed by the student with the 2 card who says “two,” until the class counts through the sequence. This is ideal as a weekly routine, giving students the opportunity to develop systems that make make lining up easy for them to do.

Commentary:
The first time students do this activity, the teacher may have to lead students through by actually saying, “who has 1, who has 2, who has 3,” and so forth, but doing this once helps students understand what is needed and they will be able to work together as a group without much direction. If a group really struggles, try working with a smaller group and a fewer number of cards. Or divide the class into two teams and give each team an identical set of cards, numbered 1 to 11 (for a class of 22) if the class isn’t ready to deal with numbers up to 20. It may be worth a class discussion about efficient approaches students use to line up. Students might suggest larger-numbered students go to the end of the line far away from 1. More sophisticated would be for student to divide themselves into decades.

Other variations:

- Turning this activity into a race can be very motivating for students. The students can race against the clock and the teacher keeps track to see if they can improve their time. The class can also be divided into teams and each team works on the numbers 1-10 or 10-20 or whichever sequence will support the number of students in the class divided into two groups.

- The counting sequence does not always need to start with "1" (although that certainly would be necessary in the beginning). Over time students may be able to use the number sequences like 2 - 23 or 5 - 27.

- Draw an empty number line across the bottom of the chalk or whiteboard and mark 0 on the left end and 25 on the right end. Have a student come up and draw a number card and place the card in order along the number line using the ledge of the whiteboard to prop up the cards (students can also hold the cards if there is no ledge). The next student comes up and draws a card and places that card in relationship to the previous card. For example, if the first card selected is 12 it would go in the middle of the number line, if the next card was 5 it would go in between the 0 and the 12 and so on. This continues until all cards are in the correct order, although it is doubtful the spacing between the cards will be completely regular since kindergartners' perceptions of numbers as evenly-spaced locations on a number line may be underdeveloped. Students can assist each other as needed with placement of the cards.

- Draw an empty number line across the bottom of the chalk or whiteboard and mark 0 on the left end, 10 in the middle, and 20 on the right end. Call a student to stand in front of the number line in the center at 10 and place a number written on a sticky note on the student’s back (the student will be facing the board). The student tries to guess the number on his back. The other children take turns to help him identify his number as quickly as possible by getting him to move to the left or the right. Emphasize the use of math vocabulary such as more, less etc. For example, if a student has 7, the other students might say, “your number is less” or “move left a small amount.”

Solution: Solution

The students will be standing in a line in the correct order from 1 to whatever the number of students participating is.