# PRACTICE TASK: Fill the Chutes

Approximately 1 Day, then as center (Van de Walle Activity 2.3)

## STANDARDS FOR MATHEMATICAL CONTENT

**MCC.K.CC.2.** Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

**MCC.K.CC.4.** Understand the relationship between numbers and quantities; connect counting to cardinality.

a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
c. Understand that each successive number name refers to a quantity that is one larger.

## STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

## BACKGROUND IKNOWLEDGE

Children will learn *how* to count (matching counting words with objects) before they understand that the last count word indicates the *amount* of a set or the *cardinality* of a set. Children who have made this connection are said to have the *cardinality principle*, which is a refinement of their early ideas about quantity. (Van de Walle, 2006)

## ESSENTIAL QUESTIONS

- How can playing board games make me a better mathematician?
- What types of questions should I ask myself or my partner when playing a math game?

## MATERIALS:

- 20 counters per player
- 1 number cube (die) (1-6)
- *Fill the Chutes* game board

## GROUPING:

1-4 players

## TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION:

**Part I**
Place all the counters in a central pile where all players have access to them. Players take turns rolling the die and collecting/placing the corresponding amount of counters in their chute that matches the roll on the die.

Both players must count out loud the total number of counters in their chute as they are added.

If a player has 3 spaces remaining unfilled and they roll 4 they cannot fill up the chute and have a leftover or unused counter. The chutes must be filled exactly.

**Part II**
After students have had an opportunity to engage in the activity the purpose of the roll alternates each time.

Player 1 rolls and adds counters to the chute as they count out loud. On the next roll player 1 removes counters from the chute counting backwards. The first player to fill the chute wins the game. This version of the activity helps with counting forward/backwards number sequence with a starting a number other than 0 or 1.

## FORMATIVE ASSESSMENT QUESTIONS

- What number did you roll?
- How many counters do you have in your chute right now?
- What number do you need to roll to fill your chute?
- Which chute has the most? Least?

## DIFFERENTIATION

**Extension**

- Change the value of each space to 10 and have students skip count by 10 to 100. Note: the chute won't be filled if students play to 100. After students are familiar with skip

counting forward by tens, they may alternate rolls to skip count backwards and forwards. You may also make a version with no individual spaces, instead the playing board would consist of columns. This allows for a variety of counters to be used, including paper clips, pennies, etc. Use only one type of counter when playing, of course!

## Intervention

- Because the students must say the total number of counters out loud, the numerals for each space could be written on the game board to help with number recognition and counting forward and backwards.