Activity B.3: Mother May I?

Learning Objectives:

1) Practice simple addition and subtraction.

Examples of Skills Accomplished:

1) Counting 1, 2, 3
2) Adding 3 + 2 = 5
3) Subtraction 6 - 2 = 4

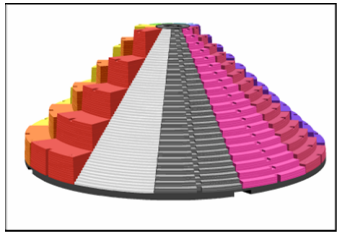
Setup:

1) Use the 3x staircase for this game.
2) Use the tokens from the red foam card to indicate subtraction. Place the tokens numbered **0 through 5** in the treasure trove.
3) Using any other three colors of foam cards to indicate addition, place the tokens numbered **1 though 5** in the treasure trove.
4) Each player needs his/her own marker small enough to fit on the 3x staircase (button, shell, beads, uniquely colored token used blank side up, etc.)
5) An additional foam card will be used during play to number the steps.

Recommended Number of Players for Small Group Activities: 1 to 3

Players Positions: Standing or seated

Grey foam logs: In



Game Objective: Reach the top of Zillio by moving up or down the appropriate number of steps based on the color and number of the token drawn from the treasure trove. 1) Using a new foam card (any color not already in use), have players help you place consecutive numbers (1 to 20) number side up in the notches on the 3x staircase. 2) Now have players turn the tokens over in place blank side up. 3) Have each player put his/her marker on the table-top or floor in front of the 3x staircase.	
4) Players take turns picking a token out of the treasure trove and request permission to move to the correct step using the following format. Explain that any red token represents a subtraction problem and means they have to move down from their present position. Any other color token represents an addition problem and allows them to move up. They must calculate and tell you the ending position before they are allowed to move. a. If it is **not a red** token, "Mother, May I move **up** ___ steps to the _____th step because (starting position) + (token) equals (ending position)". For example, a player on the 4th step who draws a blue token #3 would ask: "Mother, May I move **up** 3 steps to the 7th step because 4 + 3 equals 7". b. If it is a **red** token, "Mother, May I move **down** ___ steps to the _____th step because (starting position) - (token) equals (ending position)". **(See the sidebar for how to handle a calculated difference that results in a negative number.)** For example, a player on the 10th step who draws a red token #4 would ask: "Mother, May I move **down** 4 steps to the 6th step because 10 - 4	Hints: • Have the player hold the token selected from the treasure trove next to the token of his/her starting position to help them calculate the ending position. • If the red number is bigger than the current position so the difference would result in a negative number help the player to learn to say "negative number" and draw again.

equals 6".

5) Make sure the player moves his/her marker up/down the appropriate number of steps and ask the player to see if he/she is correct. He/she may turn the token in the notch number side up (if is not already number side up from a previous play).

6) Evaluate proposed solutions to determine final position:
    a. Correct addition, the player's marker stays at the calculated sum and the player's turn is over.
    b. Correct subtraction, the player's marker stays at the correct difference but he/she gets a free turn.

7) For incorrect problems:
    a. Incorrect addition, the player stays at his/her starting position.
    b. Incorrect subtraction, the player has to move to the correct difference but he/she **doesn't** get a free turn.

8) After the player's turn is over, replace the numbered token in the treasure trove.

9) Continue play with a new player selecting the token and asking "Mother May I move ___ steps?"

10) The first player to calculate an ending position of 20 or more correctly wins.

11) After one player has made it to the top, all other players get a chance to join him/her immediately by correctly stating a sum that would get them to an ending position of 20 or greater.

12) If you wish at this point, take a turn yourself by placing a token on a step near the top to model a large addition problem. For example
    a. Place your token on the 17^{th} step and say "17 +100 = 117" and move your token to the top.

<table>
<tr><td>b. Put your token back on the 17th step and say "17 + 1 thousand = 1 thousand and 17" and move your token to the top
c. Allow the players to take turns.

13) After all play is over return all tokens to their correct location in the correct foam cards. If desired leave the tokens numbering the steps 1 to 20 in place on the 3x staircase to work with another group.</td><td></td></tr>
<tr><td>Observe and Assess:

1) See what skills students are using to approach the problem: counting on their fingers, counting the steps, using memorized fact families, problem solving techniques.

2) Students' ability to calculate sums and differences correctly.</td><td>Hint: One problem solving technique might be: "14 - 5 must = 9 because I would land on a step between steps with tokens 8 and 10 already turned number side up".</td></tr>
<tr><td colspan="2">Group Discussion:

N/A</td></tr>
<tr><td colspan="2">Transition to Paper:

1) Assign the reproducible as either class work or homework.</td></tr>
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zillio

a zillion ways to play math

Name: _____ Date:_____

a) 2 + 1 = 3	**b)** 3 + 1 = 4
c) 4 + 2 = 6	**d)** 6 - 2 = 4
e) 2 + 5 = 7	**f)** 10 - 1 = 11
g) 9 + 3 = 12	**h)** 14 + 3 = 17
i) 100 + 3 = 103	**j)** 2000 + 3 = 2003