

Ozobot Blockout Math Game
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Introduction

Are you looking for a great way to give your students practice in multiplication and the associated geometry of rectangles *without making it seem like an academic exercise*? If so, then the math game “Ozobot Blockout” may just be what you are looking for! Your students will also learn to develop winning strategies while having fun competing with one another.

“Ozobot Blockout” is reminiscent of a two-dimensional version of the three-dimensional video game *Blockout* that became popular in 1989. In this video game, various shaped blocks appear and fall into a deep pit while being x-y-z maneuvered by the player. “Ozobot Blockout” is also a simplified version of the game *Tetris*, in which players manipulate tetrominoes that descend onto a playing field.

Ozobot Blockout

The “Ozobot Blockout” Ozomap, designed for two players, is shown in Figure 1. Full-page copies can be printed from the provided file *Blockout Ozomap.pdf*. The provided OzoBlockly program, *Ozobot Blockout.ozocode*, is loaded into Evo and then the program is started. Evo will move to the first die and speak the resulting random number from 1 to 6. Suppose that it is 2. Then Evo will move to the second die and speak the result of that roll. Suppose that it is 5. Player 1 then draws and shades in a 2x5 rectangle on player 1’s grid. Evo moves to the far right and does an about face. Evo will then wait until player 2 presses Evo’s button to start player 2’s turn. Evo will speak the result of the two die throws while moving back to the left. Suppose that the two die rolls are 3 and 4. Player 2 will then draw and shade in a 3x4 rectangle on player 2’s grid. The players continue taking turns in this manner.

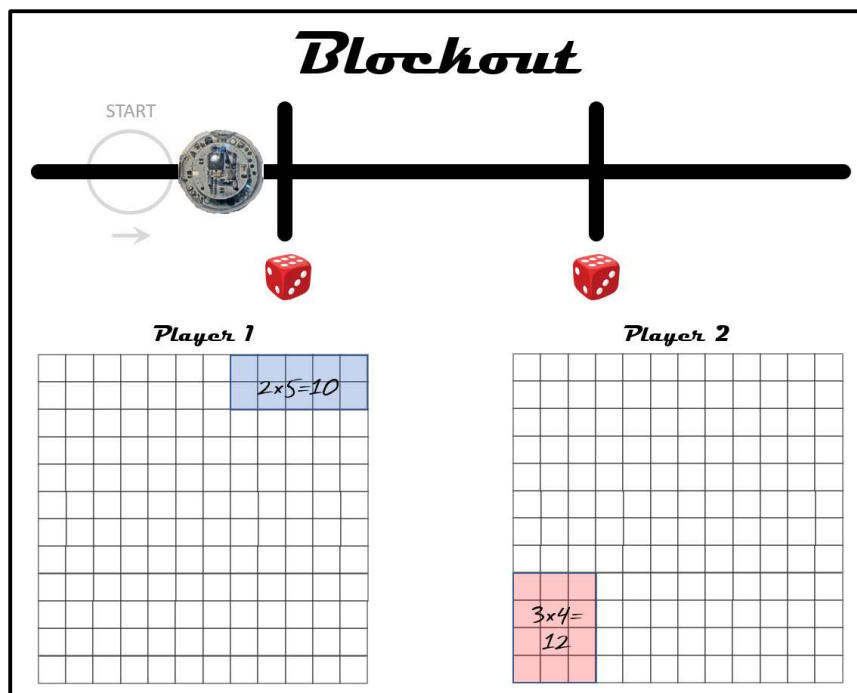


Figure 1

Rules of the Game

- When a player rolls, say 3 and 4, he or she may construct a 3x4 or a 4x3 rectangle on the grid.
- A player may not shade in a grid square that has already been shaded in during his or her previous turns.
- If there is no room to fit the rectangle on the grid, then the player must *pass*.
- When both players pass in a row, the game ends.
- Players get 1 point for each grid square that has been filled in. The player with the most grid squares filled in is the winner!

When a player shades in, say a 3x4 rectangle, you might encourage him or her to write $3 \times 4 = 12$ inside the rectangle. This gives multiplication practice as well as the fact that 12 points were scored on that turn. Adding up the points for each rectangle at the end of the game gives the player's total score. Some students may figure out that an easy way to get their total points is to count the squares that have not been filled in and then subtract from 144. (The grid is $12 \times 12 = 144$ squares in size.) Or they might use this fact as a check on their addition.

Figure 2 shows an example of how students could keep running totals of their scores after finishing a turn. The accompanying document *Ozobot Blockout Scorecard.pdf* can be printed out for this purpose. It also gives students practice in mentally adding two numbers.

Example	
<i>Multiplication Fact</i>	<i>Running Total</i>
$3 \times 4 = 12$	12
$5 \times 2 = 10$	22
$6 \times 3 = 18$	40
$1 \times 5 = 5$	45

Figure 2