

Don't Break the Bank!

Topics: Triple-digit Addition, Estimation, Probability

Materials: One 6-sided dice, pencil and paper

Players: two or more

Recommended Grades: 2-8

Common Core: MP1, MP3, MP6, MP7, MP8

How close can you get to 999 without going over?

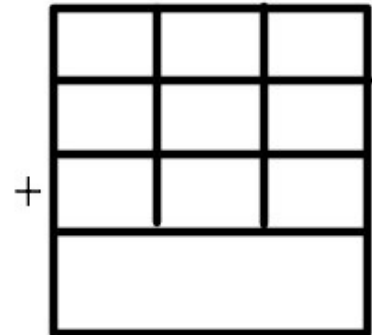
Why We Love Don't Break the Bank

Don't Break the Bank is a Place Value powerhouse. It takes very little time, so it can be used as a math warm up or a nice break in your homeschooling day. It's fun, and students *love* it, even though it involves addition practice. And, while students will usually break the bank (that is, go over 999) their first few games, they'll inevitably start estimating and choosing good strategies for themselves. Should the digits in the hundreds column add up to 9 or 8? How common is it to carry? The deeper thinking is almost inevitable.

How to Play

Each player draws a diagram like this on their paper:

Take turns rolling the die. After each roll, everyone enters the digit rolled in one of the nine spots on the board. Once placed you are not allowed to move the digit. After nine turns, the board becomes an addition problem with three 3-digit numbers to add together. The goal is to get the highest sum **without going over 999**. (See next page for example game.)



Prompts and Questions

- What's a good strategy for this game?
- Where would you put this 5?
- What number would you like to see rolled next? Why?
- Have you already "broken the bank?" How can you tell?

Variation

1. Play the same game except that each person rolls the die and uses their own roll to fill their grid. Each player ends up entering different numbers into their grid.
2. Extend the game to decimals by adding decimal points up and down one column.
3. Make your own goal for the game such as trying to get the largest sum, or trying to get the smallest sum.
4. For advanced play, use one 10-sided dice to play with all 10 digits, 0 through 9.

Tips

1. Remember to be clear with your student(s) that you're placing ones, tens, and hundreds when you place a digit in one of the three columns.
2. You can narrate your own thoughts when placing digits in the grid.
3. Students may not entirely understand the game the first time through, but they should get the hang by the second game.

Example Game

Turn 1: I roll a 4, and place it in my grid. So does the rest of the class.

4		
+		

Turn 2: I roll a 2, and place it in the middle.

4		
	2	
+		

Turns 3 - 8 pass in the same way. Perhaps I have a grid like this:

At this point, I see that I'll be in trouble if anything except a 1 is rolled, since I'll have broken the bank by going over 999.

4		1
2	2	1
+		
3	6	6

Turn 9: A 5 is rolled, and I broke the bank! When I enter the 5 and add up my numbers, I'm over 999, and I'm out this game.

Now it's time to play again!

4	5	1	
2	2	1	
+			
3	6	6	
1	0	3	8

About this Game

Adapted from Math For Love (www.mathforlove.com)

More About this Game

A similar game can also be found in the Family Math book under the name Place the Digits.