Don't Break the Bank!

Topics: Triple-digit Addition, Estimation, Probability
Materials: One 6-sided dice, pencil and paper

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 warmup or in those five minutes before class ends. It's fun, and kids *love* it, even though it involves addition practice. And, while kids 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.

The Launch

Everyone makes a diagram like this on their paper:

Whole Class Game: The teacher (or a student) rolls the die. Whatever number it lands on, everyone enters it in one of the nine spots on the board. 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.)

Small Group Game: Same as whole class game, except that you take turns rolling the die, and everyone ends up entering different numbers into their grid.
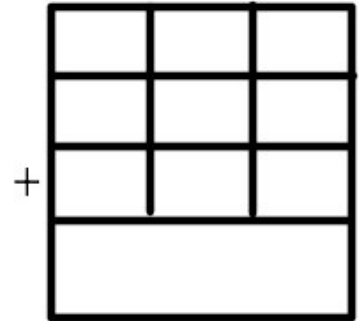
Prompts and Questions

- What's a good strategy for this game?
- Where would you put this 5?
- Have you already "broken the bank?" How can you tell?

Tips for the Classroom

1. When you are playing a game with the full class, let students take turns rolling.
2. You can narrate your own thoughts when placing digits in the grid. Remember to be clear that you are placing ones, tens, and hundreds.
3. Students may not entirely understand the game the first time through, but they should get the hang by the second game.
4. Extend the game to decimals by adding decimal points up and down one column.

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