

Rolling dice

We're going to create a sampling distribution—theoretically!

1. Draw a sampling distribution for rolling one 6-sided die. Make sure to label your axes!!

2. Now imagine you roll two 6-sided dice. Fill in the table of possible sums:

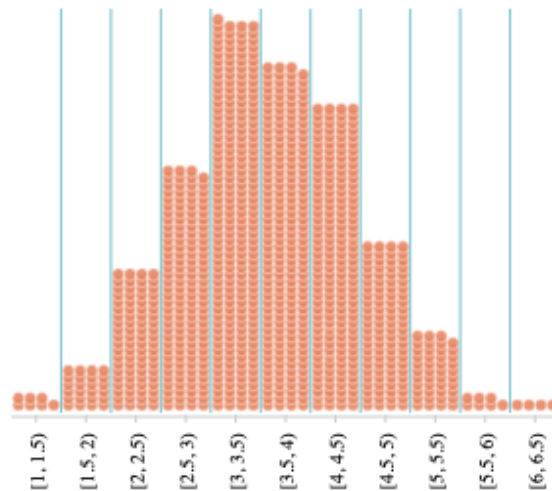
		Black die					
		1	2	3	4	5	6
Red die	1						
	2						
	3						
	4						
	5						
	6						

Now, translate the table above into possible averages to show the sampling distribution.
Make sure to label your axes!!

3. Now, write down what you think will happen when you add one more die (a green one). Hint: take the sums from black + red and imagine adding 1 from the green, 2 from the green, ... to each possible item in the table. You end up with 216 possible samples, but there's a pattern to it, so you can save a bunch of work if you think strategically.

Can you come up with the sampling distribution of sample averages? Make sure to label your axes!!

4. This is what the distribution of four dice looks like:



What do you notice about this distribution?

5. Explain the following statement: "The fastest growing group of samples is those that are roughly representative." Why does this happen, and why is that important?