



Theoretical and Experimental Probability

Explore Activity

Directions: Roll two dice, find the sum, and complete the table. Then, compile the data on the tally chart on the following page. Finally, answer the questions below.

Answers may vary. Possible answers are below.

Sum Game

Trial	Die #1	Die #2	Sum
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			



Sum Game – Tally Chart

Sum	Tally
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

Debriefing Questions:

1. List all possible sum values from the Sum Game:
2. Why did some sums appear more often than others during the Sum Game?
3. For the sum of 7, what possible dice combinations are there?



Class Data

Sum	Theoretical Probability (What SHOULD Happen)	Experimental Probability (What DID Happen)
1	$\frac{0}{36}$	
2	$\frac{1}{36}$	
3	$\frac{2}{36}$	
4	$\frac{3}{36}$	
5	$\frac{4}{36}$	
6	$\frac{5}{36}$	
7	$\frac{6}{36}$	
8	$\frac{5}{36}$	
9	$\frac{4}{36}$	
10	$\frac{3}{36}$	
11	$\frac{2}{36}$	
12	$\frac{1}{36}$	

4. According to the theoretical probability, which sum should occur the most often? How do you know?
5. According to the class data, which sum occurred the most often? How does this compare with the prediction from theoretical probability?

