Creating a Probability Model-Teacher

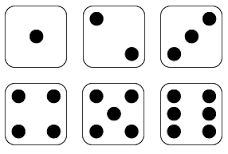
**Goal**: The goal of this activity is for students to grasp the understanding of how to put together a probability model for the rolling of a single die and also the sum of the rolls of two dice.

**Materials:** This worksheet and a pencil. Optional: two pairs of dice

**Directions:** Have students get into groups of two or three and have them work through the worksheet. You can help start the activity by helping them draw the possible numbers they could roll.

Let’s start with one six-sided die.

What are the possible numbers that you could roll? Please draw out all of the options.



What would be the probability of rolling a 1?



What would be the probability of rolling a 2?



What would be the probability of rolling a 3?



What would be the probability of rolling a 4?



What would be the probability of rolling a 5?



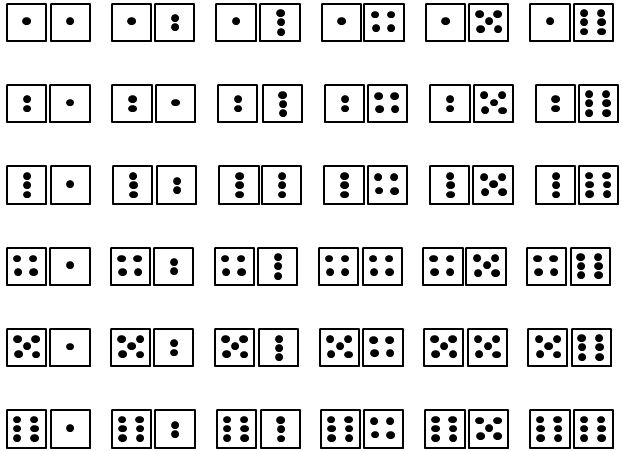
What would be the probability of rolling a 6?



If we put all of these probabilities together, we have created a probability model for rolling one six-sided die.

What about if we roll two dice? How many outcomes do you think there will be? **36**

Draw them below please:



If we found the probabilities of rolling a sum of 2 – 12, we could create another probability model for the probability of the sum of rolling two dice.

|  |  |
| --- | --- |
|  | 1/36 |
|  | 2/36 |
|  | 3/36 |
|  | 4/36 |
|  | 5/36 |
|  | 6/36 |
|  | 5/36 |
|  | 4/36 |
|  | 3/36 |
|  | 2/36 |
|  | 1/36 |

With this probability model we can determine theoretical probabilities.

1. What would be the probability of rolling a sum of 2 or 3?



1. What would be the probability of rolling a sum of 1?

 , there is no way for us to roll a sum of 1. The lowest number that we could roll is a sum of 2.

1. What would be the probability of rolling a sum of 4 or 12?



1. Which number has the greatest probability of appearing? Explain why.

7 has the greatest probability of appearing due to the numerous ways to create 7 with two die.