**Experimental Probability Notes** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Experimental vs. Theoretical: What is the difference?**

Theoretical is what *should* happen (in theory). Experimental is what *actually* happens after an experiment has been held.

|  |  |  |
| --- | --- | --- |
|  | Theoretical Probability | Experimental Probability |
| 1 | If you flip a coin ten times, how many times *should* it land on heads? | If you flip a coin ten times, how many times *does* it land on heads? |
| 2 | If you toss a fair number cube 6 times, how many times *should* you get a 3? | If you toss a fair number cube 6 times, how many times *do* you get a 3? |

**Sally had 10 marbles in a bag. Five were red, three were green, and two were blue. She pulled one marble out at a time and then replaced after recording her results in the table. Find the *experimental* probability of getting each color.**

|  |  |
| --- | --- |
| Red | l l l l l l l l l |
| Green | l l l l l l |
| Blue | l l |

Red Green Blue

Now compare that to the theoretical.

**Pause the video and try these on your own!**

**Then press play and check your answers with a color pen.**

|  |  |
| --- | --- |
| Heart | l l l l l l l l l |
| Spade | l l l l l l |
| Club | l l l l |
| Diamond | l l l l l |

**Joe has a standard set of playing cars. He picked on card, recorded the suit, and placed it back in the deck. He repeated this process several times and recorded the results in the table.**

1. What is the experimental probability of pulling a heart?

2. What is the experimental probability of pulling a spade?

3. Based on Joe’s results, which card is most likely to be picked? How does that compare to the theoretical probability?

4. Based on Joe’s results, which card is least likely to be picked? How does that compare to the theoretical probability?