

Probability experiment

NAMES:

We will be experimenting with 1.) a deck of cards, 2.) a pair of dice, and 3.) a single die and a coin. Dream up a probability question, completing parts  $a$  through  $f$ , for each manipulative set.

Remember that probability can be figured by dividing the number of successes by the total number of possibilities. Some terminology is explained below.

**Experiment:** The act you do such as pulling one card out of the deck or rolling two dice to find their sum.

**Sample space:** This is a listing of all of the possible (equally likely) outcomes for your experiment.

**Theoretical probability:** This is found by thinking about the situation (whatever it may be, e.g. pulling a card out of a deck or rolling two dice) and dividing the number of successes by the total number of possibilities. Use your sample space to count the number of successes and the total number of possibilities.

**Experimental probability:** After doing your experiment several times (called **trials**), count the number of successes and divide that by the number of trials.

**1. Deck of cards:**

a.) Experiment (what will you do):

b.) Sample space (Think about what form your outcomes take. Try to list out every possible outcome. You may abbreviate.):

c.) Probability that you will find (e.g. pulling an Ace out, pulling a red card out, etc):

d.) Theoretical probability (based on which elements of the sample space are successes):

e.) Perform the experiment 50 or so times. Record your data here.

f.) Experimental probability (based on your trials):

**2. Pair of dice:**

a.) Experiment (what will you do):

b.) Sample space (Think about what form your outcomes take. Try to list out every possible outcome. Do not abbreviate.):

c.) Probability that you will find (e.g. rolling a sum of 7, rolling two even numbers, etc):

d.) Theoretical probability (based on which elements of the sample space are successes):

e.) Perform the experiment 50 or so times. Record your data here.

f.) Experimental probability (based on your trials):

**3. A die and a coin:**

a.) Experiment (what will you do):

b.) Sample space (Think about what form your outcomes take. Try to list out every possible outcome. Do not abbreviate.):

c.) Probability that you will find (e.g. getting an even number and a Heads, getting a 4 and a Tails, etc):

d.) Theoretical probability (based on which elements of the sample space are successes):

e.) Perform the experiment 50 or so times. Record your data here.

f.) Experimental probability (based on your trials):