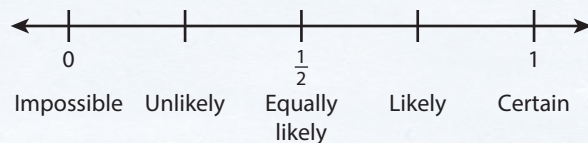# Dear Family,

Your child is learning about probability concepts.

You can use words to describe the mathematical probability that an event will occur. Some words to describe probability are *certain, impossible, more likely than not, as likely as not,* and *less likely than likely.*

You can also use numbers between 0 and 1 to describe a probability. The diagram at the right shows both words and numbers that can be used to describe probability.

0		$\frac{1}{2}$		1
Impossible	Unlikely	Equally likely	Likely	Certain

Consider the following example:

There are 12 marbles in a bag: 3 green, 3 red, and 6 blue. Mike reaches in and picks out 1 marble. Name outcomes that are *impossible, certain, as likely as not, more likely than not,* and *less likely than likely.* Use a number to describe each outcome.

On the next page you will see outcomes that your child might think of that have the given probabilities.

Vocabulary

probability the chance of an event happening.

event in mathematical terms, an experiment.

outcome one of the possible results of an event.

certain the probability of an event when that specific event will definitely happen.

impossible the probability of an event when that specific event will definitely not happen.

NEXT

There are 12 marbles in a bag: 3 green, 3 red, and 6 blue. Mike reaches in and picks out 1 marble. Name outcomes that are *impossible, certain, as likely as not, more likely than not,* and *less likely than likely.* Use a number to describe each outcome.

Start by finding the total number of marbles. There are a total of 12 marbles. Use this to determine the outcomes.

Impossible: picking a yellow marble
There are no yellow marbles in the bag, so the probability of picking a yellow marble is 0.

Certain: picking a green, red, or blue marble
All of the marbles in the bag are either green, red, or blue; so the probability of picking a green, red, or blue marble is 1.

As likely as not: picking a blue marble
Half of the marbles in the bag are blue, so it is as likely as not likely that Mike will pick a blue marble. The probability of picking a blue marble is $\frac{1}{2}$.

More likely than not: picking a green or blue marble
More than half of the marbles are green or blue, so it is more likely than not likely that Mike will choose a marble that is either green or blue. The probability of picking a marble that is either green or blue is between $\frac{1}{2}$ and 1.

Less likely than likely: picking a red marble
Less than half of the marbles are red, so it is less likely than likely that Mike will choose a red marble. The probability of picking a red marble is between 0 and $\frac{1}{2}$.

Answer: You can use words or numbers to describe the probability of an outcome, so you can describe the probability of an event like picking 1 marble of a specific color out of a bag of 12 marbles using either words or a number from 0 and 1.