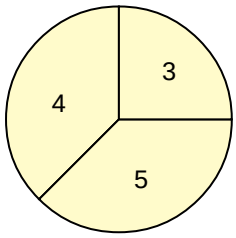
# Frequently Asked Questions

**Q: How can you use an experiment to decide which of two events is more likely?**

**A:** Perform the experiment a number of times and observe which event happens more often.

For example, is it more likely to spin two 3s on this spinner, or a 5 and a 3?




You and a friend might each spin 15 times. You both get 3s $\frac{2}{15}$ of the time. One of you spins 3 and the other spins 5 $\frac{3}{15}$ of the time. The second event seems more likely, but you should probably try more spins since the probabilities are close.

**Trial spins**

| | | | |
|---|---|---|---|
| 4, 5 | 3, 5 | 3, 3 | 5, 4 |
| 5, 3 | 5, 5 | 3, 4 | 3, 5 |
| 4, 5 | 5, 4 | 4, 3 | 4, 5 |
| 4, 5 | 3, 3 | 4, 4 | |

**Q: How do you describe the probability of an event as a percent?**

**A:** Use a fraction to describe the probability of the event.

$$\text{Probability} = \frac{\text{Number of times the event happened}}{\text{Number of times you tried it}}$$

Then calculate an equivalent fraction with a denominator of 100 and rename this as the equivalent percent.

For example, suppose you want to know the probability of rolling a total of 4 or 5 on two dice. You conduct an experiment 20 times and the sum is either 4 or 5 for 6 of those 20 tries. The probability of 4 or 5 is $\frac{6}{20}$.

Rewrite $\frac{6}{20}$ as the equivalent fraction $\frac{30}{100}$.

The probability of rolling 4 or 5 is 30%.

It is useful to use a percent so that you can compare probabilities for events that you tried different numbers of times. For example, if one person's probability was $\frac{6}{20}$ and another's was $\frac{10}{25}$, it's hard to compare, but it's easy to compare 30% $\left(\frac{6}{20}\right)$ to 40% $\left(\frac{10}{25}\right)$.