

# Multi-Colored Dice

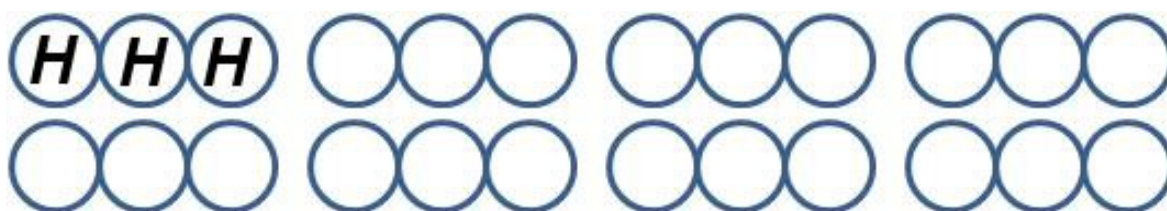
**STEM Sims**

## Lesson 3: Tossing Coins

Many things in life are determined by the simple flip of a coin. In football, a coin toss determines which team receives the football first. In some political races that end in a tied vote, a coin toss is used to select the winner. Can you predict the mathematics behind the simple coin toss?

### Doing the Science

1. Imagine that you flip three fair coins. There are eight possible results ranging from HHH to TTT. Record the rest of the possible coin flip results in the figure below.



### Do You Understand?

1. If you are told that the first coin is a Head, what is the probability that the second coin is also a Head?
2. If you are told that the first coin is a Head, what is the probability that at least one other coin is a Head?
3. What is the probability of the result being *exactly* two heads?
4. What is the probability of the result being *at least* two heads?
5. If you are told that one coin shows a Head, what is the probability that at one other coin shows a head?