



In these activities you will calculate the probability of events. After completing the activities, discuss and/or present your findings to the rest of the class.



Activity 1 [Page 1.3]

1. The *probability* of an event is the number of successes divided by the total number of possible outcomes (assuming the probability of each outcome is equally likely).

For the numbers from 1 to 10, describe the outcomes that satisfy each condition and then give the probabilities.

- a. the number is odd
 - b. the number is prime
 - c. the number is a multiple of 4
 - d. the number is greater than or equal to 3
2. Reset page 1.3. Sometimes the probability of an outcome is calculated experimentally by recording the number of times the outcome occurs in a large number of repetitions of the experiment and dividing the result by the total number of repetitions. This is called the *relative frequency* of that outcome.
Play the game again. This time when either you or Tinman gets 10 points, go to Fast Play. Play until you have drawn 100 cards.
 - a. Calculate the probability of each outcome using the relative frequencies.
 - b. How close is the probability calculated from the relative frequency for the outcome “prime” to the theoretical probability you found in question 1?



Activity 2 [Page 1.5]

1. Decide whether each of the following is true or false. Give an example from the game, using numbers from 1 to 10, to support your reasoning. The probability of an outcome can be
 - a. 1
 - b. 0
 - c. more than 1
 - d. 0.5



Activity 3 [Page 2.2]

1. Select **New Bag**.
 - a. Select **Draw 1** and **Draw 10** several times. When do you think you can estimate the probability of a blue chip in a bag?
 - b. Continue to check your answer to the question above. How close did your estimate come?
 - c. Scroll back through the column for the number of tries in the table and see how different the relative frequency for the 10th draw was from the relative frequency for the 200th draw. Make a conjecture and check it out by selecting more new bags.