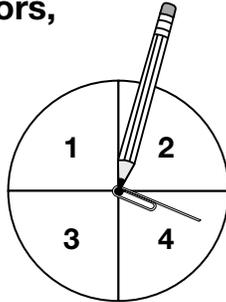


# Conducting Experiments

**Goal** Make predictions and conduct experiments with spinners.

You will need a pencil, a paper clip, and a paper plate or paper, scissors, and something round to trace.

Make a spinner like this one.



1. a) Predict the number of times you will spin the number 2 in 20 spins.

Answers will vary.

- b) Spin 20 times. Keep a tally chart.

2	Not 2
Answers will vary.	

- c) Use a probability word to describe the probability of spinning the number 2.

unlikely

2. a) Predict the number of times you will spin a number less than 4 in 20 spins.

Answers will vary.

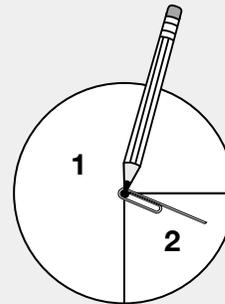
- b) Spin 20 times. Keep a tally chart.

Less than 4	Not less than 4
Answers will vary.	

- c) Use a probability word to describe the probability of spinning a number less than 4. likely

## At-Home Help

The size of a spinner section can be used to predict whether it is **impossible, unlikely, likely, or certain** to spin a particular result.



With this spinner, 1 is likely, 2 is unlikely, 3 is impossible, and a number less than 3 is certain. By spinning many times, the prediction of how likely can be tested. You can keep track of the spins using tally marks. For example, this tally chart shows that there were 15 spins for 1 and 5 spins for 2.

Spin	Tally
1	
2	

# Communicate About Probability

**Goal**

Use math language to describe probability.

Use the Communication Checklist.

Remember the probability words you know.

**impossible    unlikely    likely    certain**

**At-Home Help**
**Communication Checklist**

- Did you explain your thinking?
- Did you use math language?

1. Name 3 events that might or might not happen at home tomorrow. Write a probability word for each event.

Tell why you chose that word. *Answers will vary. For example:*

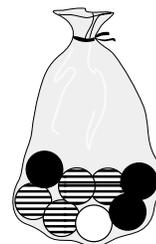
Event	Probability Word	Why you chose that word
A bell will ring.	unlikely	I don't think anyone in the house has a bell, but the doorbell could ring.
We will eat dinner.	certain	We eat dinner every night.
My sister will yell.	likely	My sister yells a lot, but there are days she doesn't.

2. Which probability word do you think tells the probability of picking a white ball? Explain why.

*Unlikely. For example, there is only 1 white ball and there are*

*7 other balls. That means that only 1 out of 8 balls is white,*

*so you are much more likely to pick a ball that is not white.*



# Making Predictions

**Goal** Make predictions, carry out experiments, and compare probabilities.

You will need a die.



### At-Home Help

Rolling a die has 6 possible **outcomes**: 1, 2, 3, 4, 5, 6. Each outcome is equally likely. But some probabilities for rolling a die are not equally likely. For example, rolling a number less than 2 is much less likely than rolling a number greater than 2.

1. You will roll a die 20 times.

Answers will vary. For example:

- a) Predict which is more likely.

- an even number
- an odd number less than 3

Circle your prediction.

- b) Roll the die 20 times. Keep a tally chart of your results.

An even number	An odd number less than 3
Answers will vary.	

- c) Was your prediction correct? Answers will vary. An even number is more likely.

2. You will roll a die 20 times.

Answers will vary. For example:

- a) Predict which is more likely.

- a number less than 2
- a number greater than 4

Circle your prediction.

- b) Roll the die 20 times. Keep a tally chart of your results.

Less than 2	Greater than 4
Answers will vary.	

- c) Was your prediction correct? Answers will vary. A number greater than 4 is more likely.

# Probability Models

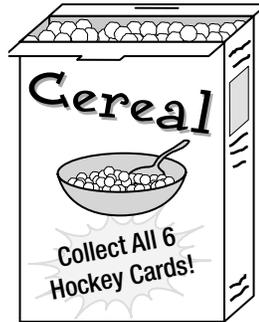
**Goal**

Use a probability model to solve an everyday problem.

You will need a die.

- Use a die. Each number will represent a different hockey card.

Answers will vary.  
Examples are given.



- Predict the number of times you will have to roll before you have all 6 hockey cards (all 6 numbers). 12

- Roll the die. Keep a tally chart.

1	2	3	4	5	6

- Keep rolling until you roll each number at least once.

- How many rolls did you need? 12

- Repeat the experiment.

1	2	3	4	5	6

- How many rolls did you need this time? 25

- Predict the number of rolls you will need if you do this again. 18

Explain your prediction. I think I should pick a number between 12 and 25,  
so I'll pick 18.

**At-Home Help**

Sometimes we use probability models to help answer complicated questions. For example, suppose you want to predict the probability that the first 2 children in a family are both boys. You could use a coin to model the problem. Call heads a "boy" and tails a "girl." Flip the coin twice to see if you get 2 heads. If you do, tally a Yes. If you don't, tally a No.

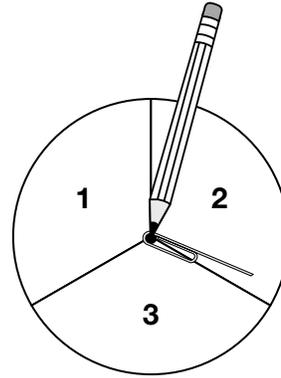
Yes	No

Repeat the experiment 20 times to get a sense of the probability.

# Test Yourself Page 1

Circle the correct answer.

Use this spinner for Questions 1 to 4.



1. Which probability word best describes the probability of spinning a 2?

- A. impossible      C. likely  
**B. unlikely**      D. certain

2. Which probability word best describes the probability of spinning an odd number?

- E. impossible      F. unlikely      **G. likely**      H. certain

3. Which probability word best describes the probability of spinning a number?

- A. impossible      B. unlikely      C. likely      **D. certain**

4. Which probability word best describes the probability of spinning a number greater than 10?

- E. impossible**      F. unlikely      G. likely      H. certain

Think about this die for Questions 5 to 8.

The numbers of dots on the faces are from 1 to 6.



5. Which probability word best describes the probability of rolling a number less than 7?

- A. impossible      B. unlikely      C. likely      **D. certain**

6. Which probability word best describes the probability of rolling a 3?

- E. impossible      **F. unlikely**      G. likely      H. certain

7. Which is more likely than rolling an even number?

- A. rolling the number 3      **C. rolling a number greater than 1**  
 B. rolling the number 1      D. rolling the numbers 4 or 5

# Test Yourself Page 2

Circle the correct answer.

8. Which is less likely than rolling an even number?

E. rolling an odd number

G. rolling a number less than 4

F. rolling a number

H. rolling a number greater than 6

Use this bag of tiles for Questions 9 to 12.

9. Which probability word best describes the probability of drawing a circle?

A. impossible

C. likely

B. unlikely

D. certain

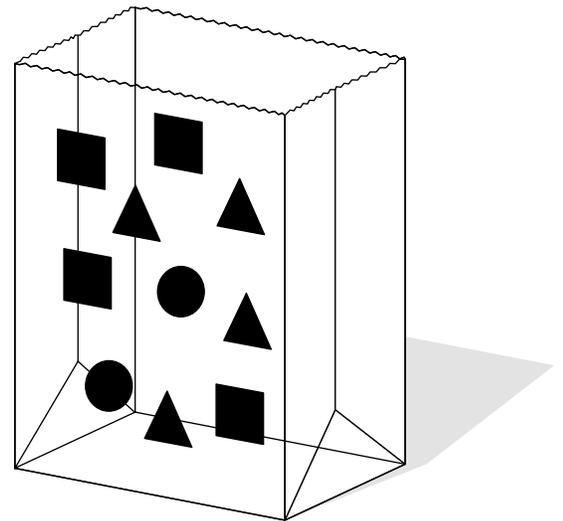
10. Which probability word best describes the probability of drawing a shape?

E. impossible

G. likely

F. unlikely

H. certain



11. Which is the most likely number of squares you would draw in 10 draws?

A. 1

B. 8

C. 5

D. 10

12. Which is the most likely number of circles you would draw in 10 draws?

E. 1

F. 8

G. 5

H. 10