

Outcomes and Events

Lesson 10.1

Key Ideas

Outcomes and Events

- An **experiment** is an activity with varying results.
- The possible results of an experiment are called **outcomes**.
- A collection of one or more outcomes is an **event**.
- The outcomes of a specific event are called **favorable outcomes**.

For example, randomly selecting a marble from a group of marbles is an experiment. Each marble in the group is an outcome. Selecting a green marble from the group is an event.

Possible outcomes



Event: Choosing a green marble

Number of favorable outcomes: 2



EXAMPLE**1****Identifying Outcomes**

You roll the number cube.



a. What are the possible outcomes?

••• The six possible outcomes are rolling a 1, 2, 3, 4, 5, and 6.

b. What are the favorable outcomes of rolling an even number?

even	<i>not</i> even
2, 4, 6	1, 3, 5

••• The favorable outcomes of the event are rolling a 2, 4, and 6.

c. What are the favorable outcomes of rolling a number greater than 5?

greater than 5	<i>not</i> greater than 5
6	1, 2, 3, 4, 5

••• The favorable outcome of the event is rolling a 6.

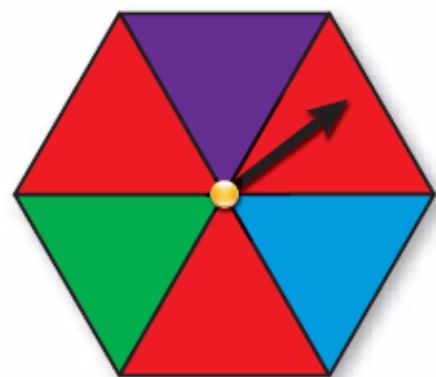


On Your Own

1. You randomly choose a letter from a hat that contains the letters A through K.
 - a. What are the possible outcomes?
A, B, C, D, E, F, G, H, I,
J, K
 - b. What are the favorable outcomes of choosing a vowel?
A, E, I

EXAMPLE**2****Counting Outcomes**

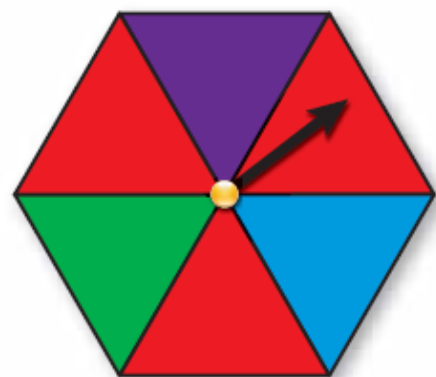
You spin the spinner.



- a. How many possible outcomes are there?
- b. In how many ways can spinning red occur?
- c. In how many ways can spinning *not* purple occur? What are the favorable outcomes of spinning *not* purple?

EXAMPLE**2****Counting Outcomes**

You spin the spinner.



a. How many possible outcomes are there?

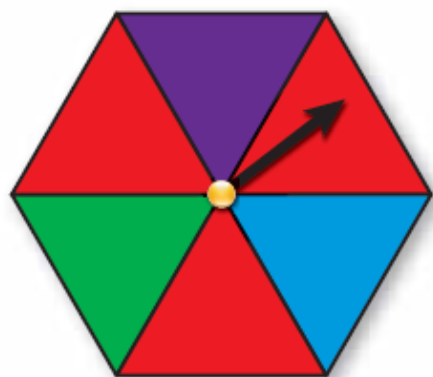
The spinner has 6 sections. So, there are 6 possible outcomes.

b. In how many ways can spinning red occur?

c. In how many ways can spinning *not* purple occur? What are the favorable outcomes of spinning *not* purple?

EXAMPLE**2****Counting Outcomes**

You spin the spinner.



- a. How many possible outcomes are there?

The spinner has 6 sections. So, there are 6 possible outcomes.

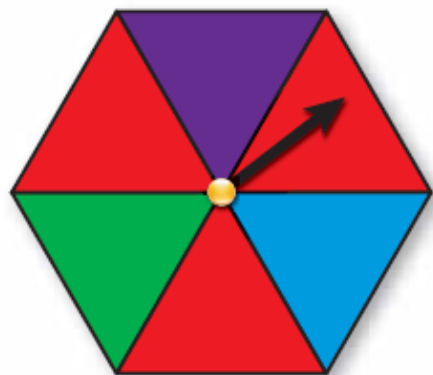
- b. In how many ways can spinning red occur?

The spinner has 3 red sections. So, spinning red can occur in 3 ways.

- c. In how many ways can spinning *not* purple occur? What are the favorable outcomes of spinning *not* purple?

EXAMPLE**2****Counting Outcomes**

You spin the spinner.



- a. How many possible outcomes are there?**

The spinner has 6 sections. So, there are 6 possible outcomes.

- b. In how many ways can spinning red occur?**

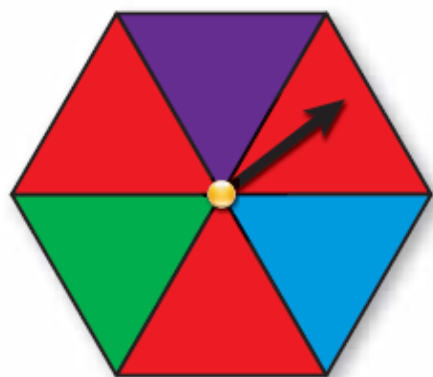
The spinner has 3 red sections. So, spinning red can occur in 3 ways.

- c. In how many ways can spinning *not* purple occur? What are the favorable outcomes of spinning *not* purple?**

The spinner has 5 sections that are *not* purple. So, spinning *not* purple can occur in 5 ways.

EXAMPLE**2****Counting Outcomes**

You spin the spinner.



- a. How many possible outcomes are there?

The spinner has 6 sections. So, there are 6 possible outcomes.

- b. In how many ways can spinning red occur?

The spinner has 3 red sections. So, spinning red can occur in 3 ways.

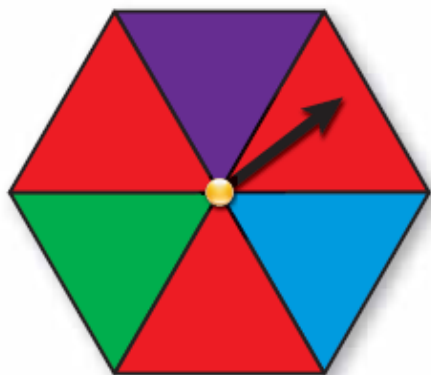
- c. In how many ways can spinning *not* purple occur? What are the favorable outcomes of spinning *not* purple?

The spinner has 5 sections that are *not* purple. So, spinning *not* purple can occur in 5 ways.

purple	<i>not</i> purple
purple	red, red, red, green, blue

EXAMPLE**2****Counting Outcomes**

You spin the spinner.



- a. How many possible outcomes are there?

The spinner has 6 sections. So, there are 6 possible outcomes.

- b. In how many ways can spinning red occur?

The spinner has 3 red sections. So, spinning red can occur in 3 ways.

- c. In how many ways can spinning *not* purple occur? What are the favorable outcomes of spinning *not* purple?

The spinner has 5 sections that are *not* purple. So, spinning *not* purple can occur in 5 ways.

purple	<i>not</i> purple
purple	red, red, red, green, blue

The favorable outcomes of the event are red, red, red, green, and blue.

On Your Own

2. You randomly choose a marble.



a. How many possible outcomes are there? **8 outcomes**

b. In how many ways can choosing blue occur? **2 ways**

c. In how many ways can choosing *not* yellow occur? What are the favorable outcomes of choosing *not* yellow?

5 ways; blue, blue, red, green, purple