Math Warm Up:
*Tape in Graphic Organizer
*Define vocabulary words using glossary

Vocabulary-

Single Events-

Compound Events-

Lesson 11.1 Compound Events Day 1

Objective

TSW understand concept of translations

*understand compound events

*represent compound events using possibility diagram

Common Core State Standards

8G1 Verify experimentally the properties of rotations, reflections, and translations.

8G1 a Lines are taken to lines, and line segments to line segments of the same length.

Mathematical Practices *MP3 Construct arguments MP 4 Model Mathematics MP5 Use tools strategically*

Lesson 11.1 Compound Events Day 1

Use Glossary to write definition of Vocabulary

Vocabulary-

Single Events-

Compound Events-

Lesson 11.1 Compound Events Day 1

Use Glossary to write definition of Vocabulary

Vocabulary-

Single Events- The probability of an event occurring equals the number of ways the event can occur divided by the total number of events possible

compound event Two or more events occurring together or one after another.

Lesson 11.1 Compound Events Day 1

Understand Compound Events.

A compound event consists of two or more **simple events** occurring together or one after another. For example, tossing a coin for heads or rolling a 3 on a six-sided number die are both simple events. But tossing a coin for heads and rolling a 3 on a six-sided number die is a compound event.

Example 1 Identify events as simple or compound.

Tell whether each event is a simple or compound event. State the single event or identify the simple events that form the compound event.

a) Getting a number less than 2 or greater than 4 when spinning the spinner once

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Tell whether each event is a simple or compound event. State the single event or identify the simple events that form the compound event.

a) Getting a number less than 2 or greater than 4 when spinning the spinner once

Solution

This is a simple event. There is one event: getting a number less than 2 or greater than 4 from one spin of the spinner.

Lesson 11.1 Compound Events Day 1

Example 1 **Identify events as simple or compound.**

Tell whether each event is a simple or compound event. State the single event or identify the simple events that form the compound event.

a) Getting a number less than 2 or greater than 4 when spinning the spinner once

b) Getting a number less than 2 or greater than 4 when spinning the spinner two times consecutively

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Example 1 **Identify events as simple or compound.**

Tell whether each event is a simple or compound event. State the single event or identify the simple events that form the compound event.

a) Getting a number less than 2 or greater than 4 when spinning the spinner once

b) Getting a number less than 2 or greater than 4 when spinning the spinner two times consecutively

Solution

This is a compound event. There are two simple events: getting a number less than 2 or greater than 4 one after another.

Lesson 11.1 Compound Events Day 1

Example 1 **Identify events as simple or compound.**

Tell whether each event is a simple or compound event. State the single event or identify the simple events that form the compound event.

a) Getting a number less than 2 or greater than 4 when spinning the spinner once

c) Getting heads when a coin is tossed and getting a 3 when a six-sided number die is rolled

Lesson 11.1 Compound Events Day 1

Example 1 **Identify events as simple or compound.**

Tell whether each event is a simple or compound event. State the single event or identify the simple events that form the compound event.

a) Getting a number less than 2 or greater than 4 when spinning the spinner once

c) Getting heads when a coin is tossed and getting a 3 when a six-sided number die is rolled

Solution

This is a compound event. There are two simple events: getting heads on a coin and a 3 on a six-sided number die.

Guided Practice

Tell whether each outcome is from a simple or compound event. If it is a compound event, identify the simple events that form the compound event.

1. Obtaining two heads when two coins are tossed

2. Winning a football game

3. Getting a number less than 4 or greater than 5 when a fair six-sided number die is rolled

4. Rolling two fair six-sided number dice and obtaining a sum of 10 from the throws

Guided Practice

Tell whether each outcome is from a simple or compound event. If it is a compound event, identify the simple events that form the compound event.

1. Obtaining two heads when two coins are tossed

1. There are two simple events: getting heads from tossing a coin and getting heads from tossing another coin.

Guided Practice

Tell whether each outcome is from a simple or compound event. If it is a compound event, identify the simple events that form the compound event.

1. Obtaining two heads when two coins are tossed

2. Winning a football game

3. Getting a number less than 4 or greater than 5 when a fair six-sided number die is rolled

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Guided Practice

Tell whether each outcome is from a simple or compound event. If it is a compound event, identify the simple events that form the compound event.

1. Obtaining two heads when two coins are tossed

2. Winning a football game Simple event

3. Getting a number less than 4 or greater than 5 when a fair six-sided number die is rolled

4. Rolling two fair six-sided number dice and obtaining a sum of 10 from the throws

Guided Practice

Tell whether each outcome is from a simple or compound event. If it is a compound event, identify the simple events that form the compound event.

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2. Winning a football game

3. Getting a number less than 4 or greater than 5 when a fair six-sided number die is rolled Simple event

4. Rolling two fair six-sided number dice and obtaining a sum of 10 from the throws

Guided Practice

Tell whether each outcome is from a simple or compound event. If it is a compound event, identify the simple events that form the compound event.

1. Obtaining two heads when two coins are tossed

2. Winning a football game

3. Getting a number less than 4 or greater than 5 when a fair six-sided number die is rolled

4. Rolling two fair six-sided number dice and obtaining a sum of 10 from the throws

4 Rolling two fair six-sided number dice and obtaining a sum of 10 from the throws

4 There are two simple events: rolling a six-sided number die and another six-sided number die together to obtain a sum of 10.

Lesson 11.1 Compound Events Day 1

Represent Compound Events.

Suppose you roll a fair six-sided number die and toss a fair coin.

The simple events that form this compound event are rolling a number on the number die and tossing the coin for heads and tails.

There are six possible outcomes when a number die is rolled. The sample space is {1, 2, 3, 4, 5, 6}.

There are two possible outcomes when a coin is tossed. They are {*H*, *T*}, where *H* denotes the outcome Heads, and *T* denotes the outcome Tails.

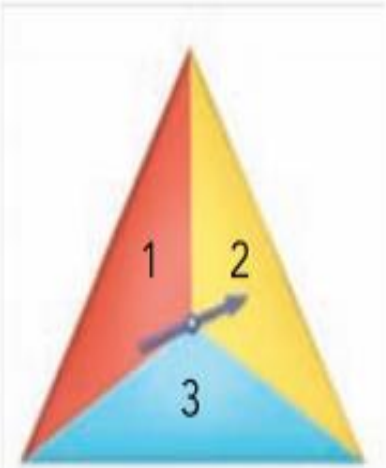
Lesson 11.1 Compound Events Day 1

A two-way grid or a table is a type of **possibility diagram** that can help you visualize all the possible outcomes of a compound event. You can also circle or mark the favorable outcomes.

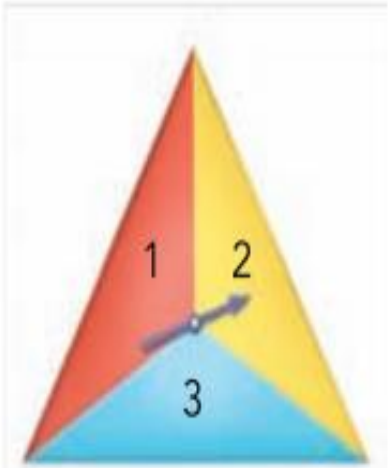
Die												
Coin												
Outcome												

Lesson 11.1 Compound Events Day 1

Another diagram that is used to display the outcomes of a compound event is a table of ordered pairs.



Spinner 1



Spinner 2

Suppose there are two spinners, with each spinner divided into three equally-sized angles at the center.

Lesson 11.1 Compound Events Day 1

The row labels and column labels of the table list the outcomes of each simple event. Each possible outcome is written in the diagram as an ordered pair: (**first event**, **second event**). You can see that there are $3 \cdot 3 = 9$ possible outcomes in the sample space.

Spinner 1

Spinner 2	1	2	3
1			
2			
3			

Lesson 11.1 Compound Events Day 1

The row labels and column labels of the table list the outcomes of each simple event. Each possible outcome is written in the diagram as an ordered pair: (**first event**, **second event**). You can see that there are $3 \cdot 3 = 9$ possible outcomes in the sample space.

Spinner 1

Spinner 2	1	2	3
1	(1, 1)	(2, 1)	(3, 1)
2	(1, 2)	(2, 2)	(3, 2)
3	(1, 3)	(2, 3)	(3, 3)

Lesson 11.1 Compound Events Day 1

Example 2 Represent all possible outcomes of a compound event.

Represent and tell the number of possible outcomes for each compound event described.

a) The results of rolling two fair six-sided number dice are added.

Solution

1st Toss

2nd Toss +	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

There are 36 possible outcomes.

Math Note

You can write the operation of the compound event at the top left cell of the table to indicate that you are finding the sum of the outcomes of two events.

Lesson 11.1 Compound Events Day 1

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Practice 8.1 #1-4 & 6

Practice 11.1

Tell whether each statement is True or False.

1. Selecting the letter A from the word PROBABILITY is a compound event.
2. Selecting the letter B from the word BASEBALL and then from the word ABLE is a simple event.
3. Tossing a fair six-sided number die to get either an even number or a five is a compound event.
4. Umberto has 3 red cards and 4 blue cards. Drawing two red cards in a row, without replacing the first card before drawing the second card, is a compound event.

Tell whether each event is a simple or compound event. If it is a compound event, identify the simple events that form the compound event.

5. Getting a 6 when a fair six-sided number die is rolled.
6. Rolling three fair six-sided number dice and obtaining a sum of 18 from the throws.
7. Getting an eighteen when a fair twenty-sided number die is rolled.

Challenge-

*Solve created equations

"Challenge your brain"

*BuzzMath

*MangaHigh

Lesson Check #1 & 6-can identify and represent compound events

Lesson 11.1 Compound Events Day 1

Ticket Out the Door- Connect, Extend, Challenge

1. How are the ideas and information presented CONNECTED to what you already knew?

2. What new ideas did you get that EXTENDED or pushed your thinking in new directions?

3. What is still CHALLENGING or confusing for you to get your mind around? What questions, wonderings or puzzles do you now have?