LESSON MAKER PRO

# Outcome Matchup Lab

*List compound-event outcomes with care.*

**GRADE 7 · 7.SP.C.8b**

**CCSS.Math.Content.7.SP.C.8b** "Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes")..."

NAME _____ DATE _____

## BUILD THE SAMPLE SPACE

A sample space is the complete list of possible outcomes. For a compound event, keep the actions in order and pair each first choice with every possible second choice. To find an event, select only the outcomes that match its description.

## WORKED EXAMPLE

A student chooses a smoothie base, mango or berry, and then a topping, nuts or seeds. List the sample space.

1. Write each outcome as (base, topping).
2. Pair mango with nuts and seeds.
3. Pair berry with nuts and seeds.

**Answer: {(mango, nuts), (mango, seeds), (berry, nuts), (berry, seeds)}**

## PRACTICE 6 problems

**1** A fair coin is flipped and a number cube is rolled. List the outcomes in the event "tails and an even number."

**ANSWER** _____

**2** Maya chooses one pencil color, black, green, or pink, and one eraser shape, star or heart. Write the complete sample space.

**ANSWER** _____

**3** Two number cubes are rolled. The first number is written first. List the outcomes in the event "the sum is 5."

**ANSWER** _____

**4** A coin is flipped, then a spinner lands on yellow, blue, or red. List the outcomes in the event "heads or blue."

**ANSWER** _____

**5** A code uses one letter from A, B, or C, followed by one digit from 1 or 2. List the outcomes in the event "the code ends in 2."

**ANSWER** _____

**6** You choose a snack, apple or pretzels, and a movie type, funny or mystery. How many outcomes are in the sample space? Then list only the outcomes with pretzels.

**ANSWER** _____

## APPLY IT Show your work

**1** The table shows every available banner design for the art club. Each design has one background and one frame, and no other combinations are available. The club will display designs with a city background or a gold frame. List all outcomes in this event.

**AVAILABLE BANNER DESIGNS**

| Background | Frame |
|---|---|
| forest | silver |
| forest | gold |
| city | silver |
| city | gold |
| beach | silver |
| beach | gold |

**ANSWER** _____

**2** For a school podcast cover, Jordan chooses one topic, music, sports, or games, and one style, bold or simple. Write the complete sample space. Then list the outcomes in the event "games or simple."

WORK SPACE

**ANSWER** _____

## CHALLENGE One step up

At a club fair, a student chooses a club, strategy or sports, a meeting day, Tuesday, Thursday, or Friday, and a badge color, orange or teal. Make a complete organized list of the sample space. Then list the outcomes in the event "Thursday or teal" and explain why your event has that number of outcomes.

WORK SPACE AND ANSWER

**ANSWER KEY**

# Outcome Matchup Lab

**GRADE 7 · 7.SP.C.8b**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | A fair coin is flipped and a number cube is rolled. List the outcomes in the event "tails and an even number." | **{(T, 2), (T, 4), (T, 6)}** |
| 2 | Maya chooses one pencil color, black, green, or pink, and one eraser shape, star or heart. Write the complete sample space. | **{(black, star), (black, heart), (green, star), (green, heart), (pink, star), (pink, heart)}** |
| 3 | Two number cubes are rolled. The first number is written first. List the outcomes in the event "the sum is 5." | **{(1, 4), (2, 3), (3, 2), (4, 1)}** |
| 4 | A coin is flipped, then a spinner lands on yellow, blue, or red. List the outcomes in the event "heads or blue." | **{(H, yellow), (H, blue), (H, red), (T, blue)}** |
| 5 | A code uses one letter from A, B, or C, followed by one digit from 1 or 2. List the outcomes in the event "the code ends in 2." | **{(A, 2), (B, 2), (C, 2)}** |
| 6 | You choose a snack, apple or pretzels, and a movie type, funny or mystery. How many outcomes are in the sample space? Then list only the outcomes with pretzels. | **4 outcomes; {(pretzels, funny), (pretzels, mystery)}** |

## PART 2 · APPLY IT

1. **{(forest, gold), (city, silver), (city, gold), (beach, gold)}** Select every row with city in the Background column and every row with gold in the Frame column. Include city, gold only once because it matches both parts of the event.
2. **Sample space: {(music, bold), (music, simple), (sports, bold), (sports, simple), (games, bold), (games, simple)}; Event: {(music, simple), (sports, simple), (games, bold), (games, simple)}** Pair each of the three topics with both styles to make six outcomes. For "or," include every simple cover and both games covers, without repeating (games, simple).

## CHALLENGE

**Sample space: {(strategy, Tuesday, orange), (strategy, Tuesday, teal), (strategy, Thursday, orange), (strategy, Thursday, teal), (strategy, Friday, orange), (strategy, Friday, teal), (sports, Tuesday, orange), (sports, Tuesday, teal), (sports, Thursday, orange), (sports, Thursday, teal), (sports, Friday, orange), (sports, Friday, teal)}. Event: {(strategy, Tuesday, teal), (strategy, Thursday, orange), (strategy, Thursday, teal), (strategy, Friday, teal), (sports, Tuesday, teal), (sports, Thursday, orange), (sports, Thursday, teal), (sports, Friday, teal)}. There are 8 outcomes because 4 have Thursday, 6 have teal, and 2 outcomes have both, so 4 + 6 - 2 = 8.**

Accept outcomes in any listing order if each ordered pair or triple keeps the stated action order. For events using "or," accept the inclusive union, including outcomes that meet both conditions exactly once.