LESSON MAKER PRO

Outcome Hunt

List every possible result, then find the ones that match an event.

GRADE 6 · 6.D.2.2

6.D.2.2 "Determine the sample space for a given experiment and determine which members of the sample space are related to certain events. Sample space may be determined by the use of tree diagrams, tables, or pictorial representations."

NAME _____ DATE _____

THE BIG IDEA

A sample space lists every possible outcome of an experiment. Use a table to pair each result from one choice with each result from another. An event contains only the outcomes that meet its rule.

WORKED EXAMPLE

A spinner shows 11, 12, or 13. Then you flip a coin. List the sample space and the outcomes with an even spin.

SPIN AND COIN FLIP

Spin	H	T
11	(11, H)	(11, T)
12	(12, H)	(12, T)
13	(13, H)	(13, T)

1. Read every pair in the table to get the sample space.
2. The only even spin is 12.
3. Select both outcomes in the 12 row.

Answer: Sample space: {(11, H), (11, T), (12, H), (12, T), (13, H), (13, T)}. Even-spin event: {(12, H), (12, T)}.

PRACTICE 4 problems

1 Choose a badge color (R or B) and a sticker shape (S or H). List the sample space and the outcomes with an R badge.

ANSWER _____

2 Wheel A shows A, B, or C. Wheel B shows X or Y. List the sample space and the outcomes with Y on wheel B.

ANSWER _____

3 Choose a number (4, 5, or 6) and a color (R or B). List the sample space and the outcomes with an even number.

ANSWER _____

4 Flip three coins in order. List the sample space and the outcomes with exactly two heads.

ANSWER _____

APPLY IT Show your work

1 A game gives you one pet and one power from the table. List the sample space and the outcomes with Frog or Fly.

GAME CHOICES

Pet / power	Fly	Swim	Glow
Cat			
Dog			
Frog			

ANSWER _____

2 At a school fair, choose a drink (water or juice) and a treat (pretzel, apple, or cookie). List the sample space and the outcomes with juice or apple.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A mystery box picks a color (R or B), a shape (C or S), and a number (4 or 5). List the sample space and the outcomes with R and either S or 5. Explain why your list is complete.

WORK SPACE AND ANSWER

ANSWER KEY

Outcome Hunt

GRADE 6 · 6.D.2.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Choose a badge color (R or B) and a sticker shape (S or H). List the sample space and the outcomes with an R badge.	**Sample space: {(R, S), (R, H), (B, S), (B, H)}. R badge: {(R, S), (R, H)}.**
2	Wheel A shows A, B, or C. Wheel B shows X or Y. List the sample space and the outcomes with Y on wheel B.	**Sample space: {(A, X), (A, Y), (B, X), (B, Y), (C, X), (C, Y)}. Wheel B shows Y: {(A, Y), (B, Y), (C, Y)}.**
3	Choose a number (4, 5, or 6) and a color (R or B). List the sample space and the outcomes with an even number.	**Sample space: {(4, R), (4, B), (5, R), (5, B), (6, R), (6, B)}. Even number: {(4, R), (4, B), (6, R), (6, B)}.**
4	Flip three coins in order. List the sample space and the outcomes with exactly two heads.	**Sample space: {HHH, HHT, HTH, HTT, THH, THT, TTH, TTT}. Exactly two heads: {HHT, HTH, THH}.**

PART 2 · APPLY IT

1. **Sample space: {(Cat, Fly), (Cat, Swim), (Cat, Glow), (Dog, Fly), (Dog, Swim), (Dog, Glow), (Frog, Fly), (Frog, Swim), (Frog, Glow)}. Frog or Fly: {(Cat, Fly), (Dog, Fly), (Frog, Fly), (Frog, Swim), (Frog, Glow)}.** Pair each pet with each power to get 9 outcomes. Select the Frog row and the Fly column, counting (Frog, Fly) only once.
2. **Sample space: {(water, pretzel), (water, apple), (water, cookie), (juice, pretzel), (juice, apple), (juice, cookie)}. Juice or apple: {(water, apple), (juice, pretzel), (juice, apple), (juice, cookie)}.** Pair each drink with each treat to get 6 outcomes. Include all 3 juice outcomes and (water, apple).

CHALLENGE

Sample space: {(R, C, 4), (R, C, 5), (R, S, 4), (R, S, 5), (B, C, 4), (B, C, 5), (B, S, 4), (B, S, 5)}. R and either S or 5: {(R, C, 5), (R, S, 4), (R, S, 5)}. There are 2 × 2 × 2 = 8 possible outcomes, and all 8 are listed.

Accept outcomes in any order. For the challenge, accept any explanation that shows all eight color, shape, and number combinations are included.