LESSON MAKER PRO

Outcome Paths

List every possible result.

GRADE 7 · TEKS 7.6.A

7.6.A "represent sample spaces for simple and compound events using lists and tree diagrams;"

NAME _____ DATE _____

BUILD THE SAMPLE SPACE

A sample space shows every possible outcome. Use a list of ordered pairs or a tree diagram, with one branch for each choice at each step.

WORKED EXAMPLE

A game profile uses one icon from {star, moon, sun, cloud} and one border from {solid, dotted}. Represent the sample space.

1. Start with star and pair it with each border.
2. Repeat for moon, sun, and cloud.
3. Check that every icon appears with every border.

Answer: {star-solid, star-dotted, moon-solid, moon-dotted, sun-solid, sun-dotted, cloud-solid, cloud-dotted}

PRACTICE 5 problems

1 Flip a coin and choose apple or grape juice. List the sample space.

ANSWER _____

2 A spinner can land on A, B, or C. Then you flip a coin. Write a tree diagram using arrows.

ANSWER _____

3 Roll a die labeled 5, 6, or 7, then flip a coin. List the sample space.

ANSWER _____

4 Choose a backpack color from {red, blue, green} and a zipper color from {black, white}. List the sample space.

ANSWER _____

5 A code uses one letter from {P, Q, R} followed by one symbol from {! , ?, #}. List the sample space.

ANSWER _____

APPLY IT Show your work

1 For an esports club poster, Dev chooses a game label from {Rocket, Pixel, Quest} and a background from {neon, dark}. Make a tree diagram and list all possible posters.

WORK SPACE

ANSWER _____

2 A skatepark pass has a color from {teal, orange, black} and a day from {Fri, Sat, Sun}. List the sample space.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A game character uses an animal from {fox, owl, bear}, a color from {red, blue, green, gold}, and a move from {jump, run}. Describe a three-stage tree diagram and state how many outcomes it has. Explain how you know.

WORK SPACE AND ANSWER

ANSWER KEY

Outcome Paths

GRADE 7 · TEKS 7.6.A

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Flip a coin and choose apple or grape juice. List the sample space.	**{H-apple, H-grape, T-apple, T-grape}**
2	A spinner can land on A, B, or C. Then you flip a coin. Write a tree diagram using arrows.	**A -> H, T; B -> H, T; C -> H, T**
3	Roll a die labeled 5, 6, or 7, then flip a coin. List the sample space.	**{5-H, 5-T, 6-H, 6-T, 7-H, 7-T}**
4	Choose a backpack color from {red, blue, green} and a zipper color from {black, white}. List the sample space.	**{red-black, red-white, blue-black, blue-white, green-black, green-white}**
5	A code uses one letter from {P, Q, R} followed by one symbol from {! , ?, #}. List the sample space.	**{P!, P?, P#, Q!, Q?, Q#, R!, R?, R#}**

PART 2 · APPLY IT

1. **{Rocket-neon, Rocket-dark, Pixel-neon, Pixel-dark, Quest-neon, Quest-dark}** Tree: Rocket -> neon, dark; Pixel -> neon, dark; Quest -> neon, dark. Branch from each game label to both backgrounds. The six leaves of the tree are the possible posters.
2. **{teal-Fri, teal-Sat, teal-Sun, orange-Fri, orange-Sat, orange-Sun, black-Fri, black-Sat, black-Sun}** Pair each pass color with every day. This gives nine different passes.

CHALLENGE

24 outcomes.

Accept any order for sample-space outcomes and any clear tree diagram with the same branches. Accept commas, ordered pairs, or hyphens when the choices remain matched in the correct order.