NAME _____ DATE _____ PERIOD _____

13-1 Study Guide and Intervention

Representing Sample Spaces

Represent a Sample Space The **sample space** of an experiment is the set of all possible outcomes. A sample space can be found using an organized list, table, or tree diagram.

Example **Maurice packs suits, shirts, and ties that can be mixed and matched. Using the packing list at the right, draw a tree diagram to represent the sample space for business suit combinations.**

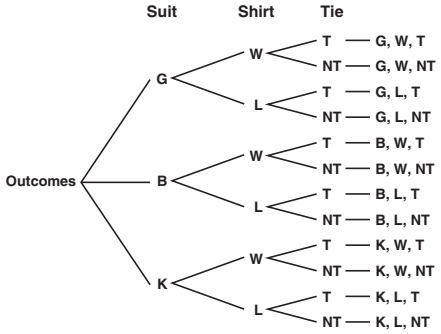
Maurice's Packing List

1. Suits: Gray, black, khaki
2. Shirts: White, light blue
3. Ties: Striped (But optional)

The sample space is the result of three stages:

- Suit color (G, B, or K)
- Shirt color (W or L)
- Tie (T or NT)

Draw a tree diagram with three stages.



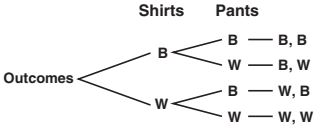
Exercises

Represent the sample space for each experiment by making an organized list, a table, and a tree diagram.

1. The baseball team can wear blue or white shirts with blue or white pants.

BB, BW, WB, WW

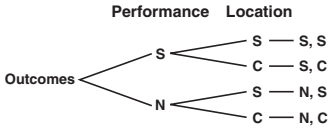
Outcomes	Blue pants	White pants
Blue Shirts	B, B	B, W
White Shirts	W, B	W, W



2. The dance club is going to see either *Sleeping Beauty* or *The Nutcracker* at either Symphony Hall or The Center for the Arts.

SS, SC, NS, NC

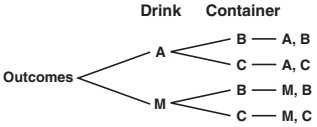
Outcomes	Symphony Hall	Center for Arts
Sleeping Beauty	S, S	S, C
Nutcracker	N, S	N, C



3. Mikey's baby sister can drink either apple juice or milk from a bottle or a toddler cup.

AB, AT, MB, MT

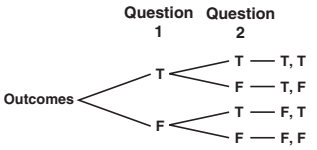
Outcomes	Bottle	Cup
Apple juice	A, B	A, C
Milk	M, B	M, C



4. The first part of the test consisted of two true-or-false questions.

TT, TF, FT, FF

Outcomes	True	False
True	T, T	T, F
False	F, T	F, F



Lesson 13-1

NAME _____ DATE _____ PERIOD _____

13-1 Study Guide and Intervention *(continued)*

Representing Sample Spaces

Fundamental Counting Principle The number of all possible outcomes for an experiment can be found by multiplying the number of possible outcomes from each stage or event.

Example **The pattern for a certain license plate is 3 letters followed by 3 numbers. The letter "O" is not used as any of the letters and the number "0" is not used as any of the numbers. Any other letter or number can be used multiple times. How many license plates can be created with this pattern?**

Use the Fundamental Counting Principle.

1st Space		2nd Space		3rd Space		4th Space		5th Space		6th Space		Possible Outcomes
25	×	25	×	25	×	9	×	9	×	9	=	11,390,625

So 11,390,625 license plates can be created with this pattern.

Exercises

Find the number of possible outcomes for each situation.

1. A room is decorated with one choice from each category.

Bedroom Décor	Number of Choices
Paint color	8
Comforter set	6
Sheet set	8
Throw rug	5
Lamp	3
Wall hanging	5

28,800

2. A lunch at Lincoln High School contains one choice from each category.

Cafeteria Meal	Number of Choices
Main dish	3
Side dish	4
Vegetable	2
Salad	2
Salad Dressing	3
Dessert	2
Drink	3

864

3. In a catalog of outdoor patio plans, there are 4 types of stone, 3 types of edgers, 5 dining sets and 6 grills. Carl plans to order one item from each category.

360

4. The drama club held tryouts for 6 roles in a one-act play. Five people auditioned for lead female, 3 for lead male, 8 for the best friend, 4 for the mom, 2 for the dad, and 3 for the crazy aunt.

2880