

Data Detectives

Decide whether a situation can give different data values.

6.13.B “distinguish between situations that yield data with and without variability.”

NAME _____

DATE _____

DATA VARIES

Choose VARIES when the data values can be different for different people, objects, or events.

The eye colors of eleven authors.

DATA STAYS THE SAME

Choose SAME when every measurement or count must give the same value.

Solve 3×4 five times.

1 SORT _____ 8 items

Read each situation and circle VARIES or SAME.

- | | | |
|---|------------------------------|----------------------------|
| 1. The arm spans of ten basketball players. | ☐ VARIES | ☐ SAME |
| 2. The temperatures of eight cups of soup after 10 minutes. | ☐ VARIES | ☐ SAME |
| 3. The months shown in a year on five calendars. | ☐ VARIES | ☐ SAME |
| 4. The distance each of 12 families travels to school. | ☐ VARIES | ☐ SAME |
| 5. The angles in each of seven rectangles. | ☐ VARIES | ☐ SAME |
| 6. The cents in a dollar using three coin combinations. | ☐ VARIES | ☐ SAME |
| 7. The masses of backpacks in one classroom. | ☐ VARIES | ☐ SAME |
| 8. The vowels in the word “mountain” counted three times. | ☐ VARIES | ☐ SAME |

2

PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ HOW I KNEW _____

ITEM # _____ HOW I KNEW _____

3

MAKE YOUR OWN

One of each

Write one new situation for VARIES and one for SAME.

VARIES _____

SAME _____

CHALLENGE

Write a situation that might seem to give the same data but actually can vary. Label it VARIES and explain why.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	The arm spans of ten basketball players.	VARIES	Different players can have different arm spans.
2	The temperatures of eight cups of soup after 10 minutes.	VARIES	Different cups of soup can have different temperatures.
3	The months shown in a year on five calendars.	SAME	Each year has 12 months.
4	The distance each of 12 families travels to school.	VARIES	Families can live different distances from school.
5	The angles in each of seven rectangles.	SAME	Every rectangle has four angles.
6	The cents in a dollar using three coin combinations.	SAME	One dollar always equals 100 cents.
7	The masses of backpacks in one classroom.	VARIES	Backpacks can have different masses.
8	The vowels in the word "mountain" counted three times.	SAME	The word has the same vowels each time it is counted.

PART 2 • PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 • MAKE YOUR OWN (SAMPLE ANSWERS)

- **VARIES:** The shoe sizes of 15 students in the band.
- **SAME:** The number of letters in the word "rainbow" checked by six students.

Challenge: Measure the masses of six apples. Apples may look alike, but they can have different masses.

Accept any explanation that names the deciding feature from the rule box for the chosen item. Accept equivalent explanations that identify whether values can differ or must remain fixed. For Part 2, students may choose any two items and should correctly name the category and support it with the situation.