Spot the Share

Compare yes answers in two clubs

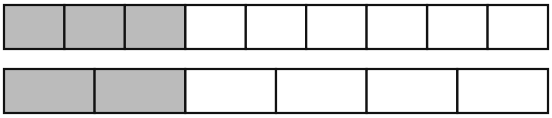
8A.DSP.C.39 "Analyze the possible association between two categorical variables. a. Summarize categorical data for two categories in two-way frequency tables and represent using segmented bar graphs. b..."

NAME _____ DATE _____

SAME SHARE

The shaded part takes up the same share of each bar. In this sample, the club and the yes answer show no association.

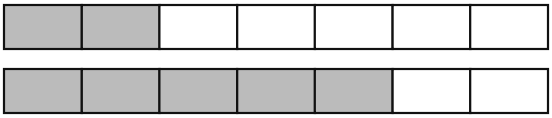
Top: 3/9 shaded. Bottom: 2/6 shaded. Both shares equal 1/3.



DIFFERENT SHARES

The shaded part takes up a different share of each bar. This suggests a possible association between the club and the yes answer.

Top: 2/7 shaded. Bottom: 5/7 shaded. The shares differ.



1 SORT

8 items

Each pair shows the art club on top and the coding club below, with each part standing for one student and shading meaning yes: circle SAME or DIFFERENT for each figure, then choose two figures and explain how you knew.

1.

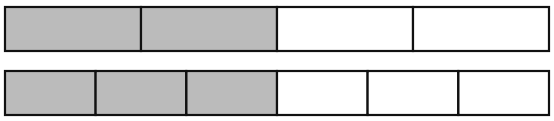


Figure 1

SAME DIFFERENT

2.

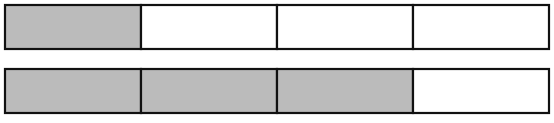


Figure 2

SAME DIFFERENT

3.

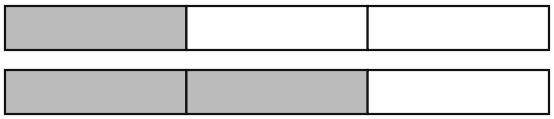


Figure 3

SAME DIFFERENT

4.

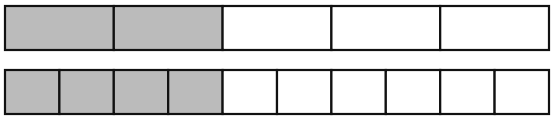


Figure 4

SAME DIFFERENT

5.

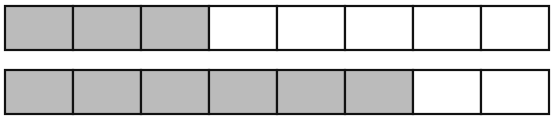


Figure 5

SAME DIFFERENT

6.

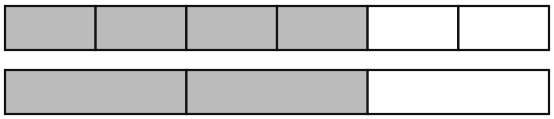


Figure 6

SAME DIFFERENT

7.

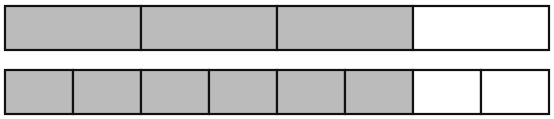


Figure 7

SAME DIFFERENT

8.

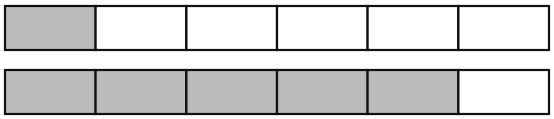


Figure 8

SAME DIFFERENT

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

Draw one new pair of bars with the SAME shaded share and one with DIFFERENT shaded shares; label the shaded fraction in each bar.

SAME

DIFFERENT

CHALLENGE

For Figure 2, find each club's percent of yes answers, tell how many percentage points apart they are, and explain what that suggests.

ANSWER KEY # Spot the Share

GRADE 8 · 8A.DSP.C.39

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (fractionbars)	**SAME**	Both clubs have a yes share of 1/2.
2	Figure 2 (fractionbars)	**DIFFERENT**	The yes shares are 1/4 and 3/4.
3	Figure 3 (fractionbars)	**DIFFERENT**	The yes shares are 1/3 and 2/3.
4	Figure 4 (fractionbars)	**SAME**	Both clubs have a yes share of 2/5.
5	Figure 5 (fractionbars)	**DIFFERENT**	The yes shares are 3/8 and 6/8.
6	Figure 6 (fractionbars)	**SAME**	Both clubs have a yes share of 2/3.
7	Figure 7 (fractionbars)	**SAME**	Both clubs have a yes share of 3/4.
8	Figure 8 (fractionbars)	**DIFFERENT**	The yes shares are 1/6 and 5/6.

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)

- **SAME**: Draw a top bar with 1/5 shaded and a bottom bar with 2/10 shaded.
- **DIFFERENT**: Draw a top bar with 1/8 shaded and a bottom bar with 5/8 shaded.

Challenge: The art club has 25% yes answers, and the coding club has 75%. They are 50 percentage points apart, which suggests a possible association between club and answer.

The shaded fraction in each bar is a conditional relative frequency: yes answers out of that club's students. For Part 2, accept explanations that compare the two shaded fractions, including equivalent fractions.