Spot the Link

Sort possible associations in categorical data.

A1P.DSP.D.35.c "Identify possible associations and trends in categorical data."

NAME _____ DATE _____

POSSIBLE ASSOCIATION	NO APPARENT ASSOCIATION
The outcome occurs at different rates in the two groups. This suggests an association, but it does not show that one thing causes the other. Of 20 art club members, 15 prefer tea. Of 20 nonmembers, 5 prefer tea.	The outcome occurs at the same rate in both groups. Compare rates, not just the number of people. Of 20 cat owners, 8 choose soup. Of 20 students without a cat, 8 choose soup.

1 SORT

8 items

Circle LINK or NONE for each item, then pick two items and explain your choices by comparing the group rates.

1.	Of 20 bus riders, 16 packed lunch. Of 20 car riders, 4 packed lunch.	LINK	NONE
2.	Of 20 soccer players, 12 use a planner. Of 20 nonplayers, 12 use a planner.	LINK	NONE
3.	Of 30 students with a pet, 9 prefer history. Of 10 students without a pet, 3 prefer history.	LINK	NONE
4.	Of 30 robotics club members, 24 chose a science elective. Of 10 nonmembers, 2 chose a science elective.	LINK	NONE
5.	Of 10 chess players, 7 drink milk. Of 30 nonplayers, 21 drink milk.	LINK	NONE
6.	Of 20 students who take dance classes, 15 attend school games. Of 20 who do not, 5 attend school games.	LINK	NONE
7.	Of 10 students who wear glasses, 8 prefer digital notes. Of 30 who do not, 6 prefer digital notes.	LINK	NONE
8.	Of 30 museum visitors, 18 like board games. Of 10 students who did not visit, 6 like board games.	LINK	NONE

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 LINK example and one new NONE example using two groups and the same outcome; give the counts for both groups.

LINK _____

NONE _____

CHALLENGE

Create two groups of different sizes with the same number of students choosing an outcome, but with a LINK; explain using percentages.

ANSWER KEY # Spot the Link

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Of 20 bus riders, 16 packed lunch. Of 20 car riders, 4 packed lunch.	**LINK**	The rates are 80% and 20%.
2	Of 20 soccer players, 12 use a planner. Of 20 nonplayers, 12 use a planner.	**NONE**	Both rates are 60%.
3	Of 30 students with a pet, 9 prefer history. Of 10 students without a pet, 3 prefer history.	**NONE**	Both rates are 30%, despite the different counts.
4	Of 30 robotics club members, 24 chose a science elective. Of 10 nonmembers, 2 chose a science elective.	**LINK**	The rates are 80% and 20%.
5	Of 10 chess players, 7 drink milk. Of 30 nonplayers, 21 drink milk.	**NONE**	Both rates are 70%, despite the different counts.
6	Of 20 students who take dance classes, 15 attend school games. Of 20 who do not, 5 attend school games.	**LINK**	The rates are 75% and 25%.
7	Of 10 students who wear glasses, 8 prefer digital notes. Of 30 who do not, 6 prefer digital notes.	**LINK**	The rates are 80% and 20%.
8	Of 30 museum visitors, 18 like board games. Of 10 students who did not visit, 6 like board games.	**NONE**	Both rates are 60%.

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)

- **LINK**: Of 20 students who play an instrument, 14 prefer morning study. Of 20 who do not, 6 prefer morning study.
- **NONE**: Of 10 students who cook, 4 choose a window seat. Of 20 who do not cook, 8 choose a window seat.

Challenge: Of 10 students who garden, 8 favor apples. Of 20 students who do not garden, 8 favor apples. The rates are 80% and 40%, so there is a possible association.

Students should compare each outcome count with its group size. Different rates suggest an association, not a cause.