LESSON MAKER PRO

Survey Patterns

Count, compare, and interpret two-way tables.

GRADE 8 · 8.SP.4a

8.SP.4a "Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table..."

NAME _____ DATE _____

TWO CATEGORIES, ONE TABLE

Count each person once in the cell where their two categories meet. Add across rows and down columns for totals. To compare groups fairly, divide by the total for each group.

WORKED EXAMPLE

What fraction of students who bring lunch play sports?

LUNCH AND SPORTS SURVEY

	Plays sports	Does not play sports	Total
Brings lunch	7	13	20
Buys lunch	17	23	40

1. Find the Brings lunch row.
2. Use 7 who play sports and the row total of 20.
3. Divide: 7/20 = 35%.

Answer: 7/20, or 35%

PRACTICE 4 problems

1 Of 19 students who own a pet, 8 visit the library weekly. How many pet owners do not visit weekly?

ANSWER _____

2 Of 32 students, 14 bike to school. Of those who bike, 9 pack lunch. How many bike but do not pack lunch?

ANSWER _____

3 Of 25 students who play games, 15 also play an instrument. What fraction of game players also play an instrument?

ANSWER _____

4 Of 18 skaters, 12 wear a helmet. Of 30 nonskaters, 9 wear a helmet. Give each group's helmet rate. Which rate is higher?

ANSWER _____

APPLY IT Show your work

1 Students were asked about team sports and a messaging app. Complete every blank in the table.

SPORTS AND APP SURVEY

	Uses app	Does not use app	Total
Plays team sports	16	___	28
Does not play team sports	___	10	22
Total	___	___	50

ANSWER _____

2 Students were asked about playlists and study timers. What fraction of each playlist group uses a timer? Which group has the higher rate?

PLAYLIST AND TIMER SURVEY

	Has playlist	No playlist
Uses study timer	18	8
Does not use study timer	12	8

ANSWER _____

CHALLENGE One step up

A student says, "Twice as many nonmembers post videos, so nonmembers are more likely to post." Use the rate for each group to check the claim.

DANCE CLUB AND VIDEO POSTS

	Posts videos	Does not post videos
In dance club	9	6
Not in dance club	18	27

WORK SPACE AND ANSWER

ANSWER KEY

Survey Patterns

GRADE 8 · 8.SP.4a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Of 19 students who own a pet, 8 visit the library weekly. How many pet owners do not visit weekly?	**11 students**
2	Of 32 students, 14 bike to school. Of those who bike, 9 pack lunch. How many bike but do not pack lunch?	**5 students**
3	Of 25 students who play games, 15 also play an instrument. What fraction of game players also play an instrument?	**3/5**
4	Of 18 skaters, 12 wear a helmet. Of 30 nonskaters, 9 wear a helmet. Give each group's helmet rate. Which rate is higher?	**Skaters: 2/3. Nonskaters: 3/10. Skaters have the higher rate.**

PART 2 · APPLY IT

1. **Missing entries by row: 12; 12; 28, 22.** Subtract within each row to find 28 - 16 = 12 and 22 - 10 = 12. Add down the columns to get 28 app users and 22 nonusers.
2. **Has playlist: 18/30 = 3/5. No playlist: 8/16 = 1/2. The playlist group has the higher rate.** Add each column to find the playlist group totals. Divide the number using a timer by its column total, then compare the fractions.

CHALLENGE

The claim is incorrect. Club members: 9/15 = 3/5, or 60%. Nonmembers: 18/45 = 2/5, or 40%. Club members have the higher posting rate.

Accept equivalent fractions, decimals, or percentages for rates. In the challenge, the comparison must use each group's total, not just the number who post.