LESSON MAKER PRO

Spot the Pattern

Compare choices in two-way tables

GRADE 8 · MT.8.SP.4

MT.8.SP.4 "Construct and interpret frequencies and relative frequencies for bivariate categorical data in a two-way table to investigate patterns of association..."

NAME _____ DATE _____

COMPARE FAIRLY

A two-way table sorts people by two categories. To compare groups of different sizes, divide each choice count by its group total, then compare the fractions.

WORKED EXAMPLE

What fraction of each group chose drawing? Which group had the higher share?

ART CLUB CHOICES

	Drawing	Painting
Group A	3	9
Group B	6	6

1. Group A: 3 + 9 = 12, so 3/12 = 1/4 chose drawing.
2. Group B: 6 + 6 = 12, so 6/12 = 1/2 chose drawing.
3. Compare: 1/2 > 1/4.

Answer: Group A: 1/4. Group B: 1/2. Group B had the higher share.

PRACTICE 4 problems

1 At an art fair, 8 grade 7 students chose prints and 4 chose posters. In grade 8, 5 chose prints and 7 chose posters. Make a two-way table with totals.

ANSWER _____

2 In a travel poll, 11 walkers brought lunch and 5 walkers bought lunch. What fraction of walkers brought lunch?

ANSWER _____

3 In a music poll, 8 of 16 grade 7 students and 14 of 28 grade 8 students chose drums. Did the grades have equal shares? Show both fractions.

ANSWER _____

4 At game night, 10 of 25 younger students and 18 of 30 older students chose puzzles. Which group had the higher share? Give both fractions.

ANSWER _____

APPLY IT Show your work

1 Montana Indigenous artists led a school showcase. Students chose a painting talk or a photography talk. Which grade had the higher share choosing photography?

SHOWCASE CHOICES

	Painting	Photography
Grade 7	10	15
Grade 8	12	8

ANSWER _____

2 A skate park asked visitors which hours they prefer. Compare the share choosing evening hours among bus riders and walkers. Does travel choice appear associated with the preference?

SKATE PARK SURVEY

	Evening	Daytime
Bus	18	12
Walk	10	20

ANSWER _____

CHALLENGE One step up

At an event led by Montana Indigenous poets and filmmakers, guests chose one session. Find x. Then compare the share choosing poetry among teens and adults. What pattern do you see?

SESSION CHOICES

	Poetry	Film
Teens	x	8
Adults	12	16
Total	24	24

WORK SPACE AND ANSWER

Spot the Pattern

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	At an art fair, 8 grade 7 students chose prints and 4 chose posters. In grade 8, 5 chose prints and 7 chose posters. Make a two-way table with totals.	**Columns: Prints, Posters, Total. Grade 7: 8, 4, 12. Grade 8: 5, 7, 12. Total: 13, 11, 24.**
2	In a travel poll, 11 walkers brought lunch and 5 walkers bought lunch. What fraction of walkers brought lunch?	**11/16**
3	In a music poll, 8 of 16 grade 7 students and 14 of 28 grade 8 students chose drums. Did the grades have equal shares? Show both fractions.	**Yes. Grade 7: 8/16 = 1/2. Grade 8: 14/28 = 1/2.**
4	At game night, 10 of 25 younger students and 18 of 30 older students chose puzzles. Which group had the higher share? Give both fractions.	**Younger: 10/25 = 2/5. Older: 18/30 = 3/5. Older students had the higher share.**

PART 2 · APPLY IT

1. **Grade 7: 15/25 = 3/5. Grade 8: 8/20 = 2/5. Grade 7 had the higher share.** Divide each photography count by its grade total. Compare 3/5 and 2/5.
2. **Bus riders: 18/30 = 3/5. Walkers: 10/30 = 1/3. Yes, the shares differ.** Find each travel group's total, then divide its evening count by that total.

CHALLENGE

x = 12. Teens: 12/20 = 3/5. Adults: 12/28 = 3/7. A higher share of teens chose poetry.

Accept equivalent fractions. In the challenge, the shares describe guests at this event, not all teens or adults.