LESSON MAKER PRO

Choose With Data

Compare rates before making a decision.

GRADE 8 · 8A.DSP.F

8A.DSP.F "Making and defending informed, data-based decisions is a characteristic of a quantitatively literate person."

NAME _____ DATE _____

COMPARE FAIRLY

When choices have different numbers of tries, divide successes by tries to find each success rate. Compare the rates, not just the numbers of successes, and use them to defend your decision. If the tries include different types of tasks, compare the rates for each type too.

WORKED EXAMPLE

A club tested two poster designs. Which design had the higher signup rate? Use both rates to explain.

POSTER TEST

Design	Signups	People who saw it
A	7	10
B	11	25

1. Design A: 7/10 = 70%.
2. Design B: 11/25 = 44%.
3. Compare 70% and 44%.

Answer: Design A had the higher signup rate, 70% compared with 44%.

PRACTICE 6 problems

1 Which game mode had the higher win rate? Give both rates.

GAME RESULTS

Mode	Wins	Games played
A	8	16
B	15	20

ANSWER _____

2 Which earbud brand had the lower defect rate? Give both rates.

EARBUDS CHECKED

Brand	Defective pairs	Pairs checked
A	4	40
B	6	48

ANSWER _____

3 Which group had the higher on-time return rate, or were the rates equal? Give both rates.

LIBRARY RETURNS

Group	On-time returns	Books borrowed
A	27	36
B	30	40

ANSWER _____

4 Which club ad had the higher scan rate? Give both rates.

CLUB ADS

Ad	QR code scans	People shown the ad
A	18	45
B	24	48

ANSWER _____

5 Which team met its daily fundraising goal more often? Give both rates.

FUNDRAISING GOALS

Team	Days goal met	Days tracked
A	26	40
B	36	45

ANSWER _____

6 Group B got more quiz questions right, but which group had the higher accuracy rate? Give both rates.

PRACTICE QUIZ

Group	Correct answers	Questions answered
A	12	16
B	48	80

ANSWER _____

APPLY IT Show your work

1 Your school can host only one event. Students were asked whether they would attend each event. Which event had the higher yes-vote rate among students asked? Show both rates to defend your choice.

EVENT VOTES

Event	Yes votes	Students asked
Puzzle tournament	42	56
Open mic	45	90

ANSWER _____

2 A student group tested two phone cases using the same drop test. What do these results show about which case protects phones better? Give both survival rates and make a data-based decision.

PHONE CASE DROP TEST

Case	Phones with no damage	Phones tested
A	33	44
B	48	64

ANSWER _____

CHALLENGE One step up

A puzzle club tested two practice tools. Next month, half its puzzles will be easy and half will be hard. Which tool should the club use? Compare each tool's success rate for each type, then use the equal mix to defend your choice. Explain why comparing only the overall rates could mislead the club.

PRACTICE TOOL TEST

Puzzle type	Tool	Solved	Tried
Easy	A	8	8
Easy	B	32	40
Hard	A	16	40
Hard	B	2	8

WORK SPACE AND ANSWER

ANSWER KEY

Choose With Data

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Which game mode had the higher win rate? Give both rates.	**Mode A: 50%. Mode B: 75%. Mode B had the higher win rate.**
2	Which earbud brand had the lower defect rate? Give both rates.	**Brand A: 10%. Brand B: 12.5%. Brand A had the lower defect rate.**
3	Which group had the higher on-time return rate, or were the rates equal? Give both rates.	**Both groups had a 75% on-time return rate.**
4	Which club ad had the higher scan rate? Give both rates.	**Ad A: 40%. Ad B: 50%. Ad B had the higher scan rate.**
5	Which team met its daily fundraising goal more often? Give both rates.	**Team A: 65%. Team B: 80%. Team B met its goal more often.**
6	Group B got more quiz questions right, but which group had the higher accuracy rate? Give both rates.	**Group A: 75%. Group B: 60%. Group A had the higher accuracy rate.**

PART 2 · APPLY IT

1. **Choose the puzzle tournament. Its yes-vote rate was 75%, compared with 50% for the open mic.** Divide yes votes by students asked for each event: 42/56 = 75% and 45/90 = 50%.
2. **Both cases had a 75% survival rate. These results do not show that one case protects phones better, so either choice is supported by this test.** Compute 33/44 = 75% and 48/64 = 75%. Neither case has a higher observed survival rate.

CHALLENGE

Choose Tool A. It solved 100% of easy puzzles and 40% of hard puzzles, compared with Tool B's 80% and 25%. For an equal mix, Tool A's expected success rate is (100% + 40%)/2 = 70%, while Tool B's is (80% + 25%)/2 = 52.5%. The overall test rates, 24/48 = 50% for A and 34/48 = 70 5/6% for B, are misleading here because A was tested on more hard puzzles and B on more easy puzzles.

Accept equivalent fractions or decimals when they support the same comparison. For the challenge, accept a correct equal-mix comparison stated without converting the rates to percentages.