LESSON MAKER PRO

What Study Next?

Use survey results to plan better research.

HIGH SCHOOL · S.IR.1.4

S.IR.1.4 "Create and evaluate recommendations for areas of future research."

NAME _____ DATE _____

FROM RESULTS TO QUESTIONS

To compare groups of different sizes, divide the number who gave a response by the number surveyed. Subtract the two percentages to find the gap in percentage points. A useful next study investigates a possible reason for the gap or checks whether it holds with a larger, more representative sample.

WORKED EXAMPLE

In a survey, 9 of 12 choir students and 6 of 12 theater students said rehearsals ended too late. Find the gap and recommend a question for future research.

1. Choir: 9/12 = 75%.
2. Theater: 6/12 = 50%.
3. Gap: 75% - 50% = 25 percentage points.
4. Ask whether the groups' rehearsal end times differ.

Answer: The gap is 25 percentage points. A future study could compare the groups' rehearsal end times.

PRACTICE 6 problems

1 Students reported whether they often arrive at school tired. Find the gap between the groups in percentage points. Write one question a follow-up study could investigate.

ARRIVING TIRED

Group	Often tired	Surveyed
Early-bus riders	14	20
Students who walk	8	20

ANSWER _____

2 Students reported whether they use the library after school. Which group has the higher rate, and by how many percentage points? Recommend one way to check whether the gap holds beyond these students.

AFTER-SCHOOL LIBRARY USE

Group	Use the library	Surveyed
Students in clubs	32	40
Students not in clubs	24	40

ANSWER _____

3 Students reported whether they want a later school start time. Which group has the higher rate, despite having fewer students who said yes? Find the gap in percentage points.

SUPPORT FOR A LATER START

Group	Said yes	Surveyed
Bus riders	21	30
Other students	48	80

ANSWER _____

4 Students reported whether they want more outdoor seating. Find the gap in percentage points. Which group would you sample more heavily in a follow-up, and why?

SUPPORT FOR OUTDOOR SEATING

Group	Said yes	Surveyed
First-year students	8	10
Second-year students	32	40

ANSWER _____

5 Students reported whether they often stay up late to finish homework. Find the gap in percentage points. Which follow-up is more useful for investigating the gap: asking about homework hours or asking about favorite colors?

STAYING UP LATE FOR HOMEWORK

Group	Often stay up late	Surveyed
Students with jobs	18	20
Students without jobs	56	80

ANSWER _____

6 Each pilot tested a different lunch line. Which pilot has the larger gap in the rate of students who called the line fast? Give that pilot's gap in percentage points.

LUNCH-LINE PILOTS

Pilot and line	Called it fast	Surveyed
Pilot A, new line	8	10
Pilot A, old line	4	10
Pilot B, new line	7	10
Pilot B, old line	5	10

ANSWER _____

APPLY IT Show your work

1 A student council surveyed students about using a new lunch-ordering app. In one group, 36 of 40 said they would use it. In another group, 48 of 80 said they would. Find the gap in percentage points. To check whether the result applies across the school, should the council survey only students who already use a food app or randomly select students from each grade? Explain your choice.

WORK SPACE

ANSWER _____

2 Two schools surveyed students about attending a free music night. At North School, 24 of 40 said they would attend. At South School, 28 of 40 said they would. Find the gap in percentage points. Recommend a future study to check whether the difference holds at other schools.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Students in three groups reported whether they would use a weekend study space. A researcher says Group A's higher rate than Group B's proves that students like those in Group A are more interested. Compute all three rates. Then evaluate the claim and recommend a specific follow-up study.

WEEKEND STUDY SPACE

Group	Would use it	Surveyed
A	8	10
B	72	100
C	64	80

WORK SPACE AND ANSWER

ANSWER KEY

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HIGH SCHOOL · S.IR.1.4

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Students reported whether they often arrive at school tired. Find the gap between the groups in percentage points. Write one question a follow-up study could investigate.	**The gap is 30 percentage points (70% versus 40%). A follow-up could ask whether commute length helps explain the difference.**
2	Students reported whether they use the library after school. Which group has the higher rate, and by how many percentage points? Recommend one way to check whether the gap holds beyond these students.	**Students in clubs have the higher rate, 80% versus 60%, a gap of 20 percentage points. Survey another randomly selected group from each category.**
3	Students reported whether they want a later school start time. Which group has the higher rate, despite having fewer students who said yes? Find the gap in percentage points.	**Bus riders have the higher rate, 70% versus 60%, a gap of 10 percentage points.**
4	Students reported whether they want more outdoor seating. Find the gap in percentage points. Which group would you sample more heavily in a follow-up, and why?	**The gap is 0 percentage points because both rates are 80%. Sample more first-year students because only 10 were surveyed.**
5	Students reported whether they often stay up late to finish homework. Find the gap in percentage points. Which follow-up is more useful for investigating the gap: asking about homework hours or asking about favorite colors?	**The gap is 20 percentage points (90% versus 70%). Asking about homework hours is more useful because it could help investigate the difference.**
6	Each pilot tested a different lunch line. Which pilot has the larger gap in the rate of students who called the line fast? Give that pilot's gap in percentage points.	**Pilot A has the larger gap: 80% - 40% = 40 percentage points. Pilot B's gap is 20 percentage points.**

PART 2 · APPLY IT

1. **The gap is 30 percentage points (90% versus 60%). Randomly selecting students from each grade is better because surveying only current app users could leave out students with different preferences.** Compute 36/40 = 90% and 48/80 = 60%. The proposed sample should include students regardless of whether they already use a food app.
2. **The gap is 10 percentage points (60% versus 70%). Survey randomly selected students at several other schools and compare their responses.** Compute 24/40 = 60% and 28/40 = 70%. Sampling at more schools tests whether this difference extends beyond the two schools surveyed.

CHALLENGE

The rates are A: 80%, B: 72%, and C: 80%. A's surveyed students had a rate 8 percentage points higher than B's, but the survey does not prove the claim about similar students in general. Survey a larger, randomly selected sample from each group to see whether the difference holds.

Accept other specific, relevant follow-up questions or sampling plans. A percentage-point gap describes the surveyed groups, but it does not by itself establish the cause of a difference.