LESSON MAKER PRO

Behind the Headline

Use data to check claims about change.

HIGH SCHOOL · A2.D.2

A2.D.2 "Analyze statistical thinking to draw inferences, make predictions, and justify conclusions. Evaluate reports by making inferences, justifying conclusions, and determining appropriateness of data collection methods..."

NAME _____ DATE _____

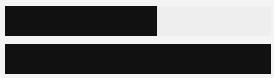
CHECK THE STARTING VALUE

To find a percent increase, subtract the starting value from the ending value. Divide that difference by the starting value, then multiply by 100. When a report makes a larger claim, also check who was counted and whether the data show cause and effect.

WORKED EXAMPLE

Use the graph to find the percent increase in chess club membership.

CHESS CLUB MEMBERS



members

1. Find the increase: 63 - 36 = 27.
2. Divide by the starting value: 27 / 36 = 3/4.
3. Convert to a percent: 3/4 x 100 = 75%.

Answer: Membership increased by 75%.

PRACTICE 6 problems

1 A post says podcast listeners increased by 5%. Use the graph to find the actual percent increase.

DAILY PODCAST LISTENERS



listeners

ANSWER _____

2 Find the percent increase in streams. Is a headline saying "Streams rose 30%" accurate? Explain briefly.

SONG STREAMS



streams

ANSWER _____

3 A blog says sign-ups grew by 6%. Use the table to find the actual percent increase.

WORKSHOP SIGN-UPS

Session	Sign-ups
First	12
Second	18

ANSWER _____

4 Use the graph to find the percent increase in passes requested.

GAME PASSES REQUESTED



passes

ANSWER _____

5 A headline says subscriptions increased by 20%. Find the actual percent increase and explain the error.

STUDENT NEWSPAPER SUBSCRIPTIONS

Month	Subscriptions
September	80
October	100

ANSWER _____

6 Use the table to find both the percentage-point increase in support and the percent increase relative to the first poll.

SUPPORT FOR A SCHOOL EVENT

Poll	Support	Surveyed
First	9	15
Later	12	15

ANSWER _____

APPLY IT Show your work

1 A school article says students in Group A are more likely than students in Group B to support a later start because more Group A students said yes. Use the table to find each group's support rate. Does the article's conclusion follow?

SUPPORT FOR A LATER SCHOOL START

Group	Said yes	Surveyed
A	24	60
B	18	30

ANSWER _____

2 A town added a bus route between the two months shown. A report says the new route caused the increase in free bus pass requests. Find the percent increase, then explain whether the graph proves the cause.

FREE BUS PASSES REQUESTED



requests

ANSWER _____

CHALLENGE One step up

Students chose whether to answer each of these online polls. A post claims that support for a school policy rose by 50% across the school. Find the percent increase in support among respondents. Does that result establish the post's schoolwide claim? Explain.

ONLINE POLLS ABOUT A SCHOOL POLICY

Poll	Support	Respondents
First	8	20
Later	18	30

WORK SPACE AND ANSWER

Behind the Headline

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A post says podcast listeners increased by 5%. Use the graph to find the actual percent increase.	**25%**
2	Find the percent increase in streams. Is a headline saying "Streams rose 30%" accurate? Explain briefly.	**The increase was 50%. The headline is inaccurate because 30 is the increase in streams, not the percent increase.**
3	A blog says sign-ups grew by 6%. Use the table to find the actual percent increase.	**50%**
4	Use the graph to find the percent increase in passes requested.	**20%**
5	A headline says subscriptions increased by 20%. Find the actual percent increase and explain the error.	**The increase was 25%. The headline treats the increase of 20 subscriptions as a 20% increase.**
6	Use the table to find both the percentage-point increase in support and the percent increase relative to the first poll.	**Support increased from 60% to 80%, a rise of 20 percentage points. The percent increase relative to the first poll was 33 1/3%.**

PART 2 · APPLY IT

1. **Group A: 40%. Group B: 60%. No, a greater share of Group B students surveyed said yes.** Divide each yes count by its group total: 24 / 60 = 40% and 18 / 30 = 60%. Comparing counts alone hides the different group sizes.
2. **Requests increased by 40%. The graph does not prove the new route caused the increase.** The increase is 10 / 25 = 40%. The timing alone cannot rule out other reasons for the change.

CHALLENGE

Support among respondents rose from 40% to 60%. The relative increase was (60 - 40) / 40 = 50%. The polls do not establish a schoolwide increase because students chose whether to respond, and the respondents may not represent the school.

For the poll questions, distinguish percentage points from relative percent increase. Accept other specific reasons that a change over time does not establish causation.