LESSON MAKER PRO

Check the Claim

Read the data before trusting the headline.

HIGH SCHOOL · A2.D.2.1

A2.D.2.1 "Evaluate reports by making inferences, justifying conclusions, and determining appropriateness of data collection methods. Show how graphs and data can be distorted to support different points of view."

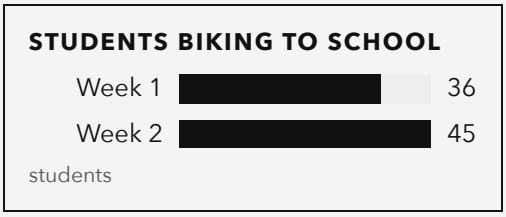
NAME _____ DATE _____

LOOK PAST THE GRAPH

To find a percent change, divide the change by the starting value, then multiply by 100%. Check the graph's scale and how the data was collected before accepting a claim.

WORKED EXAMPLE

What is the percent increase shown in the graph?



1. Find the change: 45 - 36 = 9.
2. Divide by the starting value: 9/36 = 1/4.
3. Convert to a percent: 1/4 = 25%.

Answer: The number of students increased by 25%.

PRACTICE 4 problems

1 A count rises from 24 to 30. What is the percent increase?

ANSWER _____

2 A count falls from 80 to 60. What is the percent decrease?

ANSWER _____

3 A count rises from 50 to 55. Find the change and the percent increase.

ANSWER _____

4 Eight of 10 basketball players polled want a new gym. A headline says, "80% of all students want a new gym." Give the sample percent and one reason the headline is unsupported.

ANSWER _____

APPLY IT Show your work

1 A music club surveys its members in March and April. From the graph, how many percentage points did app use rise? Does this show the same rise for the whole school? Explain.

MUSIC CLUB MEMBERS USING AN APP



ANSWER _____

2 Students in a fan section were asked about extending halftime. If the school has 500 students, what schoolwide total would the sample rate predict? Why is the estimate unreliable?

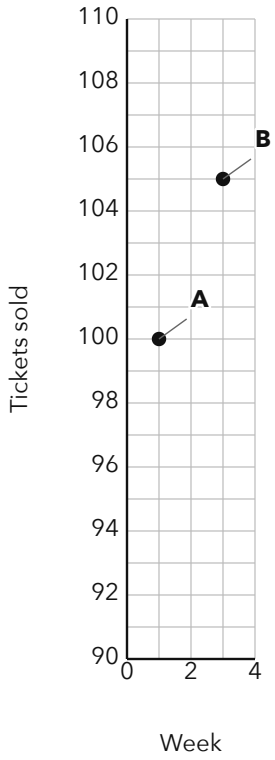
STUDENTS WHO FAVOR LONGER HALFTIME

Group surveyed	Favor	Total surveyed
Fan section	20	25

ANSWER _____

CHALLENGE One step up

The graph's vertical axis starts at 90, not 0. From A to B, what is the actual percent increase? What percent increase do the points' heights above 90 suggest? Explain the difference.



WORK SPACE AND ANSWER

Check the Claim

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A count rises from 24 to 30. What is the percent increase?	**25%**
2	A count falls from 80 to 60. What is the percent decrease?	**25%**
3	A count rises from 50 to 55. Find the change and the percent increase.	**An increase of 5, or 10%.**
4	Eight of 10 basketball players polled want a new gym. A headline says, "80% of all students want a new gym." Give the sample percent and one reason the headline is unsupported.	**The sample percent is 80%. Basketball players may not represent all students.**

PART 2 · APPLY IT

1. **App use rose 15 percentage points. No, club members may not represent the whole school.** Subtract 60% from 75% to get 15 percentage points. The survey covered club members, not a schoolwide sample.
2. **The rate predicts 400 students. The fan section may not represent the whole school.** The sample rate is 20/25 = 4/5, and 4/5 of 500 is 400. Surveying only the fan section could bias the estimate.

CHALLENGE

The actual increase is (105 - 100)/100 = 5%. Above 90, the points' heights are 10 and 15, suggesting an increase of (15 - 10)/10 = 50%. Starting the axis at 90 makes the increase look larger.

For the written responses, accept equivalent explanations that identify an unrepresentative sample or the truncated axis. In the music club problem, 15 percentage points is the difference between the two percentages.