LESSON MAKER PRO

Check the Claim

Use the numbers and the source to judge chemistry reports.

HIGH SCHOOL · CHE.1.3

CHE.1.3 "Enrichment: Research information from multiple appropriate sources and assess the credibility, accuracy, possible bias, and conclusions of each publication."

NAME _____ DATE _____

COMPARE BEFORE YOU CONCLUDE

To find a success rate, divide the number that met the target by the number tested. Then check who published the result, how the samples were chosen, and whether the publisher has a reason to favor a particular conclusion.

WORKED EXAMPLE

Two publications report results for the same chemical test. Find each success rate. Which report is a better starting point for checking the claim?

CHEMICAL TEST RESULTS

Publication	Tested	Met target
Brand ad	8	6
Independent lab	25	14

1. Brand ad: 6/8 = 75%.
2. Independent lab: 14/25 = 56%.
3. The lab tested more samples and has no stated sales interest.

Answer: The independent lab is a better starting point. Its result is 56%, compared with 75% in the brand ad.

PRACTICE 4 problems

1 A lab reports that 18 of 30 water samples met its target. What percent met it?

ANSWER _____

2 A filter ad says 16 of 40 samples met its target. Find the percent and name one possible bias.

ANSWER _____

3 A university reports 21 of 35 samples passed. A seller reports 27 of 45 passed. Find both rates. Do equal rates prove equal credibility?

ANSWER _____

4 A headline says 90% passed, but the report says 32 of 50 passed. Is the headline accurate? Give the correct rate.

ANSWER _____

APPLY IT Show your work

1 A school lab checks 39 of 50 sports drink bottles against a sodium-label target and posts its method. A paid brand post says 26 of 40 bottles met the same target but gives no method. Find both rates. Which report is easier to verify, and why?

WORK SPACE

ANSWER _____

2 A video selling a dorm water filter says every sample met a lead limit. Its linked report says 42 of 70 samples met the limit. Find the rate and explain why the video's claim is questionable.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A blog says most samples passed after averaging the two batch rates. Use the table to find the overall pass rate. Is the blog's conclusion supported? Name one detail you would check before trusting the report.

TWO BATCHES FROM ONE TEST

Batch	Tested	Passed
Small	5	4
Large	45	18

WORK SPACE AND ANSWER

ANSWER KEY

Check the Claim

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A lab reports that 18 of 30 water samples met its target. What percent met it?	**60%**
2	A filter ad says 16 of 40 samples met its target. Find the percent and name one possible bias.	**40%; the seller may favor results that help sell the filter.**
3	A university reports 21 of 35 samples passed. A seller reports 27 of 45 passed. Find both rates. Do equal rates prove equal credibility?	**Both rates are 60%. No, the seller has a sales interest, and the testing methods may differ.**
4	A headline says 90% passed, but the report says 32 of 50 passed. Is the headline accurate? Give the correct rate.	**No. The correct rate is 64%.**

PART 2 · APPLY IT

1. **The school lab reports 78%, and the brand post reports 65%. The school lab is easier to verify because it posts its method.** Divide 39 by 50 and 26 by 40. A published method lets readers examine how the lab tested the bottles.
2. **60% met the limit. The claim that every sample met it contradicts the report.** Divide 42 by 70 to get 60%. The video's sales purpose is another reason to check its claim against the linked report.

CHALLENGE

The overall rate is (4 + 18)/(5 + 45) = 22/50 = 44%. No, most samples did not pass. Check how the samples were chosen.

Accept other specific credibility checks, such as the test method or the publisher's financial interests. For the challenge, students must combine the counts, not average the two batch rates.