

There are many ways to interpret data. Industry, government, and media may interpret data based on their own priorities. Once you understand the units and terms, you can look deeper and draw your own conclusions. These activities help you look critically, to find the numbers you care about most, and to challenge questionable claims about the data.

Still having trouble reading data? Start with  **Making Sense of the Data**

A First Look at Challenging Claims

Step through the process of finding and challenging dubious claims.

- Find numbers and data, even if they're hidden
- Make sure there's no mixup of units
- See if "typical" numbers really are typical.
- Verify that estimates or predictions are valid
- Check that the any health-based standards used were the most protective.
- Verify claim about increases or decreases
- Check for ambiguities and press for detail

After finding potential challenges, rate them based on how easy the challenge will be, and how much it might help your campaign.

The impact statement for the power plant expansion didn't account for the 300 tons of NO_x per year from the diesel trucks trucking in fuel and trucking out waste.



The report says tests didn't detect any benzene in the factory air. But the testing equipment can't detect anything below 2 ppm. That's four times the legal limit.



Arsenic levels are over the legal limit in 12 people's tap water. In one home, the level is 24 times the limit.

TCE levels are only 2% lower than this time last year. The cleanup isn't working – we need a more aggressive remediation plan.



Finding Newsworthy Data

Examine data to find and describe:

- Contaminants with the highest levels compared to legal limits
- Diseases with the highest rates compared to what's typical
- Inconsistent or fluctuating data
- Contamination or disease rates coming down too slowly or rising suddenly
- Contamination not detected, but detection limits are set above health-based standards

Scrutinize data for more specific mistakes, mixups, and negligence.

SA The Summary vs. the Lab helps ensure the summary of a report accurately reflects lab data.

SA Inside Averages highlights ways an average can be presented as “typical” when it isn’t.

SA Sampling Plans helps a group think about where a site should be tested for contamination. Can be used before testing, or afterwards if the sampling plan was inadequate.

*The report summary says the highest soil lead level was 62 $\mu\text{g}/\text{kg}$. But in the lab results, the actual reading was 62 **mg**/kg. That’s 1,000 times more!*



The asphalt plant reported that their average monthly emissions are within their permit. But they operate 5 months per year – that average doesn’t represent what we’re breathing in July!



Three soil samples for each house is insufficient. We want 3 in the front yard, 3 in the back yard, and 2 on each side of the house.



Also, check out **SA Pieces of the Risk Puzzle** to analyze health risks. Consider factors like toxicity, exposure, and susceptibility. Think carefully about pursuing a health study to measure health effects.