



Effective Quantitative Comparative Statements

To convey data clearly, a writer must include all relevant information while avoiding superfluous details. The following guidelines can help you to write effective quantitative comparative (QC) statements—which are statements you will rely on when writing about data. (Note: This resource was created for the Biology introduction series. For other disciplines, consult with your professor. Some courses may have different or additional expectations.)

Consider this example of an *effective* QC statement:

There was a 50% increase in student lab report scores between 2015 and 2016 (Table 1).

What makes this QC statement so effective?

1. It includes a relational phrase or calculation – “50% increase”.
Hint: The sentence’s relational phrase or calculation should give readers information about magnitude (e.g., how much) *and* direction (e.g., increase/decrease; faster/slower)¹.
2. It contextualizes that relational phrase so readers know what the calculation/relation refers to – We know the 50% increase relates to student lab report scores.
Hint: It can be helpful to place the contextual detail right after or before the calculation (e.g., ... 50% increase in student lab reports) so readers see the relationship.
3. It specifies what is being compared – Readers also know the scores being compared are from 2015 and 2016.
Hint: Both items in the comparison should be mentioned within your sentence. Do not leave readers guessing because of incomplete comparisons.

¹ When checking for a calculation, check for words such as less than/greater than; faster/slower; increase/decrease; lower/higher; larger/smaller. Of course, this list is not exhaustive, but it can help you to start narrowing in on key words to use when writing about data.

The previous sample sentence works because of what it includes, and even small adjustments to the syntax can preserve the sentence's clarity and its effectiveness as a QC statement. Consider this restructured version:

Between 2015 and 2016, student lab report scores increased by 50% (Table 1).

This sentence is structured differently, yet it is as effective as the previous example because it contains all the necessary information (i.e., relational phrase/calculation; context; complete comparison).

Both sentences also work because they *leave out* unnecessary information.

1. They do not include raw data
 - The writer could have included point values for the lab report scores—and here's an example of that: "In 2015, student lab report scores were 30 points and in 2016, they were 45 points (Table 1)." But this makes readers do extra work. Instead, do the calculations yourself and present them concisely to your readers within your sentences.
 - Hint: Leave raw data for charts and tables and refer your reader to those.
2. They are not wordy
 - Information is not repeated.
 - Hint: More words doesn't necessarily mean better writing. Keep your statements focused and clear so the data—what your readers need to know—stand out as clearly as possible. You can even use the active voice to make your writing clear and concise!

Some additional examples of effective quantitative comparison statements:

The HUB Writing Center had a two-fold increase in appointments between fall 2015 and fall 2016.

Male mice who were fed a diet heavy in fructose/glucose, produced 25% fewer offspring than male mice not fed the diet.

Between 2012 and 2014, Santa Clara University's water usage decreased by 23%.

Students who declared the Sustainability Pathway were 45% more likely to use public transportation than were students who had declared a different Pathway.

