

How to Write a Source of Error in Science

What is a Source of Error?

All scientific reports must contain a section for error analysis. The purpose of this section is to explain how and why the results deviate from the expectations.

Systematic errors result from flaws in the procedure. Consider a Battery testing experiment where the lifetime of a battery is determined by measuring the amount of time it takes for the battery to die. A flaw in the procedure would be testing the batteries on different electronic devices in repeated trials. Because different devices take in different amounts of electricity, the measured time it would take for a battery to die would be different in each trial, resulting in error.

Because systematic errors result from flaws inherent in the procedure, they can be eliminated by recognizing such flaws and correcting them in the future

Ways to improve my Source of Error:

Review the grading rubric below for the difference between accomplished, developing, and not met.

	Accomplished	Developing	Not Met
Source of Error	I, the researcher, clearly identified errors made during the experimental process and included opinions on making corrections.	I, the researcher, identified errors made during the experimental process.	I, the researcher, did not identify errors made during the experimental process.

Source of Error samples with Mrs. Weimer's feedback

- Error: The baker used two different **cake** mixes when testing what shape of the pan bakes the cake the fastest.
Solution: The baker should have used the same type of cake mix so that the only variable manipulated was the shape of the pan.
- Error: The baker used two different **cake** mixes.
Solution: The baker should have used the same type of cake mix.
- Error: The baker did not figure his **mean** correctly.
Solution: The baker should have added his numbers up then divide them.

Comment [JW1]: Rating is Accomplished. The researcher stated an error made in the experiment and explained how it could be better controlled if the experiment was performed again.

Comment [JW2]: Rating is Developing. The researcher only stated the error and provide just the solution. No explanation or opinion for this correction is provided.

Comment [JW3]: Even though finding the mean is needed for the graph and analysis, it was not a part of the procedures for the experiment.