

Step-by-Step Guide*

The purpose of this table is to provide step-by-step guidance to translate raw experimental data into an effective visual representation (i.e. graph)

Phases 1-3	Elements	Notes for your Experiment
<p>1. Planning- In this phase, you must organize your data and decide on the message you want to communicate in your graph. It helps to first conceptualize the whole task before executing it.</p>	Step 1- Revisit your research question and hypothesis and ask yourself, what is it that you want the graph to show?	
	Step 2- Identify your independent and dependent variables.	
	Step 3- Classify your variables as either categorical or continuous.	
	Step 4- Decide whether or not you need to manipulate your data.	
	Step 5- Decide on a graph type that will best represent your data.	
<p>2. Execution- In this phase, you will actively construct a graph.</p>	Step 6- Label the axes with your variables.	
	Step 7- Add units to the axes, if necessary.	
	Step 8- Adjust the scale of axes into appropriate increments for the data.	
	Step 9- Include a key, if appropriate.	
	Step 10- If you are displaying the graph in a report, include a figure legend.	
<p>3. Reflection and Explanation Phase- In this phase, you will critically reflect on your graph choice, interpret your graph, and explain your answers to questions posed in steps 13-16.</p>	Step 11- Include a descriptive title.	
	Step 12- Check the alignment of your representation with your research question and hypothesis.	
	Step 13- What are the advantages of the representation?	
	Step 14- What are the disadvantages of the representation?	
	Step 15- What is the take-home message of the representation?	
Step 16- What are some other ways that you could have represented your data?		

*Adapted from: Angra A and Gardner SM (2016). Development of a Framework for Graph Choice and Construction. *Advances in Physiology Education* 40: 123–128. doi:10.1152/advan.00152.2015