Research Question:
Hypothesis and prediction:

	Present /Appropriate (P/A)= 0.5 pts Present but Needs Improvement (NI) =0.25 pts Unsatisfactory (U)= 0 pts	GRAPH 1			GRAPH 2		
		P/A	NI	U	P	NI	U
Graph Mechanics	**Descriptive title** • P/A-Should be: a) in the form of a statement, b) mention the subject, c) appropriate variables, and d) include relevant details about the experiment that help understand the take home message. • NI- If the title is missing any one of the four points mentioned above. • U- The graph does not have a title.						
	Label for the X axis (e.g. time) • P/A- Should be appropriate and descriptive for the experiment. For graphs with categorical independent variables, there needs to be a label under each set of data and a larger label under all data plotted. • NI- If the label is missing any one of the points mentioned above. • U- The graph does not have an x-axis label						
	Label for the Y axis (e.g. heart rate) • P/A- Should be appropriate and descriptive for the experiment. If the data is manipulated (average, change, percentage, etc.), then it should be indicated on the y axis. • NI- If the label is missing any one of the points mentioned above. • U- The graph does not have a y-axis label						
	Units for the X axis (e.g. seconds) • P/A- Should be appropriate and descriptive for the data displayed. • NI- If the units are not appropriate or descriptive. • U- The graph does not have units for the x-axis.						
	Units for the Y axis (e.g. average beats per minute) • P/A- Should be appropriate and descriptive for the data displayed. • NI- If the units are not appropriate or descriptive. • U – The graph does not have units for the y-axis.						
	Scale (appropriate intervals and range for data) • P/A- Should be appropriate for the data displayed with appropriate significant figures. If the scale is discontinuous or doesn't start at the origin, it should be indicated by a break in the axis. • NI- If the scale is not appropriate for the data and/or if the scale does not indicate axis break. • U- The graph does not have a scale.						
	Key (defines different data sets that are plotted) • P/A- Should be appropriate and descriptive for the data displayed. It should include: a) descriptions of different colors (if applicable), b) the sample size and c) the number of trials. • NI- If the key is not descriptive and does not indicate the sample size. • U- A key is necessary but is not shown on the graph.						
	Total Points for Mechanics: **/3.5pts**						

	Present/ Appropriate (P/A) = 1.3 pts Needs Improvement (NI) = 0.65 pts Unsatisfactory (U) = 0 pts	GRAPH 1			GRAPH 2		
		P/A	NI	U	P/A	NI	U
Communication	**Ease of Understanding-Aesthetics** • E- If the graph is aesthetically pleasing, meaning that: a) the data plotted takes up sufficient room in the Cartesian plane, b) makes use of legible size font, c) the x and y axis lines are clear and legible, d) the graph displays data in an appropriate number of bars and lines, and e) is devoid of chart junk elements such as: distracting background colors, patterns, and dark gridlines • NI- If the graph has one of the following flaws: a) the graph displays too much white space, b) the font size is too small, c) the x and y axis lines are not clear and legible, d) the graph shows too many bars or lines OR e) elements of chart junk are clouding interpretation of data. • U- If the graph has multiple flaws, which interfere with the understanding and interpretation of data.						
	Ease of Understanding-Take home message • E- If the graph is constructed in a way that is: a) clear to sort trends and b) easy to note the take home message. • NI- If data trends are difficult to observe or it is difficult to formulate a proper take home message. • U- If the graph is ineffective at communicating data trends and take home message.						
Graph Choice	**Graph Type (Bar, line, scatter, dot, box and whisker)** • E- If data displayed in a graph is appropriate for both independent and dependent experimental variables (i.e. categorical and continuous) and data. (*Referring to the data form) • NI- If data displayed in a graph is a) not suitable for either the dependent or independent experimental variables OR b) there is a better way to present data. • U- If the graph type is not suitable for both experimental variables.						
	Data Displayed (Raw, Averages, Changes, Percentage) • E- If the graph indicates the type of data (ex. Raw, averages, etc.) that are plotted. There should be a clear distinction between raw data and manipulated data based on the information presented in the key (ie. sample size and number of trials) and axis label. If the graph is showing averages, then it should also be accompanied with STDEV or error bars. • NI- If the graph is missing one of points mentioned above. • U- If data type is inappropriate for the graph type						
	Alignment *(at least one of the graphs presented should align with the prediction and hypothesis. Other graphs can be exploratory.)* • E- If the graph is completely aligned with the prediction and hypothesis. In other words, the independent, dependent variables, and information about the experiment are explicit. • NI- If the graph is partially aligned with the prediction and hypothesis. In other words, the graph is missing information about either the independent, dependent, or details about the experiment. • U- If the graph is not aligned with the prediction and hypothesis.						
	Total Points for Graph Choice and Communication: /6.5 pts						
	Total Score: /						

Comments: