LAB REPORT CHECKLIST AND OUTLINE[1]

INVESTIGATION QUESTION

Purpose: To summarize the lab investigation in one sentence/question

What should be included:

_____ specific question about what you are testing

_____ specific information about what you are looking for

HYPOTHESIS

Purpose: A guide to what you are testing and what you expect the outcome to be

What should be included:

_____ specific information about what you are testing

_____ specific prediction about the outcome

_____ reason for prediction that is based on your observations and experiences

VARIABLES

Independent Variable (IV)

Purpose: To summarize what you are comparing in your test

What should be included:

_____ one sentence about what you are comparing/**manipulating**

_____ a list of the choices used in your comparison

Dependent Variable (DV)

Purpose: To describe what and how you will measure to verify your hypothesis

What should be included:

_____ a description of what will be measured or what data will be collected

_____ identification of the instrument used to make the measurements or the method used to collect the data

_____ identification of the units you will record

_____ identification of the precision of the instrument used and of the data collected

Controlled Variables (CV)

Purpose: To describe how you are keeping your test fair

What should be included:

_____ A description of each part of the experiment you will keep constant

MATERIALS

Purpose: To make certain the proper materials are used

What should be included:

_____ a list of all equipment used

_____ all amounts needed

_____ all sizes and units of equipment used

_____ scientific names of all living organisms used in the investigation

[1] Revised 29 April 2013

METHOD

Purpose: To provide information on how to repeat your experiment for anyone who wants to verify your results

What should be included:

_____ each step taken to set up your experiment
_____ each step taken on how data is collected
_____ description of what calculations will be done with the data
_____ method is written as steps and not in paragraph form
_____ a description of your control is included if relevant
_____ illustration of how the experiment looks when completely set up
_____ illustration of how the data were collected

DATA – TABLE

Purpose: To show all raw data collected in an organized table

What should be included:

_____ specific title that describes the data in the table
_____ title is written as a statement and not as a question
_____ specific labels for both the IV and DV
_____ averages that have appropriate decimals

DATA - LINE GRAPH

Purpose: To show the trends in the trials and raw data

What should be included:

_____ specific title that describes the data in the graph (use the same title as that of the table)
_____ y-axis is labeled with appropriate units (DV)
_____ x-axis is labeled as trials and the IV
_____ all trial data is graphed
_____ data points are labeled on each line

DATA - BAR GRAPH

Purpose: To show a comparison of the averages

What should be included:

_____ specific title that describes the data in the graph (use the same title as that of the table but add the term **average**)
_____ y-axis is labeled with appropriate units
_____ x-axis is labeled with each choice compared as part of your IV
_____ data points are added above each bar

DATA - Description of data

Purpose: To summarize your data

What should be included:

_____ description of all averages
_____ description of maximum and minimum outcomes
_____ description of overall patterns in the data.
_____ **add units to all numbers.**

DATA – Interpretation of Data

Purpose: To explain if the data make sense and to explain the results.

What should be included and what should be done:

_____ look at your data to see if they make sense

_____ look at your averages to see if they fit your data

_____ ranges and differences of data in ***each*** trial (you should have one sentence for each choice compared as part of your IV)

_____ description of anomalous data with possible reason.

_____ write an overall explanation if your data are **reliable** based on:

if the data make sense

if the numbers in each trial similar or close together

the presence or absence of anomalous numbers

_____ write a specific conclusion statement based on the results

_____ explain your results using scientific reasoning that is supported with other experimental results, research on the topic, or scientific theories or laws

EVALUATION

Validity of Hypothesis

Purpose: To evaluate your hypothesis and make a conclusion based on the results.

What should be included and what should be done:

_____ Re-read your prediction and look at your averages – are your averages far enough apart to give you a clear idea of an outcome?

_____ Do your results support or not support your hypothesis?

_____ rewrite only the prediction part of your hypothesis

_____ describe if the data support your hypothesis

_____ include a comparison of the averages

Validity of Method

Purpose: To evaluate whether your method was fair and you used appropriate equipment (the most precise equipment possible) to collect data.

What should be included and what should be done:

_____ Re-read your CV's: were you able to keep all of them constant?

_____ describe if all of the CV's were kept controlled **and** include details about each CV

_____ if you did not keep all of your CV's controlled explain how this may have affected your test.

_____ Re-read your IV: did you only change this one part of your experiment?

_____ explain if you only had one independent variable and if all of the choices you included made sense.

_____ explain if you selected an appropriate instrument to measure your data, by describing the **precision** of the instrument you used

_____ describe any flaws in your method and explain why these are flaws

_____ write an overall statement about whether your method was **valid**

Improvements or Extensions

Purpose: To explain how you would change your method to overcome the flaws or what would be the next logical investigation to make based on your data.

What should be included:

_____ describe changes you would make to the investigation and why

_____ describe the next logical investigation to make based on your data and why

BIBLIOGRAPHY:

Purpose: To give credit to those individuals you borrowed information from

What should be included:

_____ Using easybib.com to accurately make a list of the resources you used.

_____ Do not cite the unit packet or sciclass - t***hese do not*** count as resources.

_____ provide in-text citations on any numbers or statistics that you used from the internet

_____ provide in-text citations on any information you had to look up

Additional items to check:

_____ you have headings for each section

_____ headings are on the same page as the information

_____ all information except the materials are written using complete sentences

_____ you have checked the list of words and phrases not to use