

Honors Independent Research Project

Teacher Name: **Mr. Tillett**

Student Name: _____

CATEGORY	PhD in Chemistry	MS in Chemistry	BS in Chemistry	Beginner in Chemistry
Topic	10 -Topic is from the list of approved topics, and an original or well adapted idea.	6 -Topic is from the list of approved topics, and may be original or strikingly similar to an already existing experiment.	4 -Topic may be from the list of approved topics, but not original and strikingly similar to an already existing experiment.	1 -Topic is not from the approved list, it is not original, and it is the plagiarized from an existing experiment.
Variables and Controls	10 -All variable and controls are identified. Only one variable is actually being tested.	6 -All variables and controls are identified. More than one variable is actually being tested.	4 -Variables are partially identified. More than one variable is being tested.	1 -No variables are identified.
Introduction	10 -Includes problem/question, rationale, background information, and hypothesis.	6 -Missing one of the requirements.	4 -Missing multiple requirements.	1 -Missing nearly all of the requirements.
Problem or Question	10 -Question to be answered is clearly identified.	6 -Question is identified, but confusing.	4 -Question is obscurely identified.	1 -Question is not identified.

Rationale	10 -Pertinent interest in the topic is shown making the project personal to the researcher.	6 -Personal interest is shown, but unconvincing.	4 -Only obvious, cookie-cutter, answers are given.	1 -No rationale is included.
Literature Search	10 -Information is provided about the topic and what has been already published about the topic. An effort should be made to emphasize points that you'll be researching.	6 -Information is provided about the topic, but the emphasis is not enough to give adequate information about the topic.	4 -Partial information is given about the topic.	1 -Little to no information is given about the topic.
Hypothesis	10 -A hypothesis is clearly stated in an "If...,then..." format.	6 -Hypothesis is clearly, stated in wrong format.	4 -Hypothesis is obscurely stated in the wrong format.	1 -There is no hypothesis.
Materials	10 -A list, with bullets, is given of all pertinent materials.	6 -A list is given with materials in which some are not necessary to list.	4 -Only a partial list is given.	1 -Very little or no list is given.
Methods	10 -A step-by-step procedure is given in numerical order that is reproducible for other researchers.	6 -A step-by-step procedure is given with a few unclear or missing steps.	4 -A procedure is given with a lot of missing information.	1 -Very little or no procedure is given.
Experimental Design	10 -A detailed design is given with preference given to people with pictorial evidence. (When applicable)	6 -A semi-detailed design is given that may include pictorial evidence. (When applicable)	4 -Vague description is given without a picture.	1 -Little to no description without a picture.

Results	20 -Quantitative as well as Qualitative data is presented, as well as tables of data and appropriate graphs with a daily log of the experiment.	13 -Quantitative and Qualitative data is given that may be missing some data tables or graphs or an incomplete log of the experiment.	7 -There is not enough appropriate data given to support your results.	1 -Little to no data is presented that validates the experiment. Data is not believable or sensible.
Tables	60 -Tables are provided for numerical data that make sense and clearly labeled.	30 -Tables are provided for data, but they are not labeled. They also might be missing some information.	10 -Tables are only partially given.	1 -Tables are not given.
Graphs	40 -Graphs are used when appropriate with a title and labeled axis.	25 -Graphs are used with some labeling.	10 -Graphs are used with no labeling.	1 -Graphs are not used..
Daily Log	20 -Sufficient log given to substantiate an appropriate experimental time frame. Dates should make logical sense.	13 -Partial log is given with dates that make logical sense.	7 -Few dates are logged to substantiate the experiment.	1 -No log is given.
Discussion	80 -Results are discussed and an effort is given to try to explain the results. It is obvious that thought was put into analyzing the data.	50 -Results are discussed and a haphazard effort is given to explain results.	20 -Results are given and only partially discussed.	1 -Results are simply restated.
Errors	10 -Possible errors are identified. These errors should be meaningful reflections on your experiment.	6 -Possible errors are given some of which are cookie-cutter errors.	4 -Errors are given and most of which are errors that never took place in the first place.	1 -No errors are given.

Improvements	10 -Improvements are given for use in experiments in the future. These improvements should be meaningful reflections on your experiment.	6 -Improvements are given some of which are cookie-cutter solutions.	4 -Few improvements are given.	1 -No improvements are given.
Sources Cited	40 -At least 4 sources are cited as well as documented in the paper. One of which must be a book and one must be an internet site.	25 -Sources may be documented in the paper and may be missing one source.	15 -Sources may be documented in the paper and is missing two sources.	1 -Some sources are given, but they are not documented in the paper.
Reasonable Results	80 -All results are shown to be reasonable and make scientific sense.	20 -Most results are reasonable with some results may seem a bit fabricated.	10 -A good number of the results are given that do not make scientific sense and there is extreme doubt of the validity of your data.	1 -Data is obviously fabricated or copied from a previous experiment.
Misc. Requirements	10 -Paper has a clear, concise flow. All parts of the experiment are typed and computer generated. Font is around 12 point with preference to Arial. Grammar does not take away from the entire paper.	7 -Paper is typed with semi-appropriate font and size. There are some grammar mistakes and the clarity starts to suffer.	3 -Paper is typed. Type face is way to large. Grammar is a huge problem and the clarity of the paper suffers drastically.	1 -Paper is typed. Grammar and clarity is such an issue that it is difficult to understand.
Conclusion	30 -Briefly summarizes the results of the experiment and the relationships among the data.	20 -Partially summarizes the results of the experiment and the relationship.	10 -Poorly summarizes results.	1 -Does not include a conclusion.