Procedures

Day 1:
Design an experiment to determine why termites behave the way demonstrated by your instructor. Think of a possible cause, develop a proper hypothesis, design a procedure for testing it, and predict the termites' behavior. Be sure that your procedure includes appropriate controls, and identify all variables involved (i.e., dependent/independent). Perform your experiment, record pertinent observations into data tables designed by your group, analyze your results, and form a conclusion, indicating whether or not your hypothesis was supported.

Keep in mind that you are to record behavior patterns that are quantifiable, collecting at least one type of quantitative data as well as one type of qualitative data of your choosing. Continue to refine your hypothesis as new data becomes available. Keep in mind that good experimental design involves the elements of repeatability and reasonable sample size, among other factors.

Day 2:
Groups will reconvene to wrap up experiment and discuss results. During this time, you should create a poster and prepare for a 5 minute peer-reviewed presentation to your classmates. Your group presentation and poster should include the following:

1. Your original hypothesis, stating the preliminary observations on which it was based.
2. A brief description of the experimental design you used to test this hypothesis.
3. Identification of all variables used. How did you control for them in your experiment? What about sample size? Replication of trials?
4. An illustration of the quantitative data you collected by way of chart, graph, data table, etc. that you will show to your classmates.
5. A summary of your findings with regards to your original hypothesis. Where would your experiment go next? What would be your new hypothesis if you had the chance to revise your experiment?
6. Time at the end of your presentation for peer critique and questions.
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<th>Termite Lab Rubric</th>
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<tr>
<td><strong>Hypothesis</strong> <em>(5 points)</em></td>
<td>Well written, concise, testable.</td>
<td>Solid, testable, minor issues w/wording</td>
<td>Testable, but confusing/unclear writing</td>
<td>Not testable, poorly written</td>
<td>None included</td>
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<td><strong>Experimental Design</strong> <em>(5 points)</em></td>
<td>Easy to follow, concise design, gives enough detail to be repeated exactly by other scientists</td>
<td>Design can be repeated by another scientist</td>
<td>Some aspects of design are good, but missing several elements, hard to follow</td>
<td>Missing many important elements</td>
<td>None included</td>
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<td><strong>Variables Identified</strong> <em>(5 points)</em></td>
<td>Correct independent and dependent variables are clearly included</td>
<td>Correct independent and dependent variables included, but not well defined</td>
<td>Independent and dependent variables included, but aren’t defined or correct</td>
<td>Missing either independent or dependent variable, not well defined/correct</td>
<td>None included</td>
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<td><strong>Control Group</strong> <em>(5 points)</em></td>
<td>Clearly defined in presentation/poster</td>
<td>Included in presentation/poster</td>
<td>Included, not well defined some aspects are incorrect</td>
<td>Incorrect identification/description of control group</td>
<td>None included</td>
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<td><strong>Quantitative Data in Chart or Graph</strong> <em>(10 points)</em></td>
<td>Excellent chart/graph. Labeled, titled, concise, data is plotted correctly</td>
<td>Good chart/graph. Labeled and plotted correctly</td>
<td>Chart has some correct data, but is missing labels, units or title.</td>
<td>Chart included but incorrect. Missing data and improper labeling</td>
<td>None included</td>
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<td><strong>Summary of Results and Conclusions</strong> <em>(10 points)</em></td>
<td>Thorough, correct and concise analysis of results</td>
<td>Complete and correct analysis of results</td>
<td>Some aspects of analysis are correct but others are missing/incorrect</td>
<td>Missing and incomplete analysis of results</td>
<td>None included</td>
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