Workshop: building a research project

**Guidelines**

1. **Question, hypothesis, and predictions.** Develop a question and hypothesis that interests you. Think about the testability of your hypothesis.
2. **Data collection.** You are responsible for collecting your data and using the appropriate field and lab methods.
3. **Data analysis.** You will need to decide how to analyze your data. There is a lab about data analysis, including simple statistics and graphing. Make sure that you are using the data to address your question.
4. **Critical thinking.** What might some of the difficulties be when analyzing your data? What factors may skew your interpretation? What larger factors may affect your observations and conclusions? What are some alternative explanations for your pattern? Be ready to do a literature search to help address some of these issues.

**Exercises**

1. What is your research question?
2. What observation did you make to lead to your research question?
3. What prior knowledge about ecology, behavior, … did you use to help inspire the question?
4. Is your question testable (if not, return to question 1)? Why or why not?
5. What is your hypothesis (written as a statement!)?
6. What results are possible and what do you predict will happen?
7. What are your independent and dependent variables?
8. Make a graphical illustration of your prediction.
9. Briefly describe your proposed methods? How to do you plan to collect data?
10. What equipment do you need to conduct your investigation?
11. Specifically, how will you analyze the data to answer your question?
12. Present your research plan to other groups. Give a concise pitch about what your question is and how you plan to answer it.
13. What feedback did you receive on your presentation?
14. What did you learn from other presentations that might help refine your plan?

Topic:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Research Question:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Hypothesis:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Prediction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Equipment Needed:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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