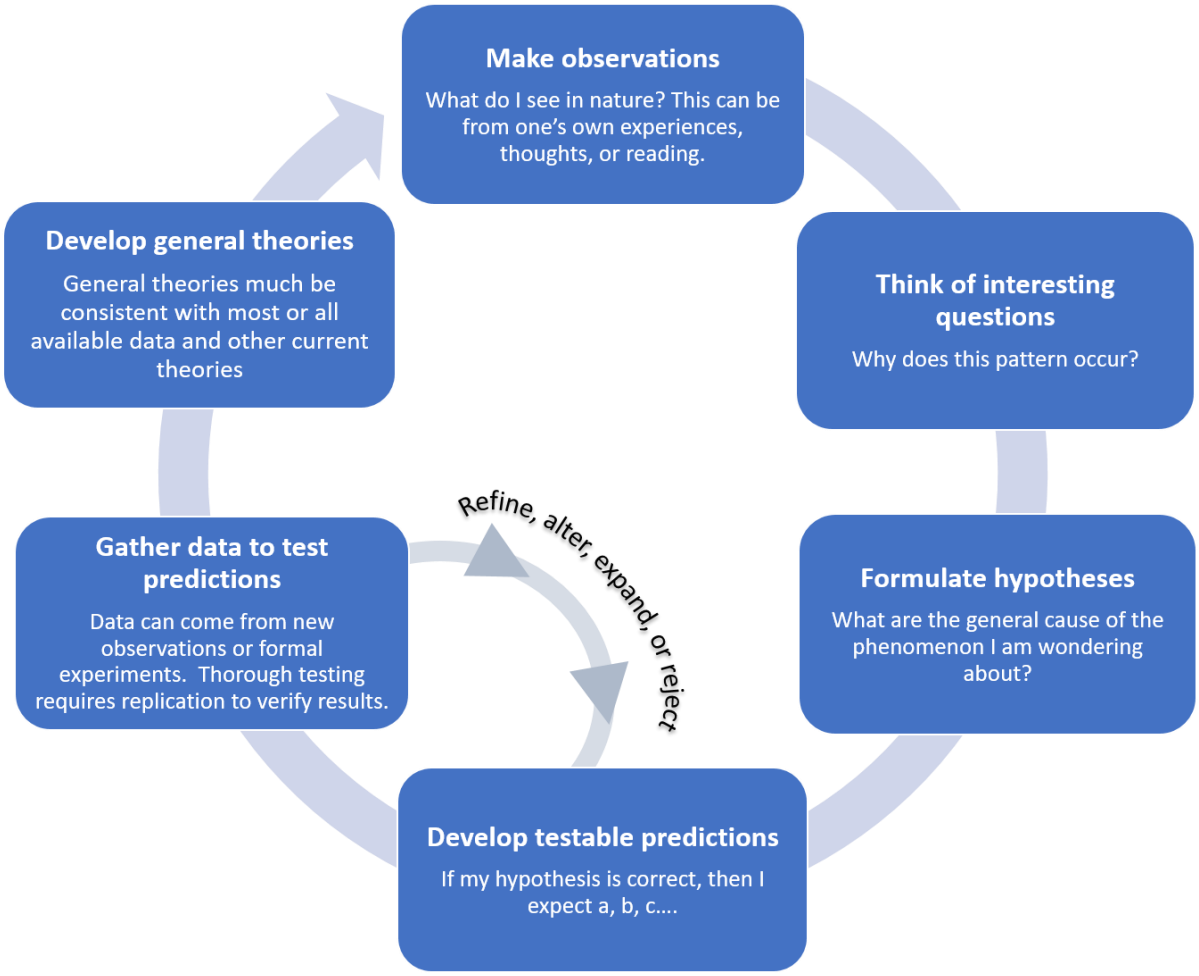
Making Observations: Student Handout

INTRODUCTION

Snapshot Wisconsin is a volunteer-based wildlife monitoring project at the Wisconsin Department of Natural Resources. Snapshot Wisconsin uses a statewide network of trail cameras to monitor wildlife year-round. This data can be used to understand animal behavior, estimate population sizes, and determine the ranges of various species.

To learn more about Wisconsin wildlife, researchers are actively making observations, thinking of interesting questions, and formulating hypotheses to test (see the below scientific method flow chat). This process can be messy and can often take years to complete! This lesson plan will start walking you through the first steps of the scientific method using Snapshot Wisconsin photos.



PROCEDURES AND QUESTIONS

Follow the instructions below and answer the questions in the spaces provided.

Part 1: Making Observations

The first step in scientific inquiry is often making observations of the natural world. Observations can inspire questions that lead to hypotheses (ideas or explanations that you can test through study and experimentation). To practice making observations, your instructor will show you a single photo from a Snapshot Wisconsin trail camera. In the time allotted, write down as many observations as you can about this photo. Be a detailed observer and make sure to look at the animals, their behaviors, and the environment.

1. Write down as many observations as you can about this photo.

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2. After you are finished making observations, write down some questions that you now have based on your observations. In other words, think about what you would like to learn more about as an ecologist in Wisconsin.

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Part 2: Observations Across Time

In this part of the activity, you will investigate how natural cycles affect the animals in Wisconsin. You will compare sets of photos from one camera taken at two different times of the year (summer and winter) and at two different times of day (day and night).

1. Your instructor will show you two sets of photos taken during the day and at night. Write down observations about each of the photo sets and any similarities or differences that you notice between the two time-periods.

Day (6 photos)
Night (6 photos)
Comparison

2. As a group, write down some questions inspired by your observations.

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3. Your instructor will show you two sets of photos from a single camera location taken during the summer and during the winter. Write down observations about each of the photo sets and any similarities or differences that you notice between the two seasons.

Summer (6 photos)
Winter (6 photos)
Comparison

4. As a group, write down some questions inspired by your observations.

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Part 3: Observations Across Space

Your teacher will show you two sets of photos from two different camera locations, one within the Northern Lakes and Forests ecoregion and one within the Southern Wisconsin Till Plains ecoregion

1. Read the descriptions of the two sites in the Ecoregion Appendix.
2. Write down observations about each of the photo sets and any similarities or differences that you notice between the two locations.

Northern Lakes and Forests (6 photos)
Southern Wisconsin Till Plains (6 photos)
Comparison

3. As a group, write down some questions inspired by your observations and any prior knowledge you have about ecology or animal behavior. Try to think about questions that can be answered through more observations and/or experiments and that will provide information about how animals interact with one another or the environment.

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Part 4: Making Observations in Science

Making observations and posing questions is at the foundation of scientific exploration. These observations and questions provide direction for a scientist's research. Answer the following questions about your experience making observations and asking questions.

1. Why do you think making observations is an important part of science?

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2. In your experience, how did making observations help you to ask questions?

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3. What prior knowledge about ecology or animal behavior did you use to help inspire your questions?

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4. Choose one of the questions that you came up with during this activity. If you were an ecologist in Wisconsin, how might you answer this question by gathering more data? You can use data from the trail cameras or other types of data that you collect in the field.

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5. Making observations and asking questions are two of the first steps of the process of scientific inquiry. What do you think the next steps in scientific inquiry are?

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