

Bio/Diversity Project  
Field Drawing

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Grade Level: 7<sup>th</sup> grade – 8<sup>th</sup> grade

<b>Common Core Standard:</b>	<p><i>Strand 1, Concept 1: Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources.</i></p> <ul style="list-style-type: none"> <li>• <i>PO 1. Formulate questions based on observations that lead to the development of a hypothesis. (See M07-S2C1-01)</i></li> <li>• <i>PO 2. Select appropriate resources for background information related to a question, for use in the design of a controlled investigation* (See W07-S3C6-01, R07-S3C1-06, and R07-S3C2-03)</i></li> </ul> <p><i>*Students will have the option of doing independent research to answer their question(s) in this activity (PO 2).</i></p>
<b>Content Objective:</b> Science	<ul style="list-style-type: none"> <li>• <i>Students will be able to make observations that will help them identify a species.</i></li> <li>• <i>Students will be able to use their observations to form questions and hypotheses about their surroundings.</i></li> </ul>
<b>Language Objective:</b> (Optional)	N/A

Vocabulary	Materials
<ul style="list-style-type: none"> <li>• Hypothesis</li> <li>• Identification</li> <li>• Observation</li> <li>• Scientific Process</li> </ul>	<ul style="list-style-type: none"> <li>• Colored pencils (preferred), markers or crayons</li> <li>• Student Handout – Field Drawing Worksheet</li> <li>• Magnifying glasses (to observe small insects)</li> <li>• Small cups (to hold insects)</li> </ul>

**Seasonality:** (If more specificity is required, please note date/time range under the season)

Highlight which season your lesson would be most suited to. When working with the natural world, it is important to keep this in mind for your planning! Some activities are possible for a brief window of time while others may be appropriate during any time of year.

Monsoons July-Sept.	Autumn Oct.-Nov.	Winter Dec.- Feb.	<b>Spring Mar.-Apr.</b>	Dry Summer May-June
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**Guiding Questions:**

- Why is it important for scientists to make observations?
- What kinds of observations can you make that will help you identify a species?
- What other ways can you make observations (other than sight)? Did you use any of these techniques while you were in the field?

**Engagement/Introductory Activity:**

- “Scientist of the Day” PowerPoint presentation (optional): Clyde William Tombaugh, to illustrate the importance of making observations and the role of art in science.
- Introduction will explain the first three steps of the scientific method, what each step entails, and its importance in the scientific process: observation, question, and hypothesis.

**Exploratory Activity:**

Students will have the opportunity to work outside (in the field). They will first take about 5 minutes in silence to survey the outside space and to locate a living organism (plant, animal, bird, insect). Then they will take another 5-10 minutes to draw their organism and record observations about it on the student handout, the Field Drawing Worksheet. This activity gives students an opportunity to explore and identify the types of observations that are most helpful in learning about their organism.

Useful observations:

1. Where the organism was found
2. Size
3. Shape
4. Color
5. Pattern/field markings
6. Location of eyes (usually an indication of predator/prey in animals)
7. Behavior
8. Interspecies relationships

**Explain:**

Students will share their observations with the class (either the whole class or in small groups). The instructor will then ask the students:

- Why are is it important for scientists to make observations?
- What kinds of observations can you make that will help you identify a species?
- What other ways can you make observations (other than sight)? Did you use any of these techniques while you were in the field?

The students will then be asked to come up with and to write down three questions about their organism on their worksheets (e.g. “What does it eat?”, “How fast can it travel?”, “Where does it live?”, etc.). It may be helpful to display the words ‘Who’, ‘What’, ‘Where’, ‘When’, ‘Why’, ‘How’ to help students come up with questions. Providing an example is helpful if students get stuck.

**Extension Activity/Questions:**

Students will do independent research to identify their species and to answer their questions about it.

**Evaluation Activity:**

The questions in the “Explain” section can either serve as discussion topics or as an assessment (or both)!