



Bioblitz Skillbuilders: Learning and applying the skills of a naturalist

Skillbuilder 5: ID with a Dichotomous Key

Key Question

How can we use observation and classification skills to identify real organisms?

Objective

Students will apply prior knowledge of observation and classification as they **practice** using a dichotomous key to identify trees.

Grades: 2-5

Time: 15-20 minutes

Location: Classroom

Materials

- Dichotomous key worksheet (attached)
- Computer with internet access
- Projector
- Tree Dichotomous key (for optional field extension)
 - To print (advanced):
http://ftof.freshfromflorida.com/tree_key2.php
http://www.clemson.edu/extfor/publications/bul117/leaf_key.htm#12
<http://alex.state.al.us/uploads/23957/A%20Key%20to%20Common%20Trees%20of%20Alabama.pdf>
 - For computer use (simple): <https://www.arborday.org/trees/whattree/>

Directions

Re-engage the diagram your class created the previous day. Ask a student to describe the process they went through to differentiate their groups. This diagram is an example of a **dichotomous key**, a tool that naturalists use to identify organisms based on defining, observable characteristics.

Explore/Explain: Pass out bioblitz images and dichotomous keys. Choose one of the photos and model to students how to use a dichotomous key to identify the organism, starting at Step 1.

Next, have students cut out bioblitz images. Working independently or in pairs, students can use the dichotomous keys to identify each species.

Elaborate/Evaluate: Review the species students identified. Ask students:

- What did you like about using a dichotomous key?
- What did you find challenging about using this tool?
- Were any of the species difficult to identify? Why?
- Were you surprised by the classification of any species (i.e. salamanders vs. lizards)?

Visit the Okaloosa projects on the iNaturalist website to explore where some of the species have been observed in the area and around the world. Show students the Okaloosa Bioblitz 2015-16 project.

iNaturalist projects:

- Okaloosa SCIENCE Bioblitz 2016: <http://www.inaturalist.org/projects/okaloosa-science-bioblitz-2016>
- Okaloosa SCIENCE Community Project: <http://www.inaturalist.org/projects/okaloosa-science-community-project>

Modification: Have students create their own dichotomous keys based on these or other photos from iNaturalist, or based on objects you have around the room. They can create a dichotomous key to the things in their lunchbox, or their desks. Then, they can challenge each other to identify the object.

Field Extension:

If time is available, show students a tree dichotomous key (see materials) using leaves/branches from around your schoolyard.

Next Generation Science Standards

Performance Expectations

- 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.
- 2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- 3-LS3-1: Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.
- 4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Science and Engineering Practices

- Asking Questions and Defining Problems
- Developing and Using Models
- Constructing Explanations and Designing Solutions



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