

Intro to Dichotomous Keys

INTRODUCTION: A dichotomous key is a tool that allows the user to determine the identity of items in the natural world, such as trees, wildflowers, mammals, reptiles, rocks, and fish. Keys consist of a series of choices that lead the user to the correct name of a given item.

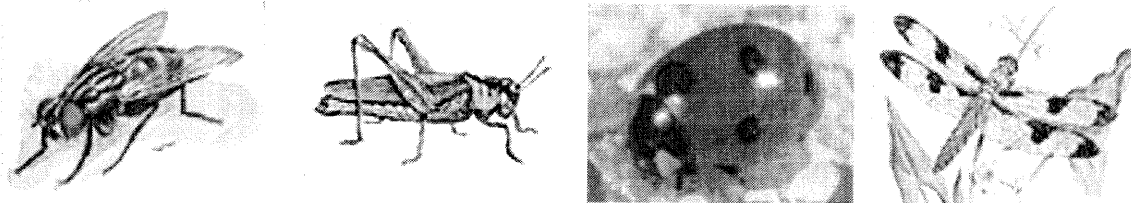
"Dichotomous" means "divided into two parts". Therefore, dichotomous keys always give two (or sometimes more) choices in each step.

PURPOSE: Students will learn skills in the areas of observing, comparing, communicating, ordering, and categorizing.

PROCEDURE:

In constructing keys, keep the following in mind:

- * Use constant characteristics rather than variable ones.
- * Use quantitative measurements rather than terms like "large" and "small".
- * Use characteristics that are generally available to the user of the key rather than seasonal characteristics or those seen only in the field.
- * Make the choice a positive one - something "is" instead of "is not".
- * If possible, start both choices of a pair with the same word.
- * If possible, start different pairs of choices with different words.
- * Precede the descriptive terms with the name of the part to which they apply.



Suppose you have four insects a ladybug, a housefly, a dragonfly and a grasshopper. After studying the insects, you might use wing covering, body shape, and where the wings point towards. To begin the key, you could start separating the four insects based on wing covering - "wings covered by exoskeleton" vs. "wings not covered by exoskeleton."

The first step in the key will be organized the following way:

1. a. wings covered by an exoskeleton

b. wings not covered by an exoskeleton

Next, the statements need to lead the observer to the next step to narrow the identification further:

1. a. wings covered by an exoskeletongo to step 2

b. wings not covered by an exoskeletongo to step 3

Step 2 needs to consist of a pair of statements that will allow for the identification of the ladybug and the grasshopper:

2. a. body has a round shapeladybug

b. body has an elongated shapegrasshopper

Step 3 needs to consist of a pair of statements that will allow for the identification of the housefly and dragonfly:

3. a. wings point out from the side of the bodydragonfly

b. wings point to the posterior of the bodyhousefly

Notice that there were four organisms to be identified and it only took three steps. There should be one less step than the total number of organisms to be identified in your dichotomous key.

When using a key, keep the following in mind:

- * Always read both choices, even if the first seems to be the logical one at first.
- * Be sure you understand the meaning of the terms involved. Do Not Guess.
- * When measurements are given, use a calibrated scale. Do Not Guess.
- * Since living things are always somewhat variable, do not base your conclusion on a single observation. Study several specimens to be sure your specimen is typical.
- * If the choice is not clear, for whatever reason, try both divisions. If you end up with two possible answers, read descriptions of the two choices to help you decide.

* Having arrived at an answer in a key, do not accept this as absolutely reliable. Check a description of the organism to see if it agrees with the unknown specimen. If not, an error has been

- Made somewhere, either in the key or in its use. The ultimate check of identifications is a comparison of the unknown with an authentically named "Type Specimen".

Key to the Vertebrate Classes - <http://pc65.frontier.osrhe.edu/hs/science/zochord.htm> - key

Key to the Insect Orders - <http://pc65.frontier.osrhe.edu/hs/science/binsect.htm>

A Fruit Key - <http://130.17.2.215/key/key.html>

Trees of the Pacific Northwest - <http://www.orst.edu/instruct/for241/index.html>

Several Other Keys - <http://hermes.mbl.edu/BiologicalBulletin/keys.html>