

Using a Dichotomous Key

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, butterflies, etc. 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 choices in each step.

Here is an example of a dichotomous key. Suppose you have four insects (ladybug, housefly, dragonfly, and a grasshopper). After studying the insects, you might use wing covering, body shape, and where the wings point towards as the characteristics you wish to base your key upon. To begin the key, you could start separating the four insects based on wing covering: "wings covered by exoskeleton" versus "wings not covered by exoskeleton". At the end of each statement you must direct the reader to the next appropriate question.



Dragonfly



Grasshopper



Ladybug



Housefly

- 1.a. wings covered by an exoskeleton.....go to step 2
- b. wings not covered by an exoskeleton.....go to step 3.

Next, you will use a pair of statements to separate each of the groups isolated by the above statements. If you isolate a subject you will give the name of the subject.

- 2.a. Body has a round shape.....ladybug
- b. Body has an elongated shape.....grasshopper
- 3.a.wings point out from the side of the body.....dragonfly
- b. wings point to the posterior of the body.....housefly

Notice there were 3 steps used to identify 4 organisms. There should be one fewer step than the number of organisms identified in any dichotomous key.

Hints for Using Dichotomous Keys

1. Always read both choices
2. Be sure you understand the meaning of terms involved. Do not guess.
3. When measurements are given, use a calibrated scale. Do not guess.
4. Study several specimen of living things to be sure your specimen is typical.
5. If the choice is not clear, try both divisions. If you end up with two possible answers, read descriptions of the two choices to help you decide.
6. 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. The ultimate check is with an authentically named "Type Specimen" (one found in an official collection like a natural science museum).