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**PART 2: Using and Constructing a Dichotomous Key – BACKGROUND**

Knowing the similarities and differences in organisms can help not only to figure out their phylogeny (evolutionary history), but also to help sort and identify them.

Suppose you find a large colorful wildflower while walking through the woods. Chances are the flower has already been named and classified, but how can you learn its identity?

As an aid to help others identify unknown organisms, biologists have developed classification keys.

Many classification keys have been developed to help identify wildflowers and many other kinds of plants and animals.

Although these keys may vary in purpose and complexity, they have certain features in common. These classification keys

are often called dichotomous keys. The word dichotomous comes from the word dichotomy, meaning “two opposite parts

or categories.” A dichotomous classification key presents the user with two opposite statements about some trait or

characteristic of an organism. By choosing the statement that best describes the unknown organism, the user is led to further pairs of

statements. By going from one set of statements to another, the name of the organism or its classification group is finally determined.

Do not confuse a dichotomous key with a phylogenetic tree.

A phylogenetic tree represents evolutionary relationships, whereas a dichotomous key does not. However, both analyze the similarities and differences and therefore help in the classification of organisms.

In this investigation, you will use a classification key to identify several salamanders (Part A). You will then write a classification key (Part B) for the Beasties you analyzed in Part 1.

