Creating a Dichotomous Key

For White Clover (*Trifolium repens*)

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 dichotomous key on Insects:

Suppose you have four insects (ladybug, dragonfly, housefly, and grasshopper)




After studying the insects, you decide to use wing covering, body shape, and direction wings point as the characteristics to base your key on.

To begin the key, you would start separating the four insects based on wing covering: "wings covered by a shell" vs. "wings not covered by a shell". At the end of each statement you must direct the reader to the next appropriate question.

1.a. wings are covered by shell	go to step 2
1.b. wings are not covered by a shell	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
2b. body has an elongated shape	grasshopper
3a. wings point out from the side of body	dragonfly
3b. wings point to the lower body	housefly

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

In this activity, you will be constructing a dichotomous key to help identify varying types of clover that may be found in and around your local area. The four main clover types are mentioned in the website, white clover, red clover, wood sorrel, and black medic. Sweet clover has been added for the purposes of this activity. Using the website, or any other source of information, look up each of these types of clover and begin making a list under each for observable characteristics of that plant.

Tips while conducting your research of clover types:

1. Use a constant characteristic, not one that is likely to change depending on water or sun availability, such as leaf size.
2. Use measurements rather than terms like "large" or "small"

3. Use characteristics that are generally available to the user of the key, rather than seasonal ones seen only in the field.
4. Make the choice positive. Use words like “is” instead of “is not”
5. Precede the descriptive term with the name of the part to which they apply

Once you are ready to create your key:

1. Identify the characteristics of each clover you think are most useful for grouping them into separate groups. (What things make them different?)
2. Classify each clover into at least 3 groups based on these characteristics
3. On a separate piece of paper, create a dichotomous key to match your classifications.

Research Notes: