Creating A Dichotomous Key: Pointers

When constructing a dichotomous key, one should keep certain things in mind.
• Use easily identifiable characteristics such as two valves verses one valve, instead of using variable characteristics such as color.
• Use quantitative measurements, such as 6" long or a size range of 3-6" long, rather than qualitative terms such as "large" or "tall".
• Use characteristics that are generally available in nature or to the user, rather than seasonal characteristics or those that can only be observed easily by scientists with special equipment.
• Each choice should have a positive response greater than a negative one. For instance, it "has" a characteristic rather than it "does not have" one.
• Whenever possible, begin both choices with the same word.
• Wherever applicable, begin different pairs of choices with different words.
• Always precede descriptive terms with the name of the part that you are describing.

While you are constructing the key, you must be as specific as possible so that the user does not become confused. If the two choices are not precise, a user can easily choose the wrong one, and may get the wrong classification or have to start over.

You must be alert to the wording of every choice. Doing so may save you from having to rewrite the entry in order to arrive at the correct answer. Be cautious and strive to get the most correct classifying characteristics possible.

Another helpful idea is to get several people to use the key to see if their answers match with yours. If all arrive at the same answer, it is safer to assume that the key was written correctly. If there is a discrepancy among the users, analyze the key together and compare your choices to see where the differences occurred. After you have discussed the reasons for the different choices, modify the key to adjust for any problems.

When using a key, the following may be helpful.
• Always read and consider both choices, even if the first one seems to be appropriate. Jumping to conclusions may lead to the wrong classification of the item.
• Always understand the meaning of the words used in each choice. Define the term. If you are not sure of the meaning, look it up in a dictionary. Never guess, as this could also lead to the wrong classification of the item.
• When there are measurements given in the choices, use the appropriate measuring tools or adjust them to match your own set of tools. For example, if a key measurement is given in centimeters but your ruler is divided into inches, convert the centimeter measurement into inches. Do not approximate and do not guess. Measure.
• If you are classifying a living or once-living thing, do not base your conclusion on a single observation. Living things almost always exhibit variability, so it is better to study many specimens in order to be sure that your results are representative of the majority.
• If you are left with two possible answers, read the description of both and decide which one seems to fit your specimen more precisely.
• When you have "keyed out" all of the shells, do not accept your answers to be correct. Check the description of each organism in order to see that it appropriately matches the organism. If it does not, then an error was made somewhere in key development.