Biology:

Dichotomous Key   **Primary Audience: 3rd – 5th**

Description: A get-to-know-each-other game for back-to-school. Students will also learn one way of organizing plants and animals.

Keywords: Dichotomous key, Classification

Concepts: A dichotomous key is a tool used to classify plants and animals through a series of questions regarding its characteristics. The user must follow a predetermined set of several pairs of options, and select one of the two options that best describe the plant or animal.

Instructions:

1. Ask all of the students to stand in a circle facing one another, and observe some of the characteristics of the rest of the group. Do many of the classmates have glasses? Red hair? Tennis shoes? Jeans?

2. Ask the students to decide on one characteristic that about half of them possess, for example wearing glasses or having brown hair, and separate themselves in that way. It's important to be specific about the details. If you say "brown hair," exactly how dark does it need to be? If you say "short hair" how many centimeters is short?

3. On the board, write down the first characteristic (brown hair) and the opposite (not brown hair.) Each category must be inclusive of everyone.

4. Now, each of the two groups must select another characteristic. They do not need to select the same one; the "brown hair" may choose "tennis shoes and not tennis shoes", while the "not brown hair" group may choose "glasses and no glasses."

5. Write these on the board under the first category. You should begin to see a triangle forming as the categories broaden. It may help to use lines to connect each level and keep the key organized.

6. Keep going until everyone is in his or her own category. On the board, you should have a key that could be used to classify any new additions to the group.

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7. Have the class use the key to add you, the principal or a late-arriving student to the system. If the categories are inclusive, you should be able to follow the key to the end and be in a "group" with one student.

8. Repeat the process from the beginning using different characteristics, and again, add yourself to the end. Did you end up with the same student? Where could something like this be useful? How do you think this process differs from real scientific classification systems?

Resources:
www.uwsp.edu/cnr/leaf/Tree**key**/tkframe.htm
http://nerds.unl.edu/Pages/preser/sec/skills/dkeys.html

Relevant Ohio Science Content Standards:
Life Science: 3.3, 2.4