Print Name _____ Period _____ Date _____

A.2.1. Lab 13: Construct and Use Dichotomous Keys

Teacher's Notes: Live organisms from freshwater, terrestrial or marine ecosystems would provide the useful specimens for this investigation. Incorporating this exercise with the Field study is ideal and will reinforce the students' use of the techniques in the field.
Another alternative is to do this exercise early in the course (during Topic 1) and use habitats that are close to the school grounds (if possible and available) which can be revisited later in the course when you do the Gross and Net Productivity labs, for example.
In this way students can build up a more complete and holistic view of the local environment that they live in.

If this is done near the beginning of the course then students can do some research on the organism's ecological niche. With this data, and data from other members of the class they could design food webs and chains and use these organisms in their closed ecosystem that is recommended in Topic 1. This can foster real understanding as they can observe the theoretical concepts of matter and energy flow in a system that they have developed.

In designing keys the students should be made aware of some of the basic ground rules:

1. Choose a feature or characteristic that can clearly be assessed as "yes" or "no". Ambiguous features are not useful.
2. Choose features that will divide the group of organisms approximately in half.
3. Always provide the opportunity to split the group into 2.
4. The key can be in either 2 forms:
    - A Flow chart with two branches leading from each option or
    - A sequence of descriptive statements with directions as to where to proceed depending on the yes or no answer.

Part 1: Use a Dichotomous Key

There are many good examples of keys to use to practice identifying organisms. The 2 exercises below are well-known and well-used for many years. The bicycle, lab hardware and flower examples will give practice in making a key.

Print Name _____ Period _____ Date _____

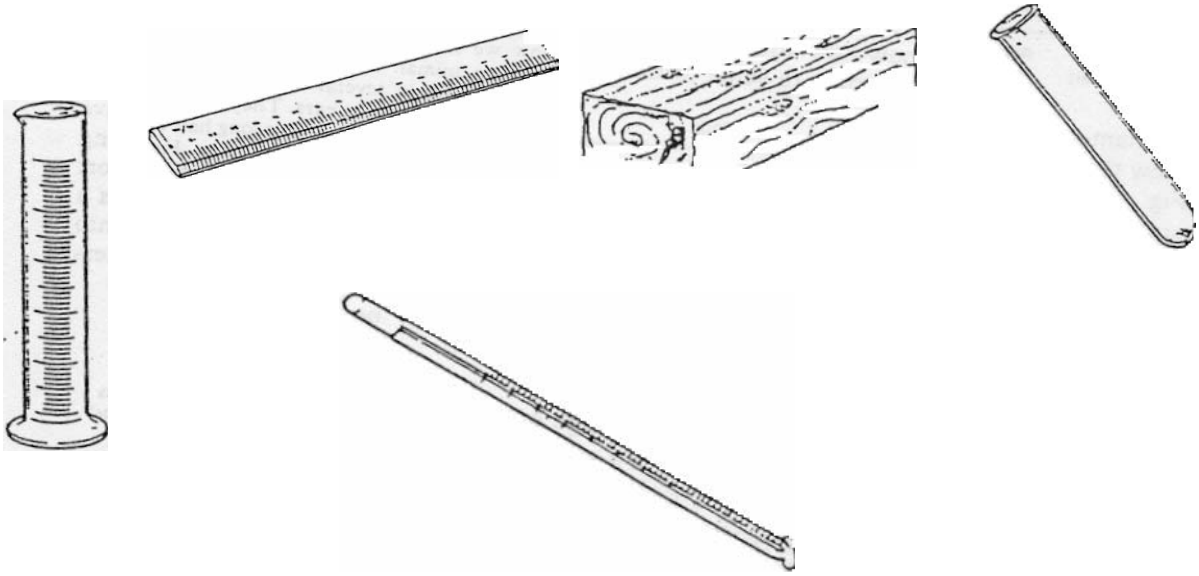
A.2.1. Lab 13: Construct and Use Dichotomous Keys

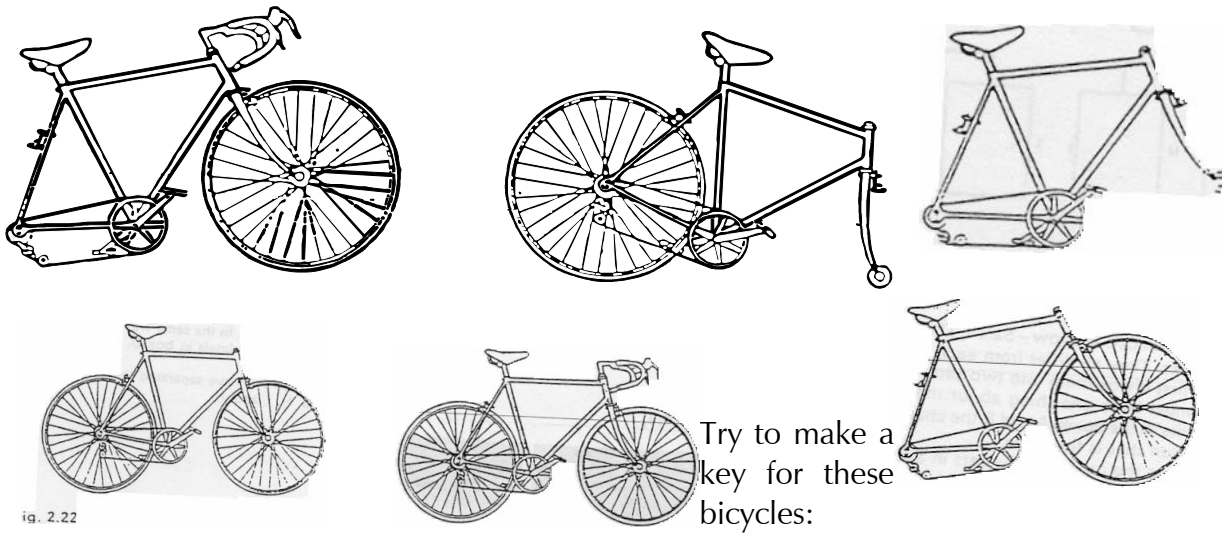
Bicycle Key	Lab Hardware Key	Flower Key

Print Name _____ Period _____ Date _____

A.2.1. Lab 13: Construct and Use Dichotomous Keys

Try your hand at making up a key for your own use. The diagram below shows some objects you use everyday. Try to make up a key for them.





Try to make a key for these bicycles:

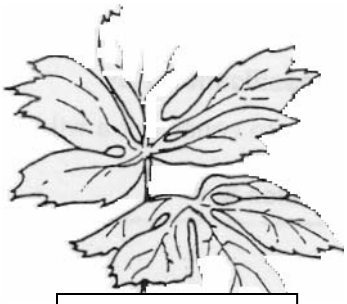
Print Name _____ Period _____ Date _____

A.2.1. Lab 13: Construct and Use Dichotomous Keys

Part 2:

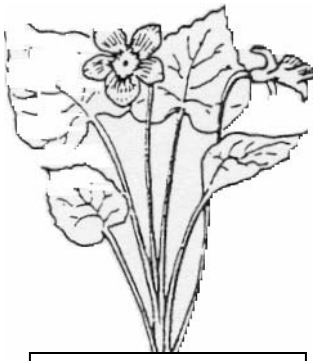
Below are some common North American wildflowers. As you study the drawings of various flowers, note different characteristics in flower shape, number of petals, and leaf number and shape. .Design a Dichotomous key for these flowers on the following page.

Large-flowered trillium

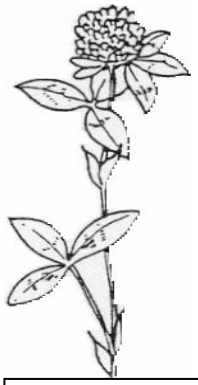


May Apple

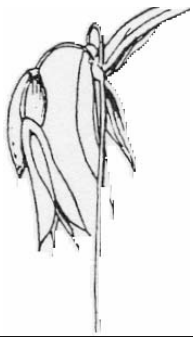
Broad-leaf arrowhead



Large Flowered Bellwort



Red Clover



Common blue violet