How Does a Dichotomous Key Work?

Directed Inquiry

Objective
• Follow directions for an investigation to make and use a dichotomous key.

Inquiry Skills
• Compare
• Classify/Order
• Communicate
• Infer

Observation:
• Use the dichotomous key in front of you to classify the food in the plate:
How Does a Dichotomous Key Work?

Follow This Procedure

1. Think of common items you can classify into categories by their characteristics. Some examples include food, books, sports equipment, and television shows. Choose a category. Then write a list of eight items that belong in this category.

2. Now think of a question that divides your items into two groups. Write the question at the first branch of your key. Write the items that represent the two different answers on the key in two different colors.

3. Write another question for each group of answers that will divide that group into two smaller groups. Write the names of the items that represent the four different answers on the key in four different colors.

4. Continue to write a question for each group until all the items are accounted for. Make a new copy of your key that contains the questions but not the answers. Give a partner the key with the questions and the list of the eight items in your group. Secretly write down one of the items from your list on a piece of paper. Fold it and do not show it to your partner.

Analyze Your Results

5. Have your partner use the dichotomous key to ask your questions about your secret object. If your partner answers yes to each question, have your partner guess which item you chose. If your partner answers no to each question, have your partner guess which item you chose.

6. Have your partner use the dichotomous key to ask your partner questions about your partner’s secret object. If your partner answers yes to each question, have your partner guess which item your partner chose. If your partner answers no to each question, have your partner guess which item your partner chose.

7. Why is it necessary to write enough questions to lead to only one answer at the very end of each chain?

8. How could you revise your key to make it more useful?

Materials
- Blank dichotomous key
- Pen or pencil

- (Image of a dichotomous key diagram)