Whose shoe is that?

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_

**Problem**: How can a group of shoes be classified according to scientific methods?

**Hypothesis:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Materials:** Student shoes, pencil and paper

**Shoe Characteristics:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Procedure**:

1. After being put into groups, each student in the group is to remove his/her right shoe and place it on the table.
2. Make a list of at least 10 characteristics of the shoes that could be used to divide them into groups
3. Choose one major characteristic of the shoes and use it to divide the shoes into two groups.
4. Place the shoes into these two groups and begin to fill in the classification web.
5. Work only with the shoes in one group. Divide this "kingdom" into two smaller groups based on a new characteristic. (For example divide brown shoes into those with laces and those with no laces.) Be sure to write your characteristic in the web.
6. Continue to divide these shoes into subgroups until you are left with only one shoe in the group. At this point, write the last characteristic and the name of the person who owns the shoe on the web.
7. Repeat the process until you have isolated and identified every individual shoe.
8. Once your classification web is completed use it to construct a dichotomous key to be used to return the shoes to their owner.
9. When your group has completed their dichotomous key you must trade with another group and verify that it works by returning the shoes to their owners by using their key. Make sure to sign their paper showing that it worked

**Classification Web**

All Shoes

**Dichotomous Key**

**Conclusion**

Why is there a whole science of classification called Taxonomy? (answer must contain at least 4 sentences)

How did you act as a scientist in this activity? (Incorporate at least 4 ideas)

**Extra Credit**

There is more than one way to correctly classify object. On a sperate sheet of paper complete another classification system for the shoes like you did in the original procedure. Make sure you use a **COMPLETELY** different method to divide out the shoes. Fill in the chart at the right with your new data. NOT AVAILABLE FOR LATE WORK!!!