

Dichotomous Keys

**INTRODUCTION:** A dichotomous key is a tool that allows the user to determine the identity of items in the natural world, such as trees, wildflowers, mammals, reptiles, rocks, and fish. Keys consist of a series of choices that lead the user to the correct name of a given item. "Dichotomous" means "divided into two parts". Therefore, dichotomous keys always give two choices in each step.

**PURPOSE:** Students will learn skills in the areas of observing, comparing, communicating, ordering, and categorizing.

**PROCEDURE:**

Suppose you have four insects: a ladybug, a housefly, a dragonfly, and a grasshopper. After studying the insects, you might use wing covering, body shape, and where the wings point towards. To begin the key, you could start separating the four insects based on wing covering - "wings covered by exoskeleton" vs. "wings not covered by exoskeleton." Identify the following organisms using the Dichotomous Key below.

|  |   |  |   |
|--|---|--|---|
| Identification:  |   |  |   |
|    |  |    |  |
| <p><b>The first step in the key will be organized the following way:</b></p> <ol style="list-style-type: none"> <li>1. a. wings covered by an exoskeleton</li> <li>b. wings not covered by an exoskeleton</li> </ol> <p><b>Next, the statements need to lead the observer to the next step to narrow the identification further:</b></p> <ol style="list-style-type: none"> <li>1. a. wings covered by an exoskeleton .....go to step 2</li> <li>b. wings not covered by an exoskeleton .....go to step 3</li> </ol>   |   | <p><b>Step 2 needs to consist of a pair of statements that will allow for the identification of the ladybug and the grasshopper:</b></p> <ol style="list-style-type: none"> <li>2. a. body has a round shape .....ladybug</li> <li>b. body has an elongated shape .....grasshopper</li> </ol> <p><b>Step 3 needs to consist of a pair of statements that will allow for the identification of the housefly and dragonfly:</b></p> <ol style="list-style-type: none"> <li>3. a. wings point out from the side of the body .....dragonfly</li> <li>b. wings point to the posterior of the body .....housefly</li> </ol>  |   |
| <p>Notice that there were four organisms to be identified and it only took three steps. There should be one less step than the total number of organisms to be identified in your dichotomous key.</p> <p><u>When using a key, keep the following in mind:</u></p> <ol style="list-style-type: none"> <li>1. Always read both choices, even if the first seems to be the logical one at first.</li> <li>2. Be sure you understand the meaning of the terms involved. Do Not Guess.</li> <li>3. When measurements are given, use a calibrated scale. Do Not Guess.</li> </ol> |   | <ol style="list-style-type: none"> <li>4. Since living things are always somewhat variable, do not base your conclusion on a single observation. Study several specimens to be sure your specimen is typical.</li> <li>5. If the choice is not clear, for whatever reason, try both divisions. If you end up with two possible answers, read descriptions of the two choices to help you decide.</li> <li>6. Having arrived at an answer in a key, do not accept this as absolutely reliable. Check a description of the organism to see if it agrees with the unknown specimen. If not, an error has been made somewhere, either in the key or in its use. The ultimate check of identifications is a comparison of the unknown with an authentically named "Type Specimen".</li> </ol> |   |

Wacky People Key: Name each person using the key

- 1a Two feet 2
- 1b Some other number of feet 3
- 2a Does not look at all human 4
- 2b Looks a lot like a human 5
- 3a One leg 6
- 3b Three or four legs 7
- 4a Fly-like Mosk Cara 8
- 4b Not fly-like Rita Nita 9
- 5a Seems to be a girl
- 5b Not a girl
- 6a Leg is curled, two feet Ru-ela.Brella
- 6b Leg is straight, one foot Giggles
- 7a Three legs 10
- 7b Four legs 11
- 8a Has webbed feet Hex Oculate
- 8b Clawed feet 12
- 9a Curly hair, no toes Lugio Wirum
- 9b Wiggly looking mouth, three toes on feet C. Nile
- 10a Very long nose, open mouth Elle E. Funk
- 10b Some other appearance 13
- 11a Has duck bill, two pinchers Tri D. Duckt
- 11b No arms or pinchers 14
- 12a Has ears, tail, and beak Grif Leon
- 12b Four eyes on stalks Eggur Ondy
- 13a One eye, webbed feet Cue Kide
- 13b Four stalked eyes, four pinchers Quadrumnox
- 14a Three toed feet, nose like a flower Tunia petalos
- 14b Spider-like, has spots Patterned mulywumpus

WACKY PEOPLE

