Dichotomous Keys

Dichotomous Key Example
Let’s imagine we want to create a dichotomous key of fish found in a pond near New York. We catch four different specimens: A, B, C, and D. We look very closely at our fish and use external characters to differentiate between them. We might construct a table of characters that looks like this:

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Color</th>
<th>Shape</th>
<th>Eye Size</th>
<th>Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>gray</td>
<td>round</td>
<td>small</td>
<td>absent</td>
</tr>
<tr>
<td>B</td>
<td>green</td>
<td>round</td>
<td>large</td>
<td>present</td>
</tr>
<tr>
<td>C</td>
<td>gray</td>
<td>flat</td>
<td>small</td>
<td>absent</td>
</tr>
<tr>
<td>D</td>
<td>gray</td>
<td>flat</td>
<td>small</td>
<td>present</td>
</tr>
</tbody>
</table>

This table becomes the basis for our key. The key might look like this:

1. Body color gray
   - Go to number 2.
2. Body color green
   - Your fish is Specimen B.
3. Body shape round
   - Your fish is Specimen A.
   - Go to number 3.
4. Body shape not round
   - Your fish is Specimen D.
5. Scales present
   - Your fish is Specimen D.
6. Scales not present
   - Your fish is Specimen C.

Create a Key
Students will enjoy working in pairs or groups of three to create their own keys from specimens they have collected themselves, such as leaves, shells, or feathers. If it is not possible to use students’ own specimens, you can provide some, such as fruit, flowers, or nuts. Students should:

- Look closely for distinguishing features (examples: shape, color, texture, edges)
- List these features along the top of a table
- Number all specimens
- Write the specimen numbers on the rows of the table
- Fill in the blanks of the table by closely observing the specimens
- Use the table to construct a key

After students have completed their keys, ask groups to switch specimens and keys. Are they able to identify the specimens using the keys their peers created?