

## Investigation 3.B: Creating a Dichotomous Key Answer Key

### Answers to Analysis Questions

It is important that at each step choices are mutually exclusive; for example, choosing between broad leaves and needles.

1. You will compare your key to those of other students; differences in the keys may result from different characteristics used to classify the trees, the order in which you placed these characteristics in your key, or even differing opinions on whether or not a tree possesses a particular characteristic.
2. Problems or errors will arise when general, subjective observations rather than specific, objective observations are used. (For example: “needles attached to the stem in groups” is not as clear as “needles attached to the stem in pairs.”)
3. Likely responses are: colour of leaves (unless using variegated plants, or species that have leaves other than green; for example, wolf willow); or any other characteristic common to all plants to be identified.

### Answers to Conclusion Question

4. Dichotomous keys must have two mutually exclusive choices at each step. By definition “dichotomous” means “divided into two parts.” Having only two choices that are mutually exclusive ensures that each step throughout the key will lead the user, with confidence, to the correct identification of the organism, assuming that the user understands the vocabulary used in the key.

### Answers to Extension Question

5. You may find the following web sites useful for research:  
<http://www.invasiveplants.ab.ca/photogallery.htm>  
<http://www.invasivespecies.gov/profiles/main.shtml>  
<http://www.agf.gov.bc.ca/cropprot/weedguid/weedindx.htm>

### Example Key:

- 1a. round stem (go to 2)
- 1b. square stem (with 4 sides); purple loosestrife
- 2a. toothed leaves (go to 3)
- 2b. leaves not toothed (go to 4)
- 3a. flowers up the stem; creeping bell flower
- 3b. flower at terminal end of the stem; ox-eye daisy
- 4a. button shaped flowers, yellow; common tansy
- 4b. other (go to 5)
- 5a. leaves long, thin, and flat; reed canary grass
- 5b. other (go to 6)
- 6a. leaves with 2–5 veins and 5 cm long; leaves opposite; common soapwort