

Kinesthetic Dichotomous Key

OVERVIEW: Students will interactively learn to use a dichotomous key to identify selected plants of the cedar glade.

GRADE LEVEL: 5 – 8

TIME: 1 class period

SETTING: Classroom

OBJECTIVES: Two groups of students with five volunteers per group will compete to correctly identify the unknown flower assigned to each volunteer. Each group will have photo Flower Cards and a Dichotomous Key. To identify each flower, group members will use the Key and Cards to direct their volunteers through labeled stations in the classroom that correspond with the Key.

LEARNING STANDARDS: Science CLE 3210.5.6

MATERIALS:

- 1 set of Cedar Glade Plant Photograph Cards – see appendix, or for an electronic copy, visit the Center for Cedar Glade Studies website link, Teaching from the Glades: www.mtsu.edu/~gladectr
- Select these 10 plants from the 28 plants provided:

Price’s Wood Sorrel	Missouri Evening Primrose
Sunnybell Lily	Tennessee Coneflower
Blue-Eyed Grass	Gattinger’s Lobelia
Pyne’s Ground Plum	Nashville Breadroot
Gattinger’s Prairie Clover	Glade Mustard
- Plant Description Cards – see appendix, select the 10 plant descriptions for the 10 plants listed above
- Dichotomous Keys – 1 key for each student or student team
- Station Cards (8 ½ x 11 papers with numbers 1a and 1b through 9a and 9b on separate pieces of paper)
- A class set of *Flatrock Glades: Cedar Glade Plant Guide for Elementary Students*; to obtain a class set, please email: gladecenter@mtsu.edu

PREPARATION:

1. Using the station cards, make 9 stations around the room. Space out as much as possible but keep number sets, such as 1a and 1b, 2a and 2b, etc... in proximity to each other.

2. Make Cedar Glade Plant Cards – cut out and mount plant photograph cards on 4 x 6 index cards; laminate for durability
3. Make Plant Description Cards – the Plant Cards are numbered to correlate to the Plant Description Card (see the number in parentheses next to the Latin name for the plant); mount on 4 x 6 index cards; laminate for durability
4. Make Dichotomous Keys - 1 per student or student team

INSTRUCTIONS:

1. Ask for ten volunteers. The volunteers will be guided by students to the different stations that match their flower's description on the Dichotomous Key.
2. The teacher will distribute a Cedar Glade Photograph Card to each volunteer.
3. Students sitting in their seats will each be given a copy of the Dichotomous Key.
4. One at a time, a student plant volunteer will be directed by the class through the dichotomous key by moving to the different stations posted in the room.
5. Students in the class will take turns reading the description and choices to the plant volunteer. The plant volunteer will move to where they think they should, based on the choices given. For example, if Joshua has a plant with a yellow flower and a red center, he will listen for the two choices for station 1a and 1b. To begin, 1a states if at least one flower is yellow to go to 2; 1b states if the flower is NOT yellow to go to 5. Since his flower is yellow, he will move to station 2a and listen to the descriptions and continue until he ends up at a station that identifies his plant name.
6. This works well if student teams are formed between a plant volunteer and Dichotomous Key readers. Taking turns, teams read the choices on the key to their plant volunteer, it is up to the plant volunteer to figure out where they need to go.
7. After all 10 plant volunteers have moved through the key, distribute the plant description cards to the plant volunteers. Were their plants correctly identified? Why or why not? What terms or statements were misleading? What features were missing from the plant photograph that would have made identification easier to determine?
8. Instruct students to revise the Dichotomous Key or generate a new key based on what they know. Distribute the Cedar Glade Plant Guide to assist students in their revisions.

CEDAR GLADE PLANT DICHOTOMOUS KEY

- 1a) At least one flower is yellow in color.....go to 2
 1b) Flowers are not yellow in color.....go to 5
- 2a) Flower petals appear to be five in number.....go to 3
 2b) Flower petals do not appear five in number.....go to 4
- 3a) Has red spots at inside base of the petals.....Price’s Wood Sorrel
 3b) Does not have red spots at base of petals.....Missouri Evening Primrose
- 4a) Flower appears to have 4 petals.....Glade Mustard
 4b) Flower does not have 4 petals.....Sunnybell Lily
- 5a) Flower is daisy-like in appearance.....Tennessee Coneflower
 5b) Not daisy-like in appearance.....go to 6
- 6a) Flower appears to have 5 petals.....go to 7
 6b) Flower does not appear to have 5 petals.....go to 8
- 7a) Has pale blue petals and yellow center.....Blue-eyed Grass
 7b) Flower has 3 lobes, does not have yellow center.....Gattinger’s *Lobelia*
- 8a) Flower is lavender pink in color.....Pyne’s Ground Plum
 8b) Flower is not lavender pink in color.....go to 9
- 9a) Dark purple-blue color flower.....Nashville Breadroot
 9b) Bright pink flower with needle-like leaves.....Gattinger’s Prairie Clover

(This simple key was developed from descriptions from the *Flatrock Plant Guide for Elementary Students* – using flower photographs provided with the Cedar Glade Activity book)

