BIO FAX!

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Wildflower Identification Kit

Student Laboratory Kit

Introduction

Wildflowers are everywhere! They come in every size, shape, and color. How are various groups related? How are they identified?

Concepts

- Plant identification
- Plant classification
- Dichotomous keys

Background

Wildflowers are one of the most beautiful aspects of the natural landscape. They are found in every part of the United States in areas as diverse as woodlands, wetlands, beaches, deserts and mountain slopes. In fact, there are more than 15,000 recognized species of native plants in the United States and Canada. Many new species are discovered every year.

Some wildflowers are very rare and are even protected by law. When viewing flowers in the wild, always remember never to pick or walk on the flowers. The best way to capture the beauty of wildflowers is by taking photographs. Photographs are also valuable tools to identify the structures of a flower.

With such a wide array of flowers in the wild, how are they classified? Wildflowers are composed of many unique structures. The charts on the following page illustrate some of the structures and botanical terms that are used to classify the flowers and leaves of wildflowers.

Wildflowers are generally classified using dichotomous keys. A dichotomous key is a flow chart that helps narrow down the species, trait by trait. The first type of key that will be used in this activity is a generic key that will help you identify the names of the unknown wildflowers to be identified. Characteristics such as flower color, number of flowers and other easily recognizable traits will be used. Once the names of the wildflowers are identified, a more comprehensive guide will be used to further identify some of the wildflowers' more specialized traits (such as those shown in the Botanical Terms Charts).

Botanical Terms Chart

Flower Terms

anther — pollen-bearing part of stamen

calyx — outer part of flower, composed of sepals, usually green

corolla — part of flower between calyx and stamens, composed of petals

filament — stem of stamen

head — compact mass of small stemless flower

involucre — leafy growth encircling head or cluster

irregular (flower) — having petals of different sizes and shapes

ovary — lower, enlarged part of pistil

inferior (ovary) — ovary united with the calix

superior (ovary) — ovary having calyx and corolla inserted at its base

petal — one division of corolla

pistil — seed-bearing central part of flower

polypetalous — having separate petals

regular — having petals all about the same size and shape

sepal — one division of calyx

stamen — pollen-bearing part, composed of anther and filament

stigma — sticky part of pistil which receives pollen

style — neck of pistil, between stigma and ovary

sympetalous — having petals more or less united (one cannot be removed without tearing others)

umbel — cluster with stems arising from one point

Leaf Terms

alternate — coming out singly along stem on alternate sides

basal — growing on the ground at foot of plant

compound — made up of leaflets, starts at bud

entire — margin without teeth or lobes

leaflet — leaf-like part of a compound leaf

lobed — with deeply indented margin

net-veined — veins branching from midrib

opposite — having two leaves coming at the same level

palmately compound — having leaflets coming from one point

parallel veins — veins running side by side from base to tip of leaf

perfoliate — having base surrounding stem

pinnately compound — having leaflets not all from one point

pubescent — covered with soft hair

sessile — without a stem

simple — not made up of leaflets

stipule — small leaf-like growth at base of stem

toothed — margin with edge like a saw

whorled — having several leaves from one level on stem

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Materials

Unknown preserved wildflower samples, 9

Wildflower Identification Worksheet

Wildflower Name Identification Key

Wildflower Guide

Part I. Identifying Wildflowers

1. Obtain one preserved wildflower sample.
2. Record the characteristics (such as petal color, shape, size, etc.) of the wildflower sample in the Wildflower Identification Data Table, Part I in the space corresponding to the sample number.
3. Use the Wildflower Name Identification Key to determine the common name of the wildflower sample.
4. When looking at the key, multiple options are listed at each numbered step. For example:

   1a. Flowers are yellow.....Go to Step 2

   1b. Flowers are not yellow.....Go to Step 3

   Choose only one of the options at each step (i.e., if the flowers of your sample are white, continue on to step 3). Work your way through the key until the wildflower has been identified.
5. Record the name of the wildflower sample in the Wildflower Identification Data Table, Part I in the space provided.
6. Repeat steps 1–5 for the remaining eight wildflower samples.

Part II. Wildflower Features and Structures

7. Obtain a Wildflower Guide and a known wildflower sample.
8. Use the Wildflower Guide and "work backwards" through the key starting with the name of the wildflower. Do this by looking in the Wildflower Guide index for the name of the wildflower sample.
9. Find the corresponding page number for the wildflower sample.
10. Work backwards through the guide by looking at the identifying feature box before the wildflower's name. Record the identifying feature and description in the Wildflower Data Table, Part II.
11. Find the previous identifying feature box by looking at the previous few pages. Once the identifying feature box has been found, record the feature and description in the Data Table.
12. Continue on recording the identifying features and descriptions until the original feature in the wildflower guide has been reached.
13. Repeat steps 7–12 for the remaining wildflower samples.

Name: _____

Wildflower Identification Data Tables

Part I

Wildflower Sample Number	Characteristics	Name
1		
2		
3		
4		
5		
6		
7		
8		
9		

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Name: _____

Part II

Wildflower Sample Number	Wildflower Name	Identifying Features
1		
2		
3		
4		
5		
6		
7		
8		
9		

Wildflower Name Identification Key

1a. Flowers are yellow 2

1b. Flowers are not yellow 3

2a. Individual petals are large (over 3/8″ in length) 4

2b. Individual petals are small (under 3/8″ in length) 5

3a. Flowers are red . . . . . Indian Paintbrush

3b. Flowers are not red 6

4a. Simple, 5-part, glossy flower, numerous stamens and pistils . . . . . Buttercup

4b. Cluster of upright flowers . . . . . Yellow Lupine

5a. Flowers droop downwards at end of stalk . . . . . Lily of the Valley

5b. 3-part leaves, slender flowers . . . . . Yellow Sweet Clover

6a. Flowers are white or off-white 7

6b. Flowers are not white or off-white 8

7a. Many white ray flowers, disk flowers yellow . . . . . Daisy

7b. Rounded off-white, petal-like flower with off-white sepals . . . . . Anenome

8a. Flower is blue, hairy leaves and stalk . . . . . Forget-Me-Nots

8b. Flower petals are turned back . . . . . Shooting Star