

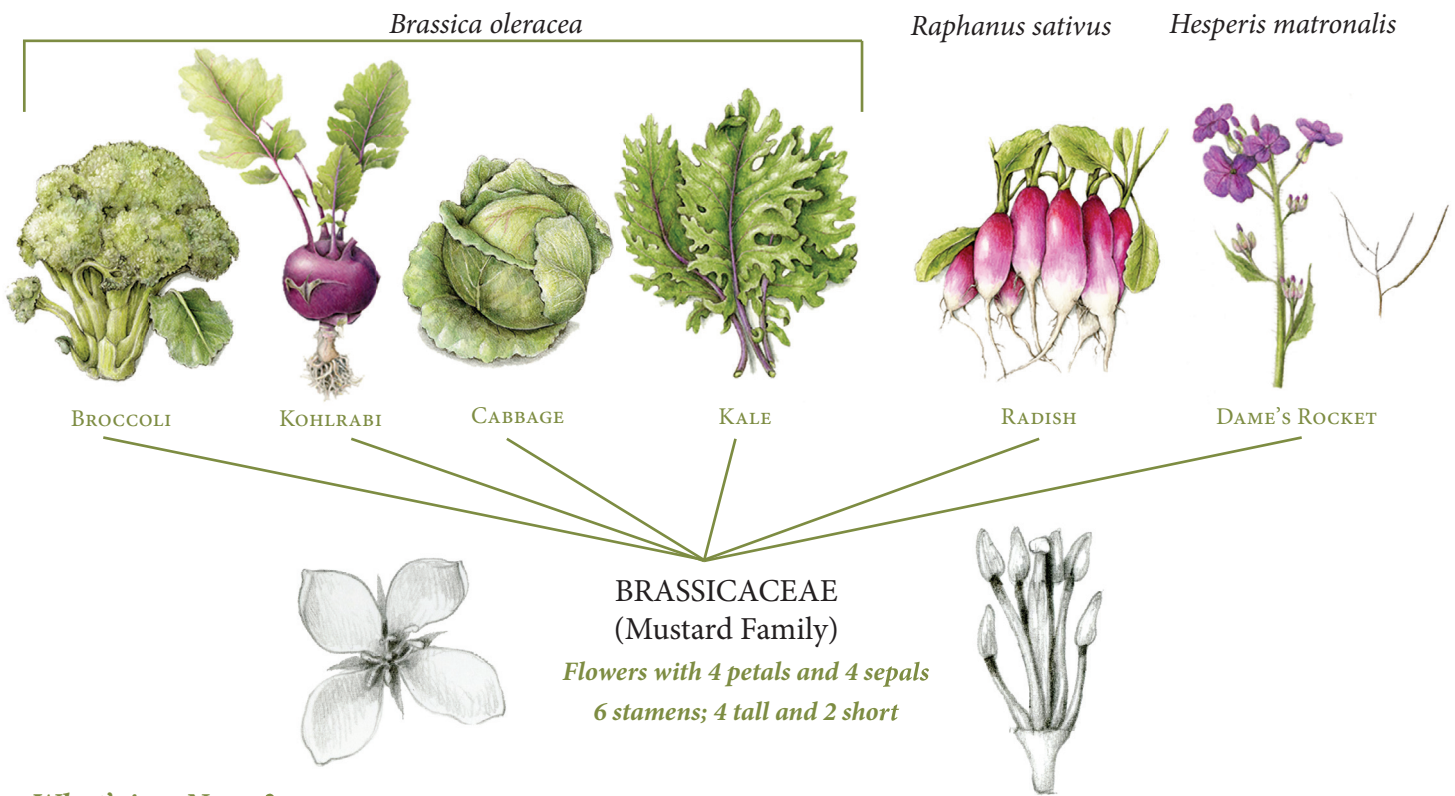
IDENTIFYING PLANT FAMILIES

LESSON 8

BOTANICAL SCAVENGER HUNT FOR ARTISTS

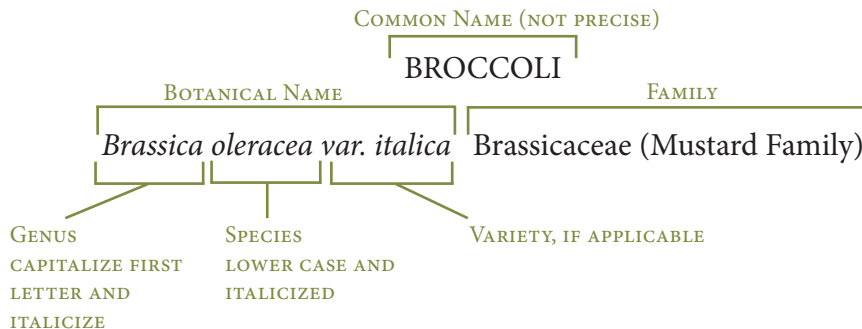
As botanical artists, we encounter the scientific or botanical names of plants. They are almost always intimidating Latin names that I, for one, cannot pronounce. The objective of this lesson is to become aware of plants with similar characteristics or patterns and learn to organize them by plant family, as botanists do every day. We will describe plant families with our drawings, rather than with paragraphs of detailed scientific language. As visual people, describing plant families with drawings is fun and empowering.

Broccoli, kohlrabi, cabbage and kale originally came from the same plant in the mustard family (Brassicaceae). Over time, certain features of that original plant have been bred to emphasize various aspects. Visually compare the similarities of a kale leaf and a broccoli leaf. Cook the leaves to compare the taste. Note that plants in the same family share similar properties, patterns, tastes and uses.



What's in a Name?

Together, genus and species make a complete plant name. A plant's genus is likened to a person's family name, and the plant's species is like a person's first name. Use this diagram to understand how to write a plant's botanical name:



IDENTIFYING PLANT FAMILIES
LESSON 8

An understanding of plants that are similar and perhaps in the same family can take years to develop. Below are drawings gathered out of my archives from various years showing what I now know is the Aster Family. Notice the similarities and differences.

ASTERACEAE - the Aster Family
The largest plant family with over 23,000 species.



ENGLISH DAISY
Bellis perennis



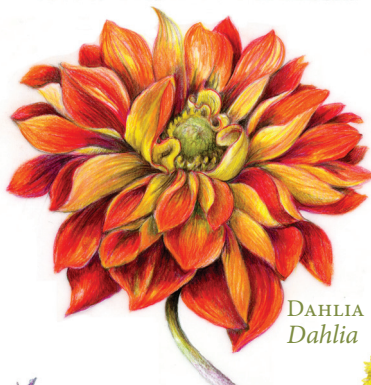
JERUSALEM ARTICHOKE
Helianthus tuberosus



MARGUERITE DAISY
Argyranthemum frutescens



PURPLE CONEFLOWER
Echinacea purpurea



DAHLIA
Dahlia



NEW ENGLAND BLAZING STAR
Liatris scariosa



SINGLE BURDOCK
DISC FLOWER



BURDOCK
Arctium minus



COMPOSITE FLOWER HEAD,
DISC FLOWER, RAY FLOWER
SEASIDE GOLDENROD
Solidago sempervirens

The Aster family is quite large and has many "sub-families" which categorize the plant distinctions even more. However, plants in the Aster Family usually have composite flowerheads made up of small disk flowers in the center that create the seeds and large outer petals of ray flowers.

IDENTIFYING PLANT FAMILIES LESSON 8

SCAVENGER HUNT REQUIREMENTS

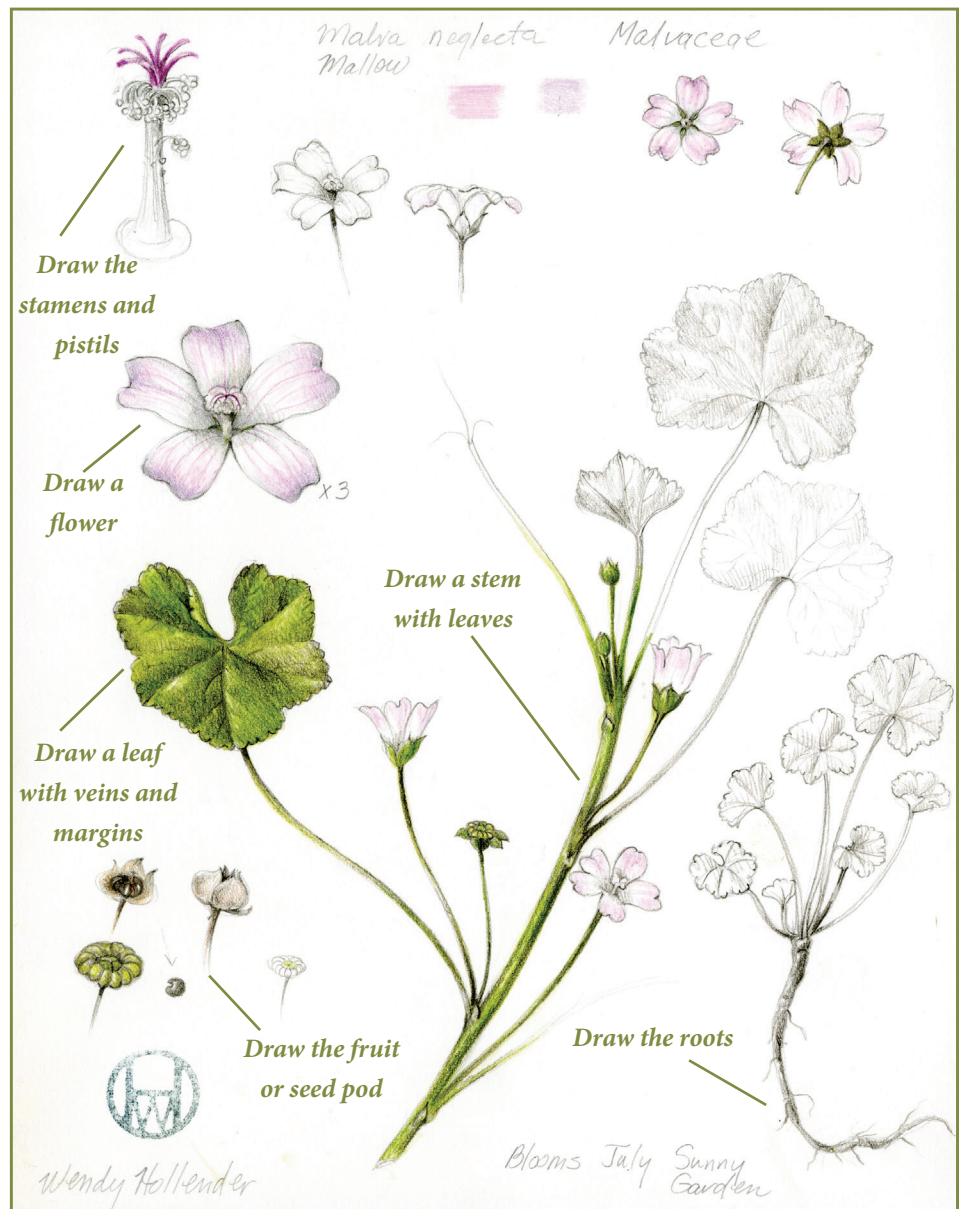
The challenge in this lesson is to locate and draw plant specimens based on the classification clues provided. The ability to identify a plant's family is the first step in understanding the structure and uses of each plant. Plants adapt to variations in light, water and soil. However, only the leaves and stems will vary depending on these growing conditions. The flowers will always stay the same. Therefore, plant families are determined by flowers and reproductive parts. The patterns created by petals, sepals, stamens and pistils determine the plant family and the individual species. In the pages that follow, characteristics of nine basic plant families are identified. In these nine families combined there are over 75,000 species.

STEP 1: Find a plant in bloom.

STEP 2: Use the Plant Families Field Guide (p. 37 & 38) and worksheet (p. 39) to identify your plant's family.

STEP 3: Create a drawing that features the unique characteristics you used to classify that plant. This can include a description of smell and even taste, if the plant is edible.

STEP 4: Find a different plant variety in the same family to compare to your first subject. Illustrate the similarities and differences.



SKETCHBOOK PAGE CREATED FOR THE BOOK "FORAGING & FEASTING: A FIELD GUIDE AND WILD FOOD COOKBOOK" BY DINA FALCONI AND ILLUSTRATED BY WENDY HOLLENDER.

PLANT FAMILY FIELD GUIDE
LESSON 8

Some plants are poisonous and should not be eaten, especially in the Parsley and Nightshade families.



JERUSALEM ARTICHOKE

ASTER FAMILY (*Asteraceae*)
Over 23,000 species

Identifying Characteristics:

- Composite Flowerheads (center disk female flowers that create the seeds)
- Outer large petals that house male ray flowers

Includes Sunflower, Daisy, Dandelion, Chamomile, Jerusalem Artichoke

Center disk flower

ROSE FAMILY (*Rosaceae*)
Over 2,500 species

Identifying Characteristics:

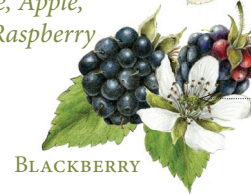
- 5 separate petals
- Numerous stamens

Includes Rose, Apple, Blackberry, Raspberry



5 petals

ROSA RUGOSA



BLACKBERRY

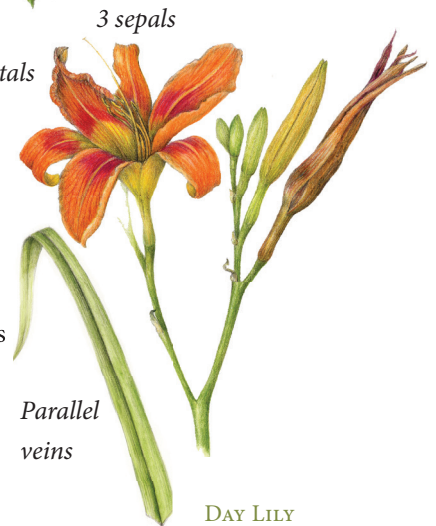
Numerous stamens

LILY FAMILY (*Liliaceae, Amarylidaceae, Asphodelaceae, Hemerocallidaceae* and other related genera)

Over 13,000 species

Identifying Characteristics:

- Flowers with parts in threes
- Sepals and petals usually identical
- Monocots with parallel veined leaves



3 sepals

3 petals

Parallel veins

DAY LILY



Opposite leaves

PEPPERMINT

Square stem

MINT FAMILY (*Lamiaceae*)
Over 7,000 species

Identifying Characteristics:

- Square stems
- Opposite leaves
- Usually aromatic
- "Mouthy" flowers

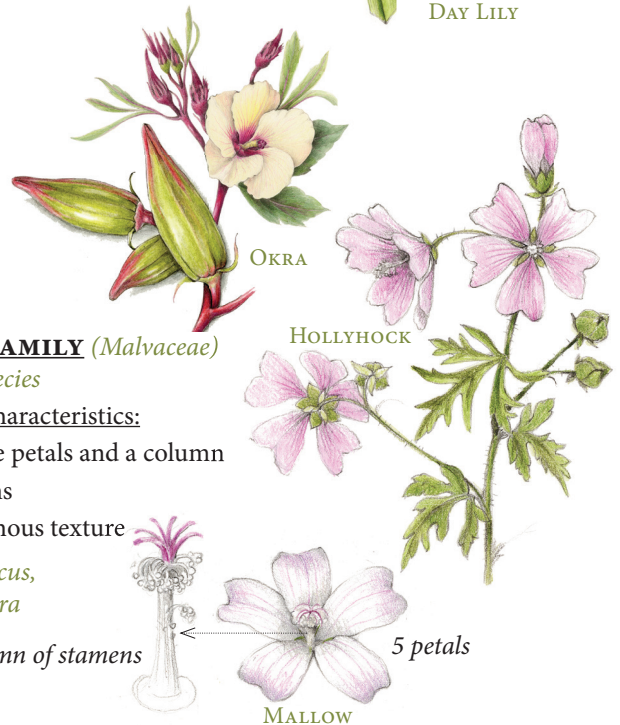
Includes Basil, Rosemary, Lavender, Marjoram, Peppermint, Spearmint, Thyme, Sage

MALLOW FAMILY (*Malvaceae*)
Over 4,000 species

Identifying Characteristics:

- 5 separate petals and a column of stamens
- Mucilaginous texture

Includes Hibiscus, Hollyhock, Okra



OKRA

HOLLYHOCK

Column of stamens

5 petals

MALLOW

PLANT FAMILY FIELD GUIDE

LESSON 8

MUSTARD FAMILY (*Brassicaceae*)

Over 3,500 species

Identifying Characteristics:

- 4 petals in cross pattern
- 6 stamens—4 tall and 2 short

Includes Mustard, Cabbage, Radishes, Broccoli, Turnip



DAME'S ROCKET

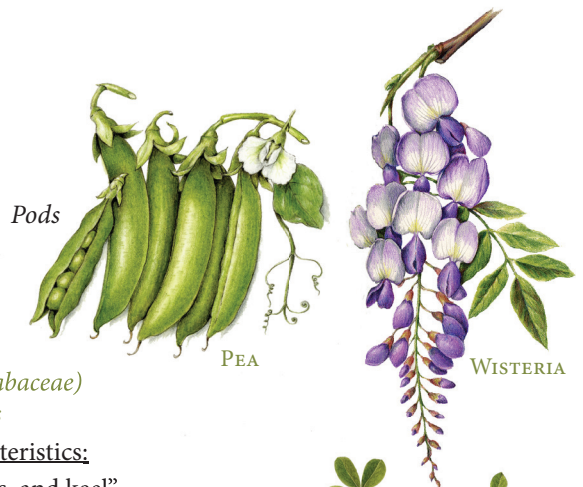


4 petals



4 tall stamens

2 short stamens



Pods

PEA

WISTERIA

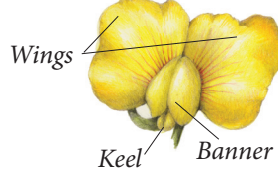
PEA FAMILY (*Fabaceae*)

Over 19,000 species

Identifying Characteristics:

- “Banner, wings, and keel”
- Pea-like pods, often with pinnate leaves

Includes Peas, Beans, Peanuts, Wisteria



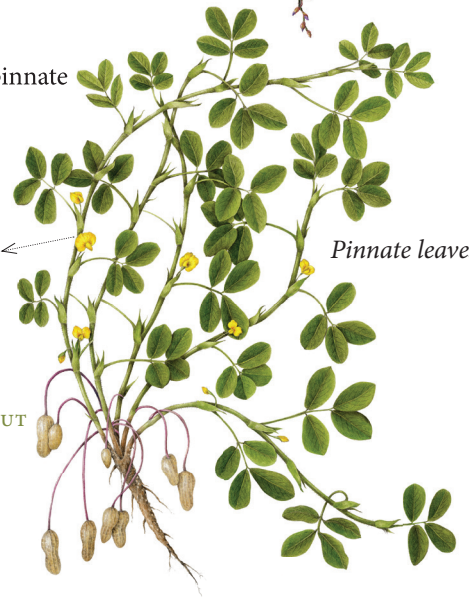
Wings

Keel

Banner

PEANUT

Pinnate leaves



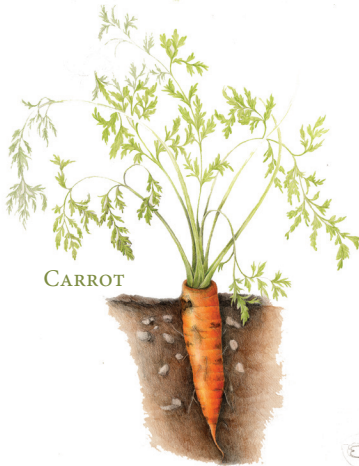
PARSLEY FAMILY (*Apiaceae*)

Over 3,700 species

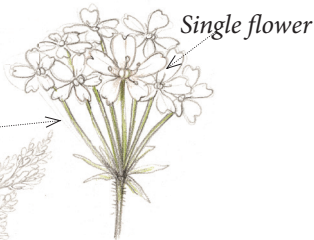
Identifying Characteristics:

- Compound umbels
- Usually hollow flower stalks
- Tap Root

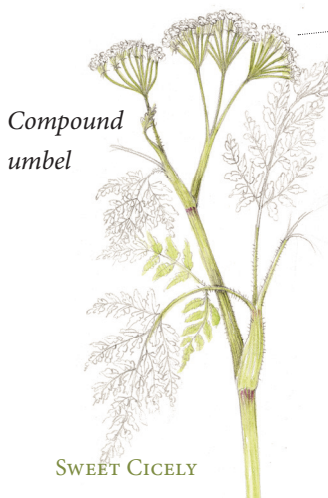
Includes Anise, Celery, Carrot, Cilantro, Dill, Fennel, Angelica



CARROT



Single flower



Compound umbel

SWEET CICELY



Single umbel

ANGELICA

NIGHTSHADE FAMILY (*Solanaeaceae*)

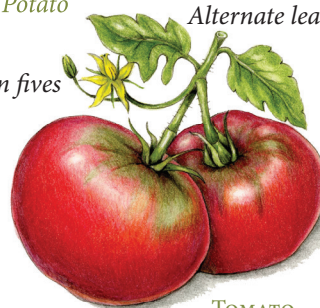
Over 2,700 species

Identifying Characteristics:

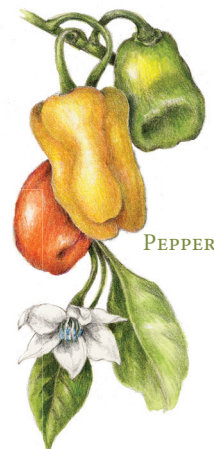
- Alternate leaves
- Flower parts in fives with united petals and a two-chambered ovary

Includes Tomato, Eggplant, Pepper, Potato

Flower parts in fives



TOMATO



PEPPER

PLANT IDENTIFICATION WORKSHEET

LESSON 8

Common Name: _____

MONOCOT OR DICOT: _____

FLOWER:

Calyx (count all the sepals): _____

Corolla (count all the petals): _____

Androecium (count the stamens): _____

Gynocium (count the carpel/pistils): _____

Ovary (superior or inferior): _____

List the flower's key characteristics (for example, "Cross-shaped [X or H shape] flowers with 4 petals and 6 stamens—4 tall and 2 short."): _____

LEAF:

Leaf type (simple, compound): _____

Leaf margins (smooth, serrated): _____

Leaf arrangement (alternate, opposite): _____

Vein pattern (net vein, parallel vein): _____

Leaf shape (Look up common leaf shapes): _____

STEM:

Stem shape (round, square): _____

Other notable qualities (hairs, thorns, smell, etc.): _____

FRUIT:

Describe the fruit or seed pod: _____

ROOT:

Describe the root. Does it have a central tap root? _____

Based on your observations, drawings and research, which family does this plant belong to?

Family Name: _____ Genus: _____ species: _____