

CMG GardenNotes #135

# Plant Structures: Flowers

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## Thought questions:

- o My zucchini is blooming but doesn't set any fruit. Why?
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Flowers are the reproductive structures of a flowering plant. Flowers are the primary structures used in grouping plant families.

## Function

- Reproduction, beginning with pollination and fertilization.
- Advertisement and rewards to lure a pollinator.
- Horticultural uses
  - o Aesthetic qualities
  - o Cut flowers and potted blooming plants
  - o Edible flowers and herbs
  - o Plant identification

## Structure

**Pistil** – central female organ of the flower. It is generally bowling-pin shaped and located in the center of the flower.

**Stigma** – receives pollen, typically flattened and sticky

**Style** – connective tissues between stigma and ovary

**Ovary** – contains ovules or embryo sacs

**Ovules** – Unfertilized, immature seeds

**Stamen** – male flower organ

**Anthers** – pollen-producing organs

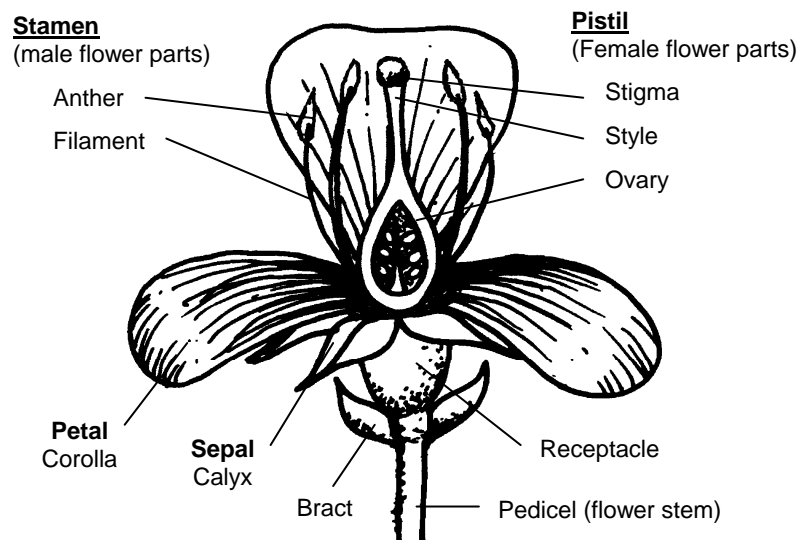
**Filament** – stalk supporting anthers

**Petals** – usually colorful petal-like structures making up the “flower”, collectively called the **corolla**. They may contain perfume and nectar glands.

**Sepals** – protective leaf-like enclosures for the flower buds, usually green, collectively called **calyx**. Sometimes highly colored like the petal as in iris.

**Receptacle** – base of the flower

**Pedicel** – flower stalk of an individual flower in an inflorescence

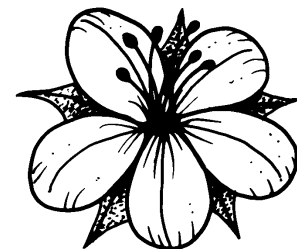


### Monocot or Dicot

The number of sepals and petals is used in plant identification. Dicots typically have sepals and petals in fours, fives, or multiples thereof. Monocots typically have flower parts in threes or multiples of three.



Monocot flower  
parts in 3s



Dicot flower  
parts in 4s or 5s

## Terms Defining Flower Parts

### Flowers

**Complete** – flower containing sepals, petals, stamens, and pistil

**Incomplete** – flower lacking sepals, petals, stamens, and/or pistils

**Perfect** – flowers containing male and female parts

**Imperfect** – flowers that lack either male or female parts

**Pistillate** – flowers containing only female parts

**Staminate** – flowers containing only male parts

### Plants

**Hermaphroditic** – plants with perfect flowers (apples, tulips)

**Monoecious** (mə-nē'shəs) – plants with male flowers and female flowers on the same plant (corn, squash, and pine)

**Dioecious** (dī-ē'shəs) – plants with male flowers and female flowers on separate plants (maple, holly)

**Gynoecious** – plants with only female flowers

**Andromonoecious** – plants with only male flowers

## **Inflorescence** (flower arrangement on a stem)

**Catkin (ament)** – a spike with only pistillate or staminate flowers (alder, poplar, walnut, and willows)

**Composite or Head** – a daisy-type flower composed of ray flowers (usually sterile with attractive, colored petals) around the edge and disc flowers that develop into seed in center of the flat head (sunflower and aster) On some composites, the ray and disc flowers are similar (chrysanthemums and dahlias)

**Corymb** – stemlets (*pedicels*) arrangement along main stem, gives florets display with a flat rounded top. Outer florets open first. (yarrow, crabapple)

**Cyme** – a determinate, flat or convex flower, with inner floret opening first.

**Panicle** – an indeterminate flower with repeated branching. It can be made up of racemes, spikes, corymbs, or umbels. (begonia)

**Raceme** – a modification of a spike with flowers attached to a main stem (*peduncle*) by stemlets (*pedicel*). (snapdragon, bleeding heart, Canterbury bells)

**Solitary** (or single) – one flower per stem (tulip, crocus)

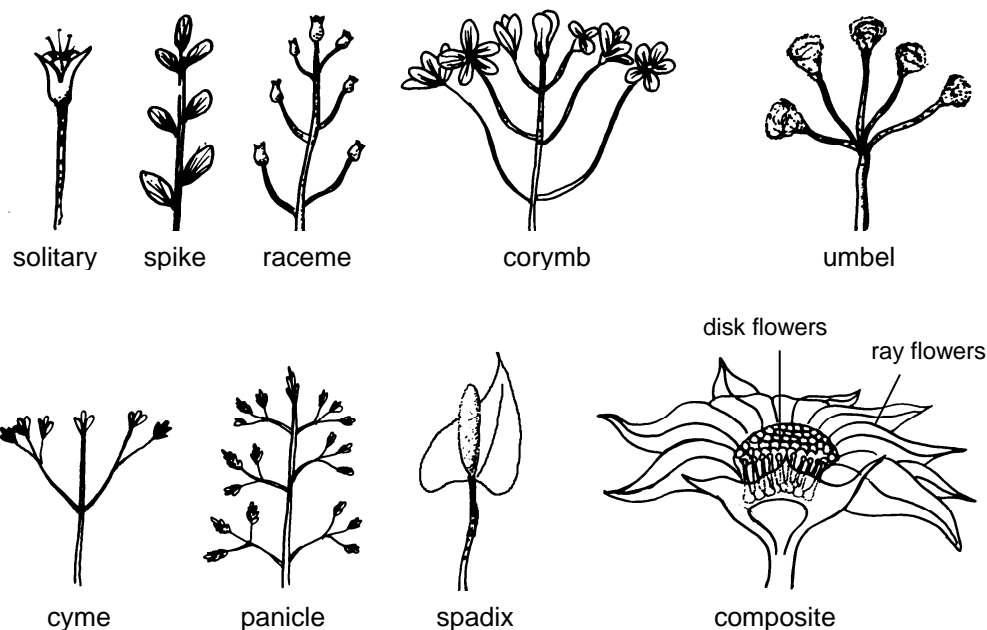
**Spadix** – showy part is a bract or *spathe*, partially surrounding the male and female flowers inside. (calla, caladium)

**Spike** – flowers attached to main stem, without stemlets, bottom florets open first. (gladiolus, ajuga and gayfeather)

**Umbel** – florets with stemlets attached to main stem at one central point, forming a flat or rounded top. Outer florets open first. (dill, onion)

**Symmetrical** – symmetrical flowers (lily)

**Asymmetrical** – asymmetrical flowers (snapdragon)



**Additional Information – CMG GardenNotes on How Plants Grow (Botany):**

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- o Colorado Master Gardener training is made possible, in part, by a grant from the *Colorado Garden Show, Inc.*
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Revised February 2009