Science behind Gardening

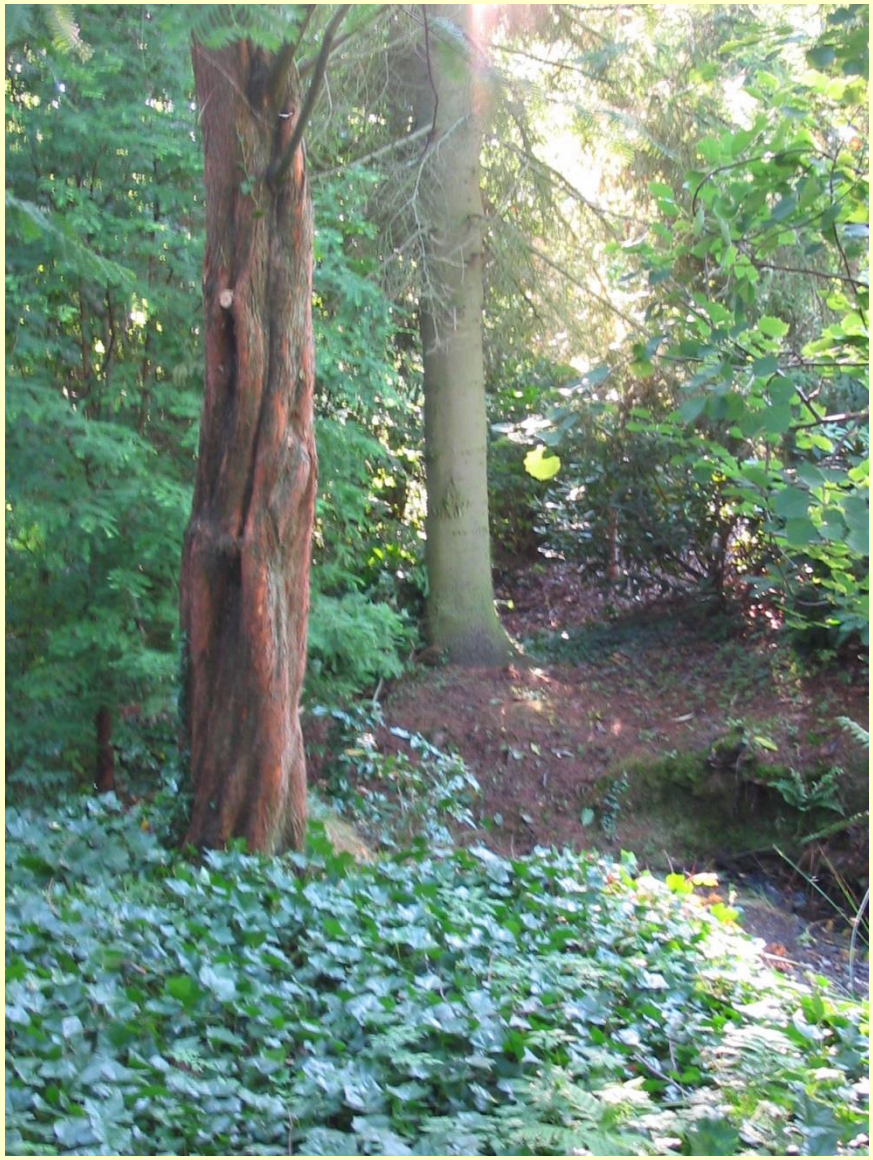
Plant names explained

Emma Maxwell

Plant Types

- Woody Plants - Perennials
  - Trees
  - Shrubs
- Herbaceous – non woody plants
  - Annuals
  - Half hardy annuals
  - Biennials
  - Perennials
  - Half hardy/tender perennials
  - Bulbs

Trees – have a single stem



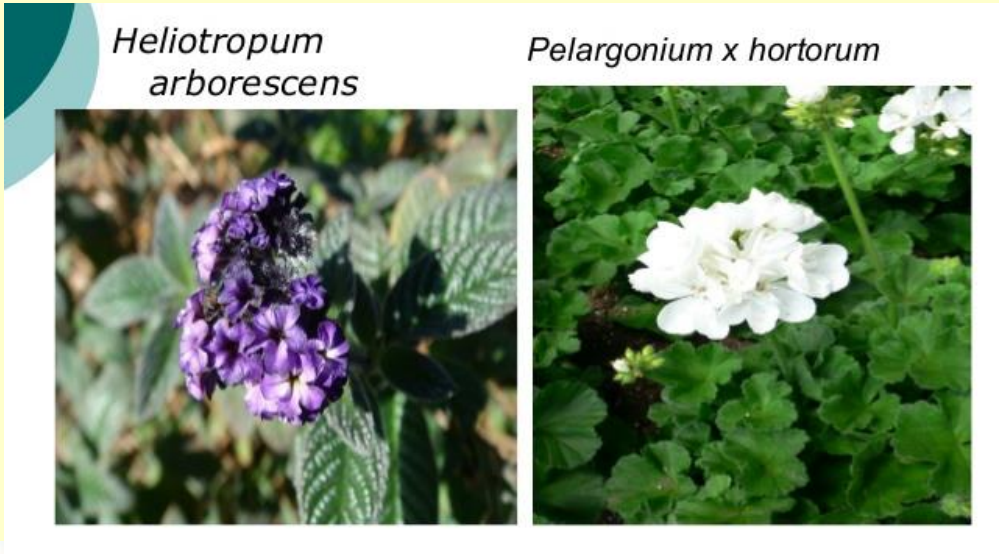
Multi stemmed Trees

stem snipped when young, by nature or nurseries

Shrubs – have multiple stems from the ground

Annuals –complete their lifecycle in one season

Half hardy annuals – non-natives needing warmer temperatures, will be killed by frost/ cold

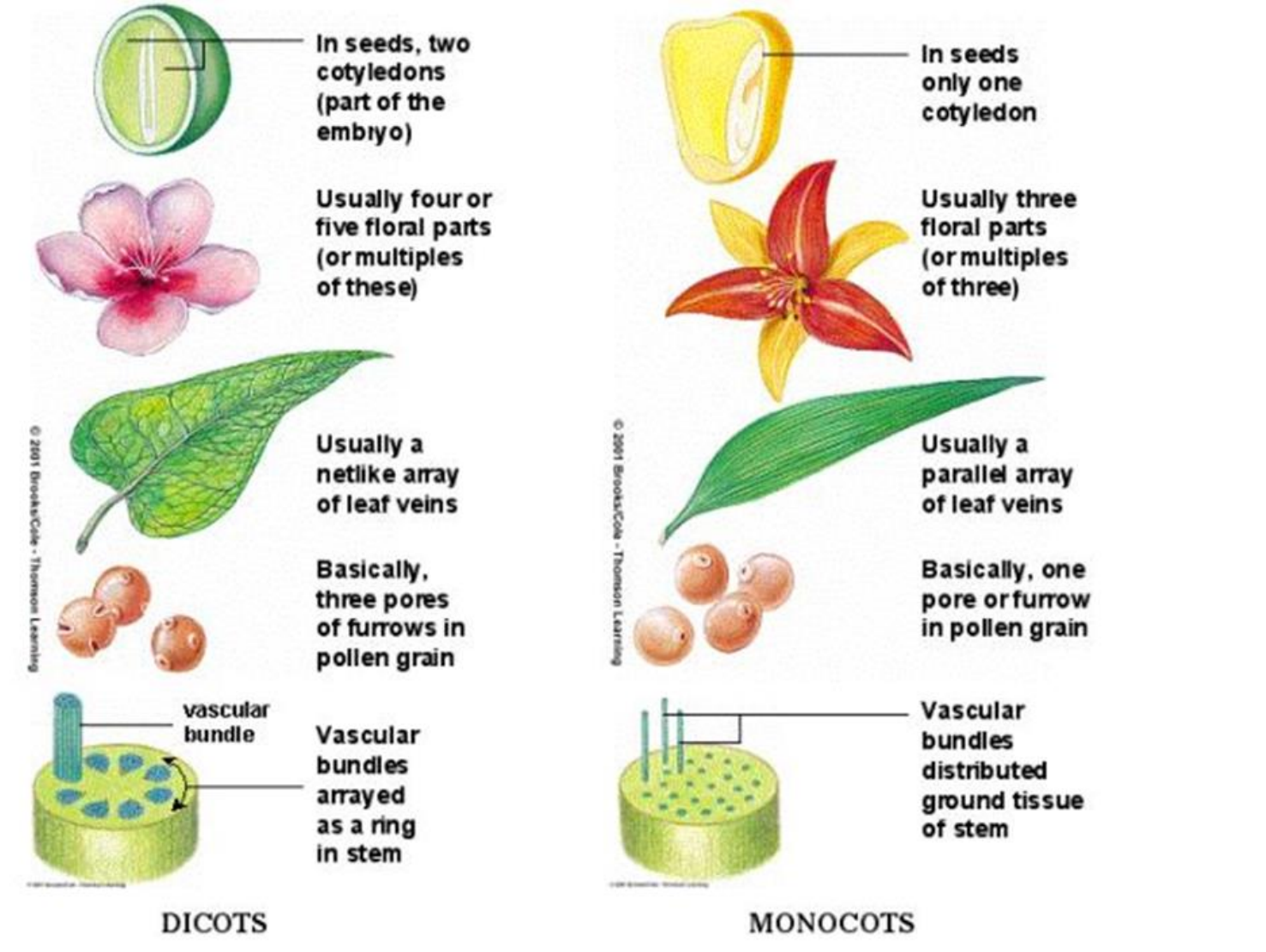


Biennials – grow foliage in year 1, flower and seed in year 2, then die

Perennial – grow back each year
Can be woody or herbaceous

Half hardy perennial – tend to be non-natives needing warmer temperatures

Dicotyledon / Monocotyledon



An Example of Plant Classification

Black-eyed Susan

Rudbeckia hirta

Kingdom	Plantae – Plants
Subkingdom	Tracheobionta – Vascular plants
Superdivision	Spermatophyta – Seed plants
Division	Magnoliophyta – Flowering plants
Class	Magnoliopsida – Dicotyledons
Subclass	Asteridae
Order	Asterales
Family	Asteraceae – Aster family
Genus	*Rudbeckia* – coneflower
Species	*Rudbeckia hirta* – black-eyed Susan

Taxonomy
Plant naming and Classification

- Binominal system
- Carle Linne – 1707 – 1778
- Species Plantarum – 1753
  - Contained 6000 species
- Flower the most important feature
- 1760 he was raised to nobility
- Carle Von Linne -Carolus Linnaeus

Plant classification

- Families
  - aceae
- Genera/ Genus
  - Capital first letter
- Species
  - lower case
- Cultivar
  - ‘Speech marks’

Bi-nominal names

Genus & species are written in italics or underlined

Fabaceae

Asteraceae

Brassicaceae

Rosaceae

Apiaceae

Lamiaceae

Liliaceae

Genera (plural)
Genus (singular)

- *Alchemilla*
- *Cotoneaster*
- *Cratageus*
- *Geum*
- *Malus*
- *Prunus*
- *Pyracantha*
- *Sorbus*
- *Spiraea*

Species – descriptive

- Colour – *aureus*, *purpureus*
- Habitat – *montanus*, *aquatilis*
- Shape – *horizontalis*, *fastigatus*
- Smell – *fragrantissima*, *oderatus*
- Taste – *edulis*, *saccharum*
- Touch – *hirsutus*, *spinosus*
- Plant hunter – *Solanum douglasii*
  - Named after David Douglas

Flowering Plants

- 250,000 – 400,000 species
- c.450 families, 10 largest are:
  - *Asteraceae* (*Compositae*) / daisy family: 23,600 species
  - *Orchidaceae* / orchid family: 21,950 species
  - *Fabaceae* (*Leguminosae*) / pea family: 19,400
  - *Rubiaceae* / bedstraw family: 13,183
  - *Poaceae* (*Gramineae*) / grass family: 10,035
  - *Lamiaceae* (*Labiatae*) / mint family: 7,173
  - *Euphorbiaceae* / spurge family: 5,735
  - *Myrtaceae* / myrtle family: 4,620
  - *Melastomataceae* / melastome family: 4,570
  - *Cyperaceae* / sedge family: 4,350

Variety

- Naturally occurring variation within a species
- Is written with the abbreviation "var." followed by the variety name, both in italics

Brassica oleracea var. italica 'Broccoli’

"Broccoli" is the cultivar name

Cultivars

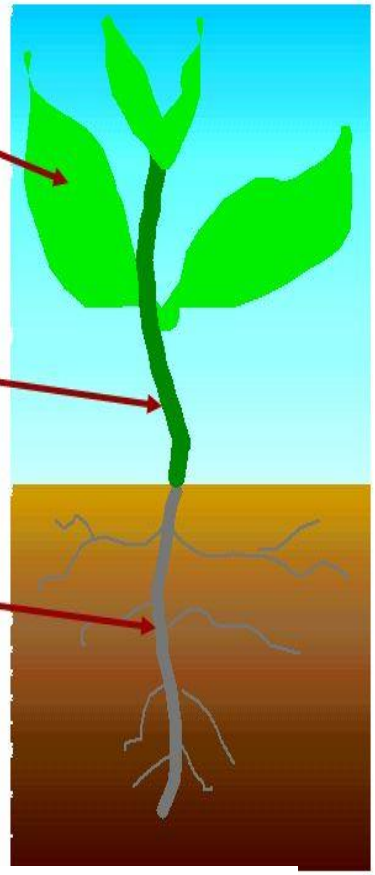
- Selected or artificially raised
- Written with capital letters & single quotation marks

  ‘Royal Wedding’

  ‘Fly away’

Angiosperm - Flowering plants

Plant Structures/Functions

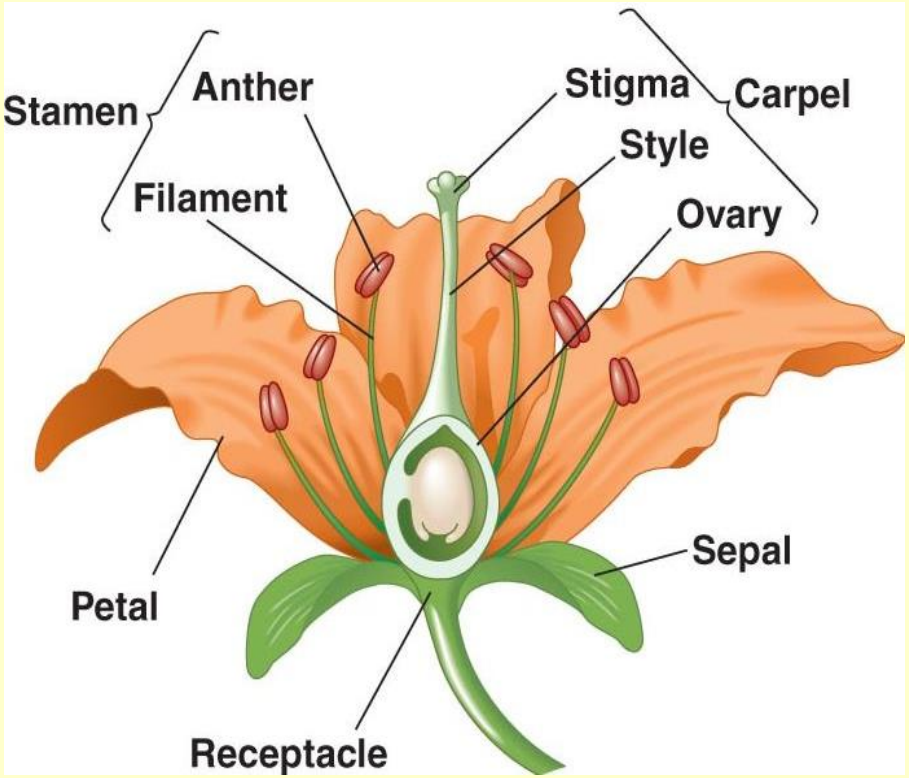


- Leaf - photosynthesis
- Stem - transport
- Root - absorption (and transport…)
- Flower - reproduction

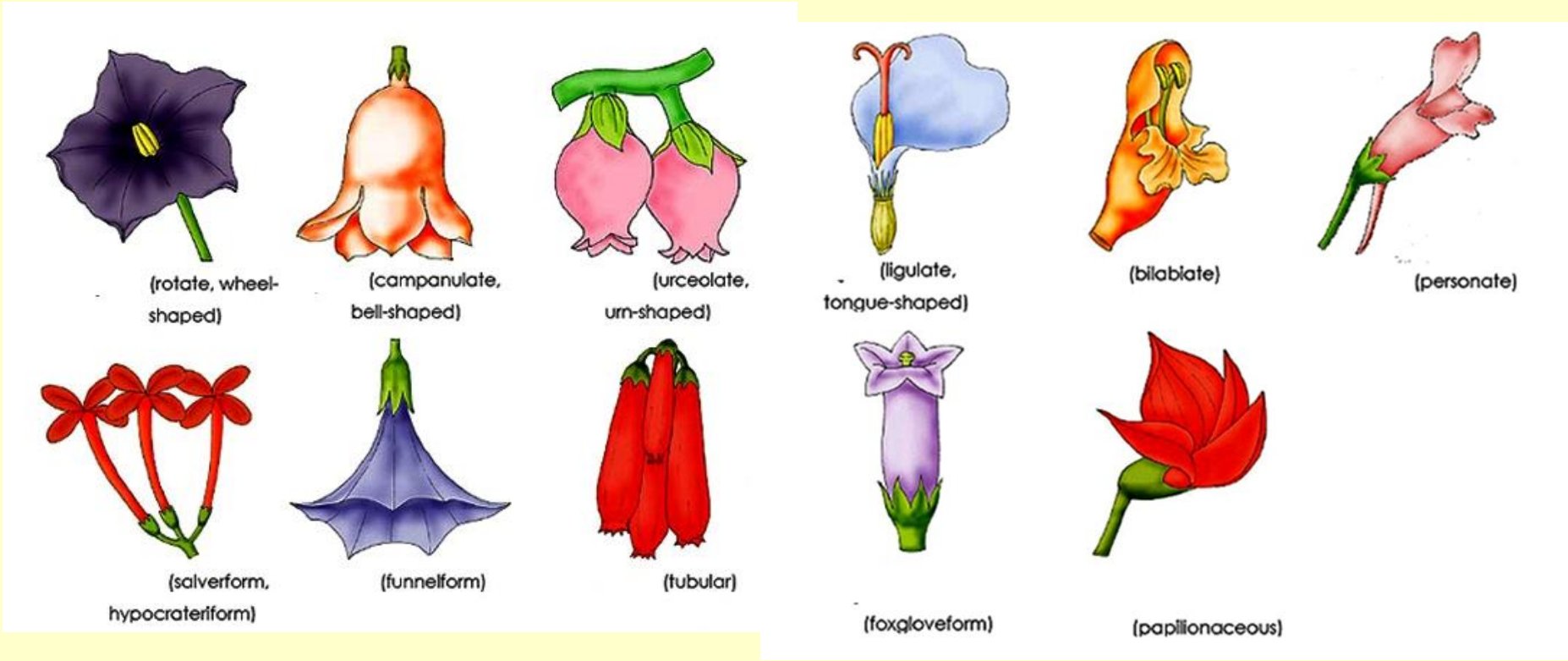
Plants are grouped into family groups by their flower characteristics.

- Number of
  - Petals, Stamen, Carpel
- Corolla shape

Structure of an idealised flower



Different Corolla forms

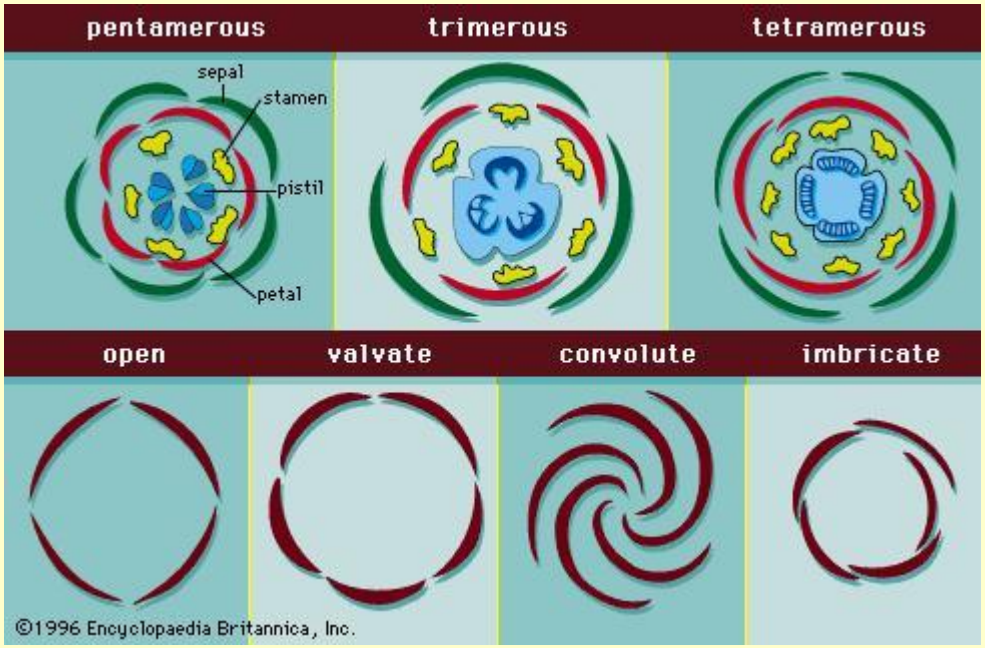


Four main parts

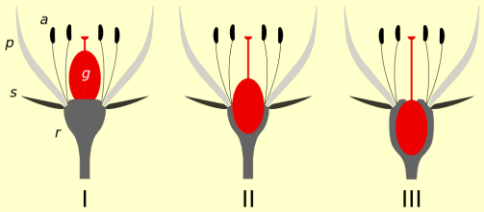
Calyx (Sepals),
Corolla (Petals)
Stamens (Anther and Filament)
Carpel (Stigma, Style and Ovary)

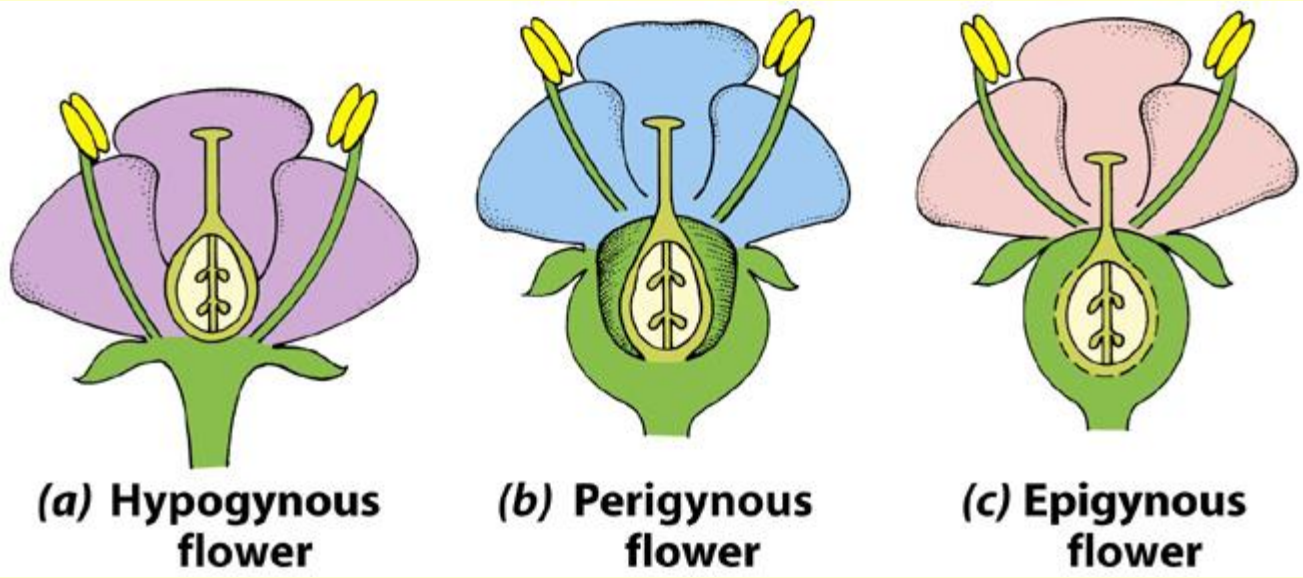
The stamen is the male part of the plant and carpel is the female part of the plant.

- Male and female parts
- in same flower
- in separate flowers
- or separate plants.



Position of ovary





The **receptacle** is the thickened part of a stem from which the flower organs grow.

Flowers


St Bernard's Lily (Anthericum liliago)
Bermuda Buttercup (Oxalis pes-caprae)
Oleander (Nerium oleander)
Lantana (Lantana camara)
Scarlet Pimpernel (Anagallis arvensis)
Verbascum (Verbascum sinuatum)
Common Mallow (Malva sylvestris)
Spanish Oyster (Scolymus hispanicum)
Stork's bill (Erodium malacoides)
Bindweed (Convolvulus arvensis)
Blue Gem (Hebes x franciscana)
Calla Lily (Zantedeschia aethiopica)

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