Introduction to Identifying Plant Structures

Compiled by Susan Ballinger using sources:

Botany in a Day by Thomas Elpel

The Botanical Primer by Joe Arnett

Plants of Southern Interior British Columbia & the Inland Northwest by Parish, Coupe, and Lloyd

Two classes of Flowering plants

Monocots- 1 seed leaf

- Parallel veins in leaf
- Spreading roots (fibrous)
- Usually simple branching
- Floral parts mostly in 3's

Dicots- 2 seed leaves

- Netted veins in leaf
- Usually tap rooted
- Usually complex branching
- Floral parts mostly in 4's & 5's

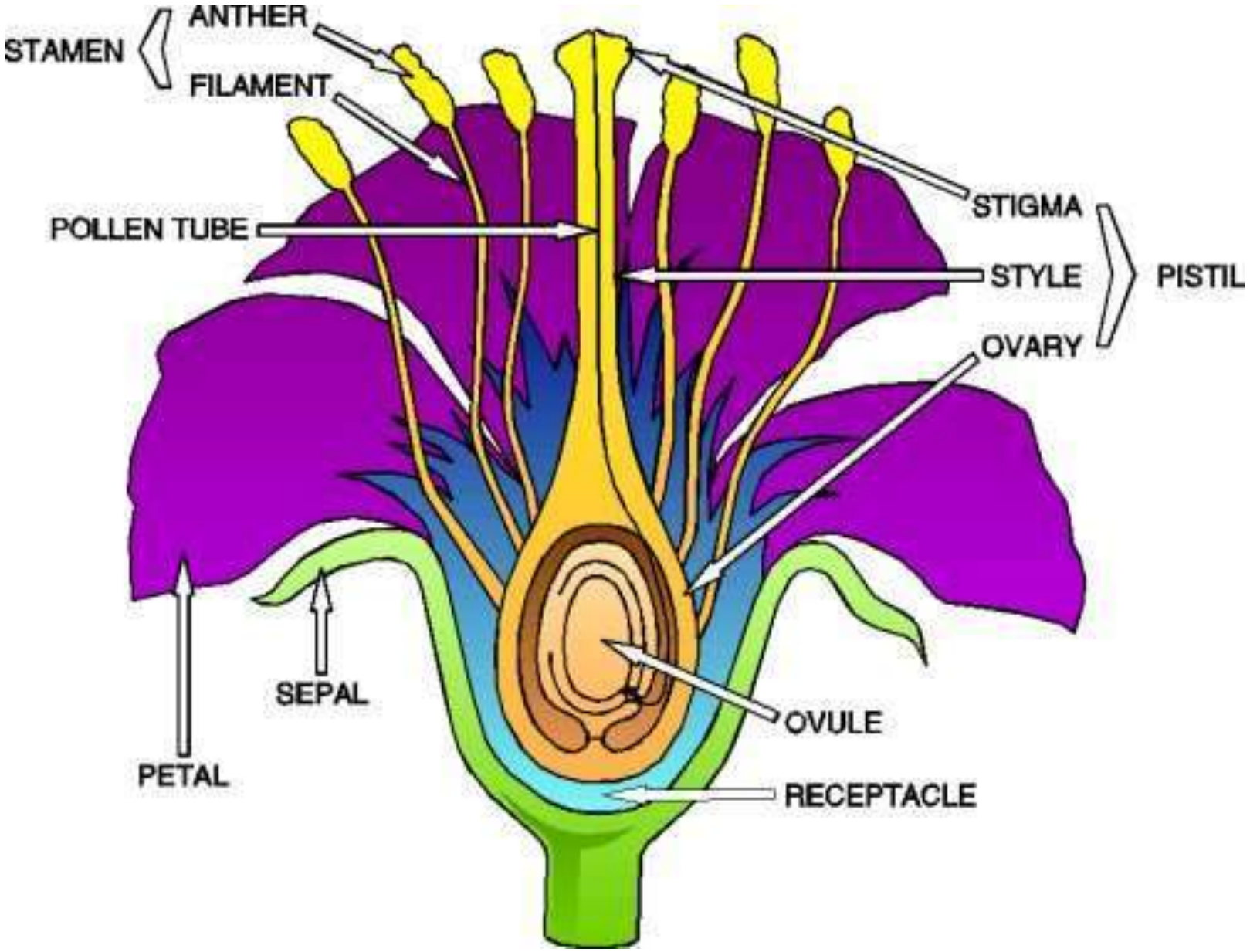
Iris Family

Monocots include:

Lily Family

Grass Family

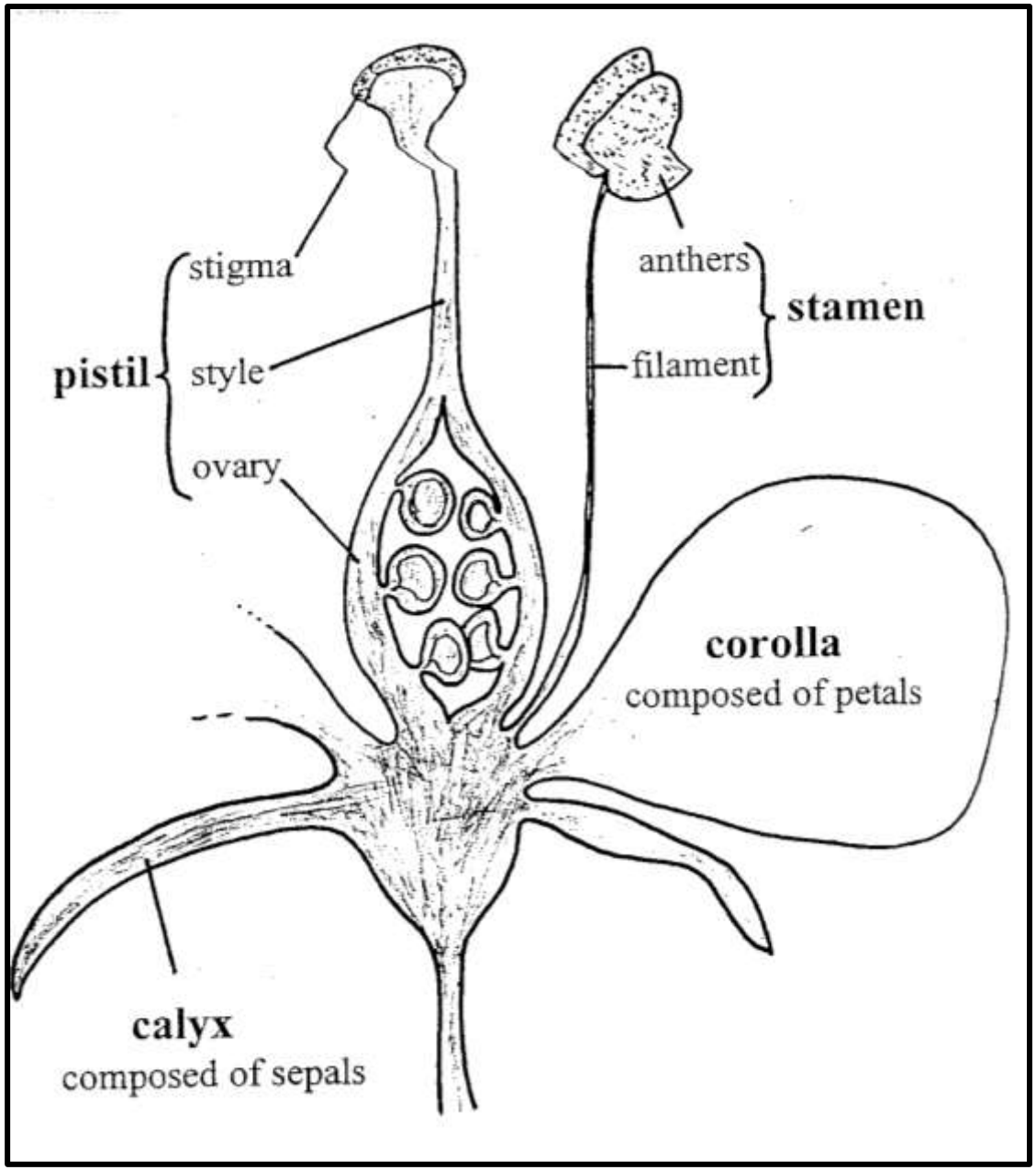
Orchid Family


STAMEN
ANTHER
FILAMENT
POLLEN TUBE
STIGMA
STYLE
PISTIL
OVARY
SEPAL
PETAL
OVULE
RECEPTACLE

Take notes in the field about plant and flower characteristics

Examine each layer of a flower

Sepals
Petals
Stamens
Pistil



Types of flowers: Radial or Bilateral

Radial- **a "Regular flower"**
can be evenly divided in half, any where around its circumference

Bilateral- **an "Irregular Flower"**
can only be divided in half evenly by a line drawn down the middle

Types of Irregular flowers (all have bilateral symmetry)

Corolla Types

saucer-shaped

Tubular- corolla fused into a long tube

bell-shaped
campanulate

funnel shaped

cross-shaped
cruciform

Inflorescence types- how clusters of flowers are arranged on a plant

scorpioid

Raceme- each flower on a stalk

Compound umbel

Panicle- a branched flowering stalk

In a flower, figure out where the ovary is positioned

A **superior ovary** is attached above the attachment of the petals and sepals (together, called the perianth)

An **inferior ovary** is attached beneath the points of attachment of the petals and sepals (together, called the perianth)

Sepals remain on a rose hip

Observe the Leaf Attachment to the Stem

alternate

Basal rosette

whorled

Simple Leaf blade: one whole, undivided continuous unit. *Many different shapes*


linear


Lance-shaped


spatulate

ID TIPS:

Important to sketch in the field.

Describe type of hairs on both sides of leaf (or note absence of hair)

Note leaf arrangement on the stem or at base of plant


oval


Arrow-shaped


heart-shaped

Compound leaf: Blade divided into 2+ separate, arranged leaflets with separate blade tissue.

Many different shapes

palmately divided

finely dissected

Pinnately divided

A blade with many leaflets

Leaf blade margin

Many different shapes: smooth or entire OR toothed, wavy, serrate, spiny, doubly serrate, toothed (many more)

Note if **hairs** are present on top and/or bottom of leaf- if so- what type?

Note the shape of the **Leaf Apex** (tip). It is pointed in both of these examples