

Science - Year 5

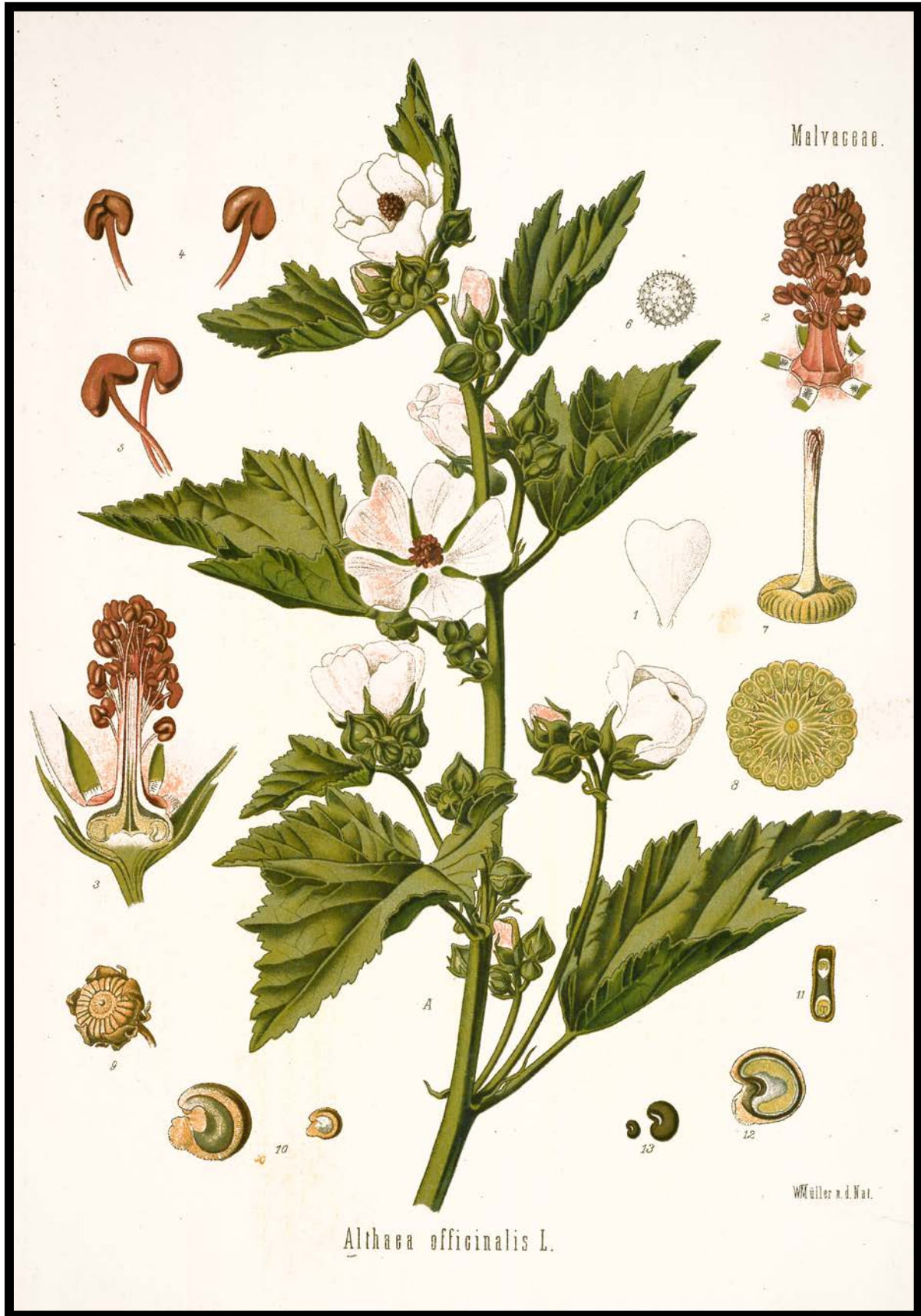
Living Things and their Habitats – Block 5LvH

The art of living

Session 1

Resource Pack

Examples of botanical illustrations





Leontodon Taraxacum.



1. Rosemarin
Rosmarinus officinalis L.

2 a, b, c. Melisse.
Melissa officinalis L.

3 a, b. Hyssopus.
Hyssopus officinalis L.

Rosaceae 1. Prunaeae.



320. *Amygdalus communis* L.

Mandelbaum.



1
2
3
4
5

Oxalis enneaphylla Cav.



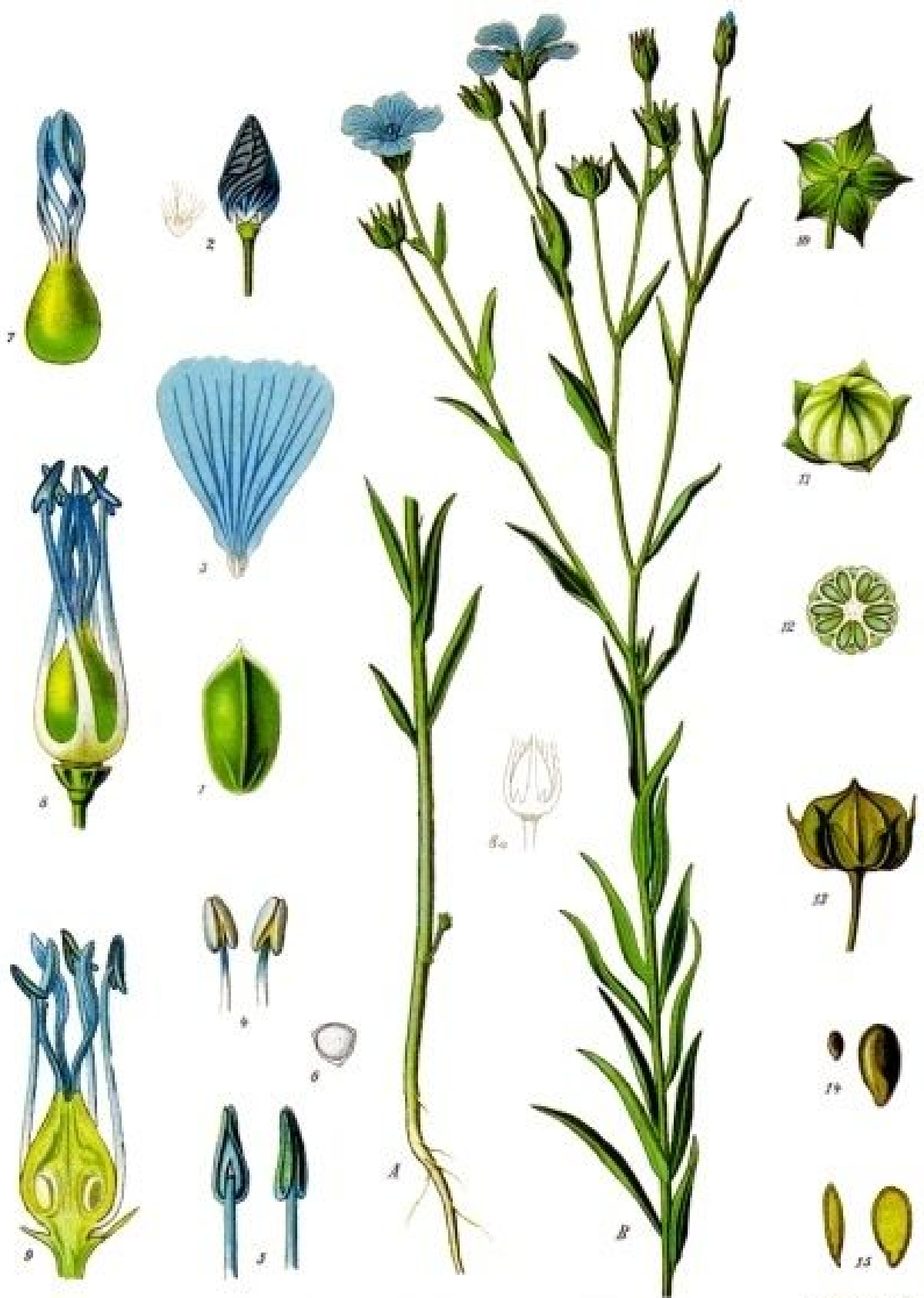


1 a, b. Herbstzeitlose.
Colchicum autumnale L.

2 a, b. Tollkirsche.
Atropa belladonna L.

3 a—c. Seidelbast.
Daphne mezereum L.

4 a—g. Roter Fingerhut.
Digitalis purpurea L.



W. Meier u. L. Bat.

Gallery questions:

- 1. What can you see in the illustration?***
- 2. Do you think that this illustration represents the plant at a single moment in time?***
- 3. Why do you think so many different structures have been included in the picture?***
- 4. What do you think the artist has had to do to the plant in order to see and draw all of the structures?***
- 5. What art materials and methods do you think the artist has used?***

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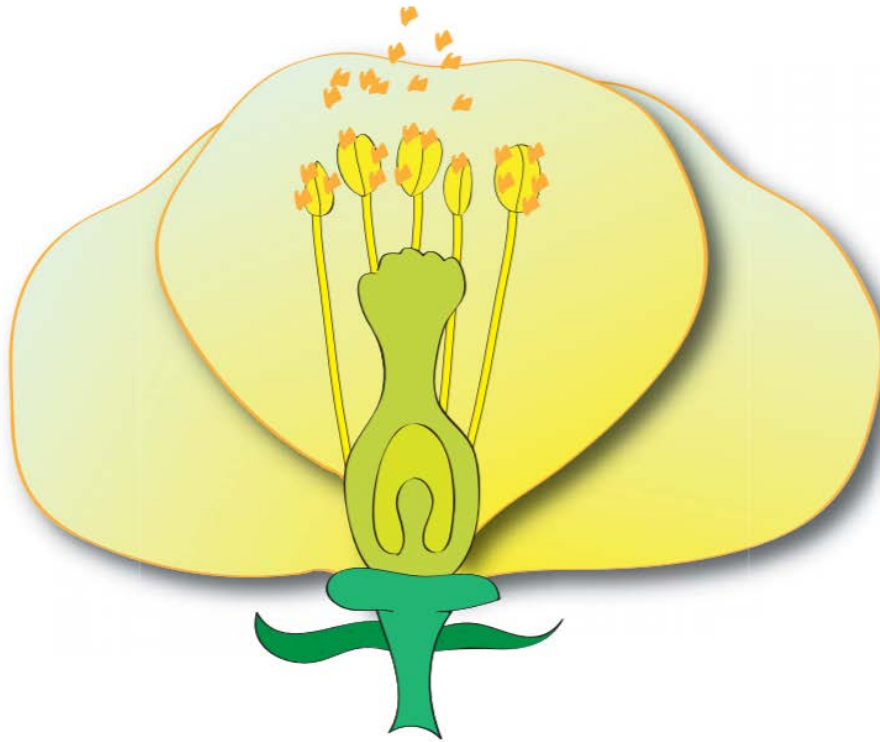
Botanical art (not illustration)





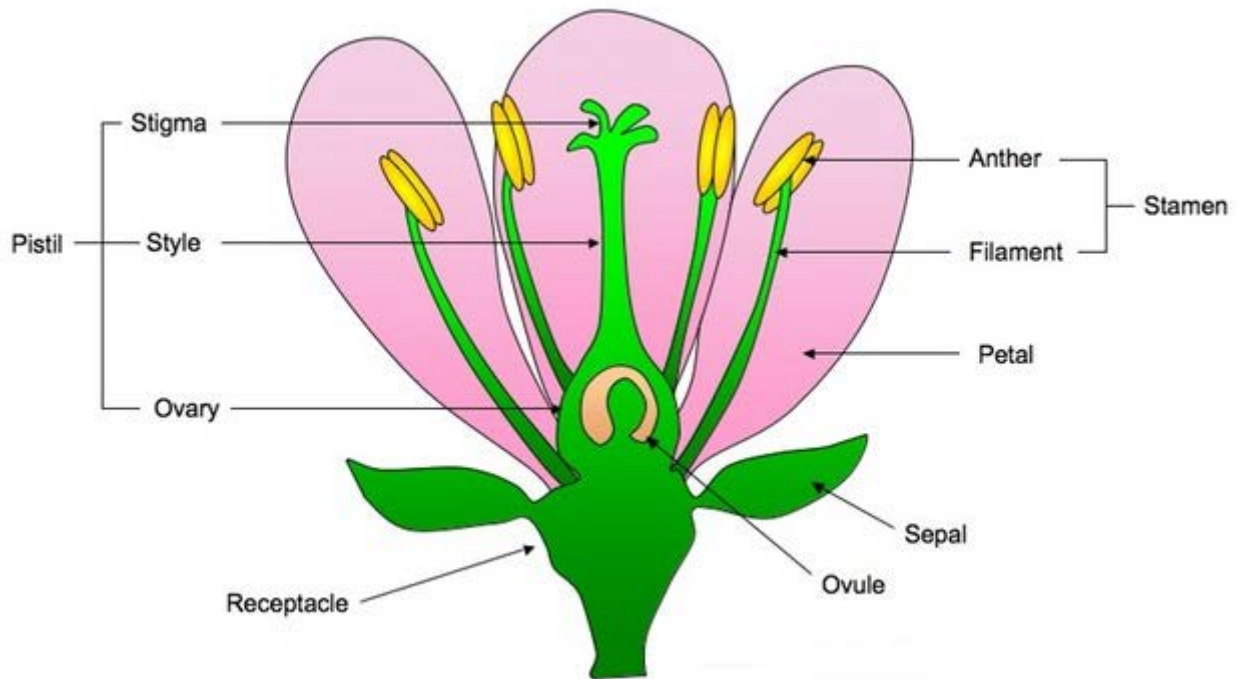
Unlabelled flower with labels to add in

The parts of a simple flower



Petal	Pollen	Anther
Sepal	Pistil	Sepal
Stamen	Style	Receptacle
Stigma	Filaments	Stem
Ovule	Ovary	

Labelled flower

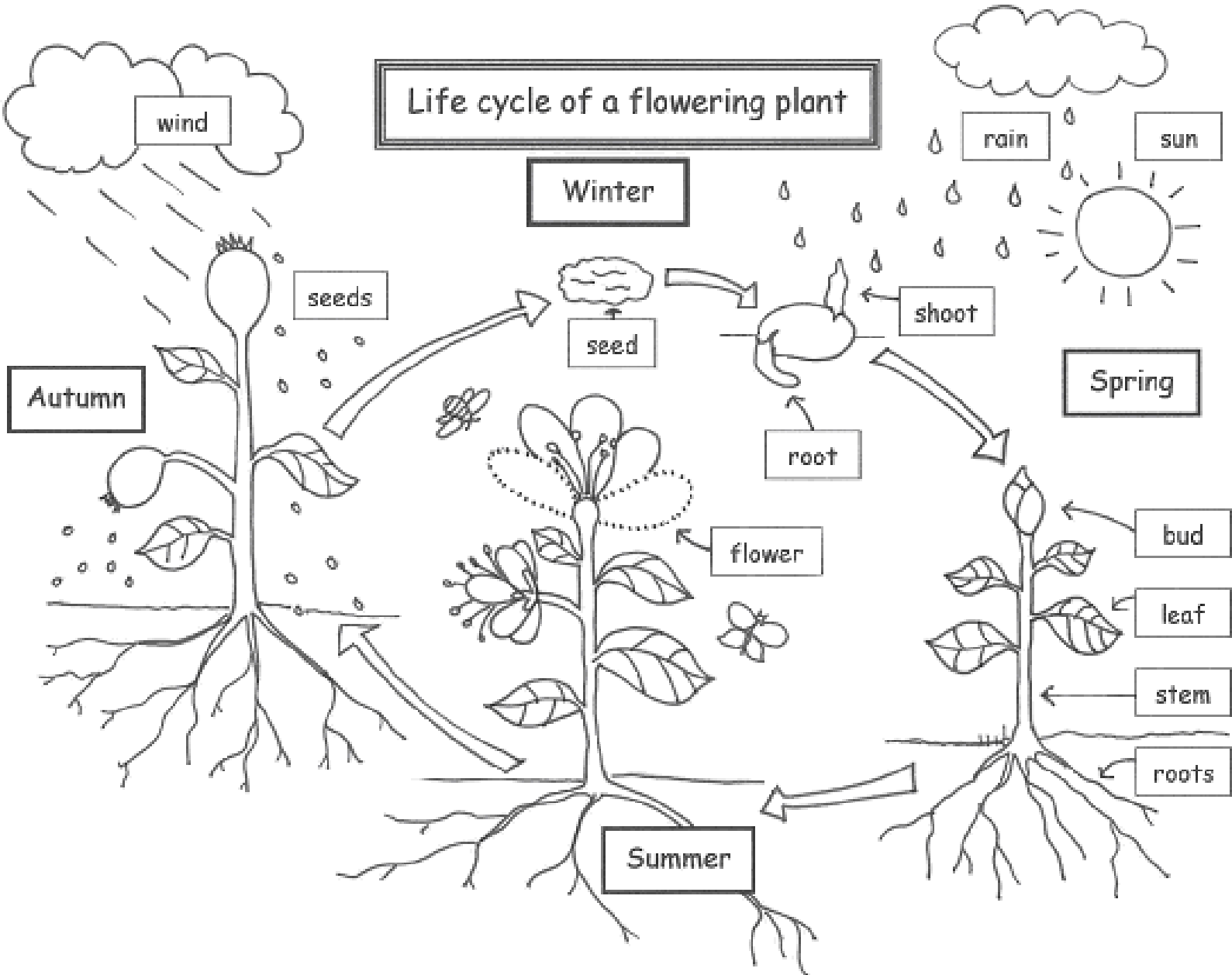


The **stamen** consists of the anther and the filament.

The **carpel** consists of the stigma, style and ovary. The pistil is a fused group of carpels.

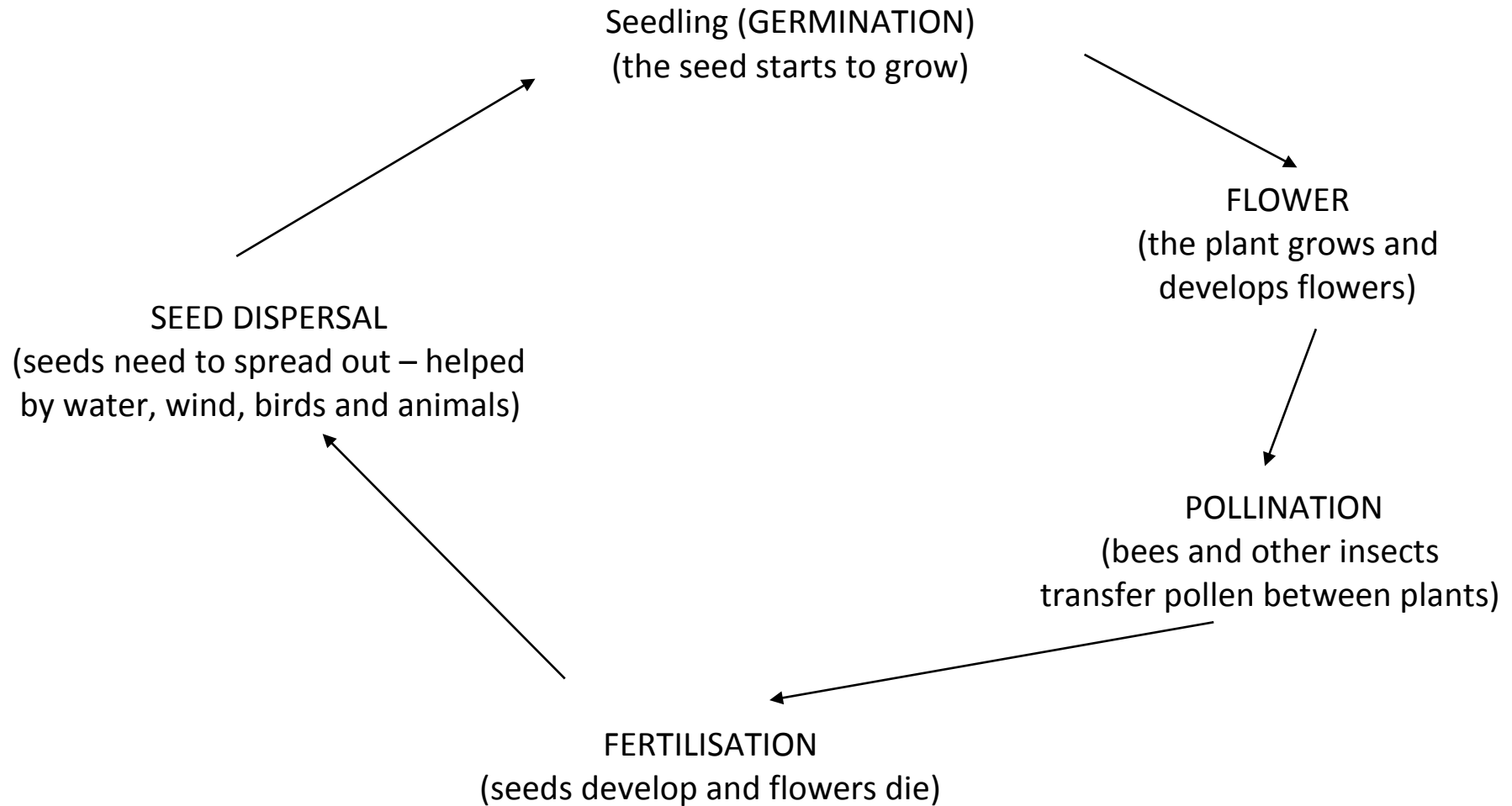
The **receptacle** is a thickened part of the stem from which the flower organs grow.

Life cycle of a flowering plant



Flowering plant life cycle

Reproduction is the process by which a plant produces seeds to make a new plant.



Guidance for flower dissection

Note - please check for any pollen allergies before starting

Equipment:

- Flower
- Tweezers
- Knife
- Plain A4 paper
- Double sided tape



Choice of flower:

Winter - snowdrop, winter jasmine

Spring to early summer - peony, perennial geranium, gladiolus, wallflower

Summer and autumn - lily, sweet pea

(Flowers to avoid due to more unusual or hidden structures: daisy, dandelion, buttercup, daffodil, poppy, rhododendron)

Dissection instructions:

1. Secure the flower stalk with sticky tack or Plasticine and explore the flower with a magnifying glass
2. Start at the base, and remove the sepals (using fingers or tweezers) and place on your piece of paper
3. Remove the petals, and try to identify your plant as either a monocot or a dicot. Monocotyledons have petals in multiples of three and the leaf veins are parallel, while dicotyledons have petals in multiples of four or five and the leaf veins are branching
4. Next remove the stamens, and examine the pollen using the magnifying glass and note its shape
5. Now remove the carpels or pistil and cut it in half lengthwise, (be careful to keep your fingers out of the way) and use your magnifying glass to examine the inside of it. You should be able to identify the style and might be able to see tiny eggs, or ovules, in the pistil's ovary
6. Arrange the flower structures on double sided sticky tape, on the piece of paper, either in the form of an 'exploding' flower, or arranged in lines or 'clumps'
7. Once completed, label each part and cover the dissected flower with sticky backed plastic to protect it

Virtual Dissection

You can also dissect flowers online:

Simple: Lifecycles, BBC: www.bbc.co.uk/bitesize/ks2/science/living_things/life_cycles/play/

Complex: Interactive virtual plant dissection lab, Chinese University of Hong Kong: <http://www.cuhk.edu.hk/bio/IVPDL/>

Guidance for botanical illustration (using watercolour pencils)

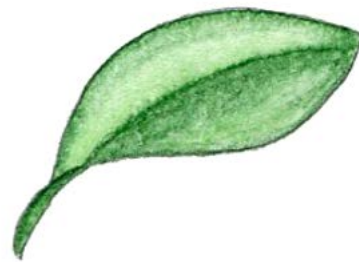
Equipment

Watercolour pencils
Water
Paintbrushes
High quality drawing/painting paper

Use the ***continual tone method*** to colour, pressing harder for deeper tone and lighter for lighter tone. Use different colour pencils to create colour layering.

Soak your brush in water and swipe over the pencil colour to turn the pencil to watercolour.

Continual tone method is where you rub the pencil along the paper. You should complete a light pencil sketch first and then add in the tone afterwards. When moving the pencil to make the tone, make the movement from your elbow rather than just your hand as this will produce a more even tone. The type of paper you use will also affect the tone.



EXAMPLE OF WATERCOLOUR PENCIL

Guidance from:

[http://www.aucklandmuseum.com/CMSPages/GetAzureFile.aspx%5C?path=/aucklandmuseum/media/main/visit_us/w_hats_on/exhibitions/2009_exhibitions/wonderland/education/wonderland_botanical_illustration_guide\(2\).pdf](http://www.aucklandmuseum.com/CMSPages/GetAzureFile.aspx%5C?path=/aucklandmuseum/media/main/visit_us/w_hats_on/exhibitions/2009_exhibitions/wonderland/education/wonderland_botanical_illustration_guide(2).pdf)

Further links for botanical illustration examples

<http://www.nhm.ac.uk/our-science/departments-and-staff/library-and-archives/collections/women-artists.html>

<http://www.botanicalartandartists.com/scientific-botanical-illustration.html>

<http://www.botanicalartandartists.com/permanent-collections-uk.html>

<http://www.botanicalartandartists.com/rhs-botanical-art-exhibitions.html>

<http://www.nhm.ac.uk/discover/the-art-of-scientific-illustration.html>

<http://www.rhsprints.co.uk/category/8558/botanical-plates>