

# Reproduction

Plant Anatomy and  
Reproduction



# How do plants reproduce?

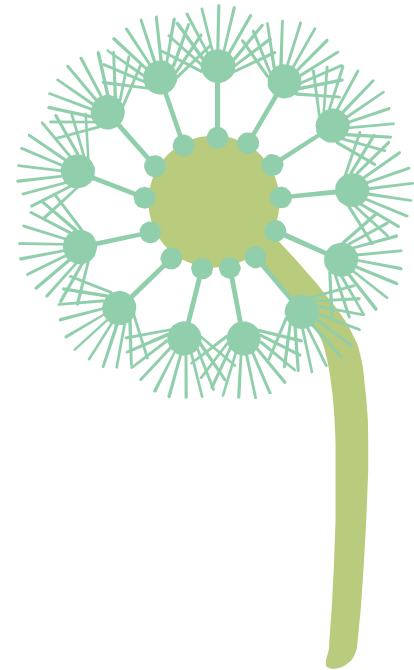
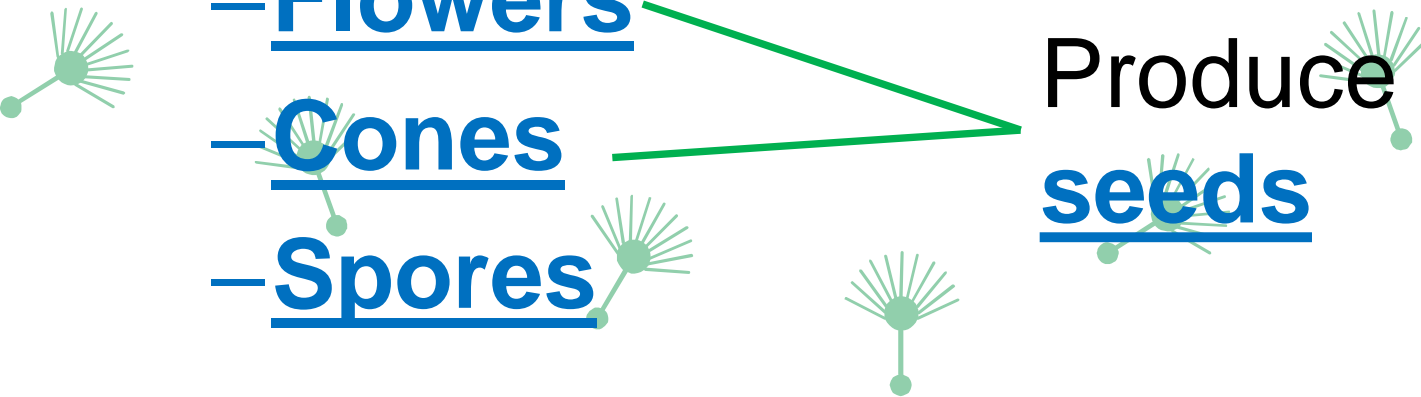
- The plant Kingdom actually has three forms of sexual reproduction (in addition to asexual reproduction):

– Flowers

– Cones

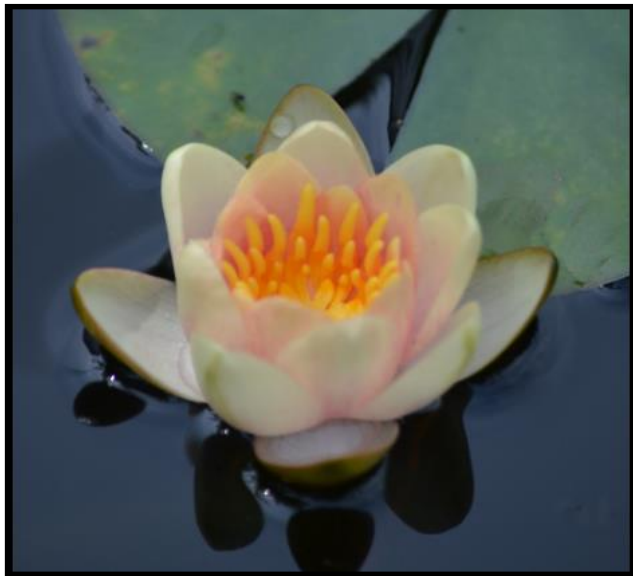
– Spores

Produce  
seeds



# What kinds of plants have flowers?

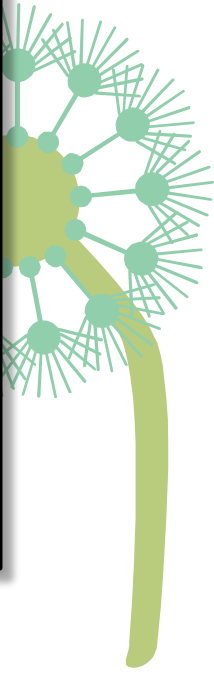
- We also call these angiosperms (enclosed seed)
- Seeds are in a fruit, shell or pod



# What kinds of plants have cones?

## cones?

- We also call these [gymnosperms](#) (naked seed) – only protected by seed coat



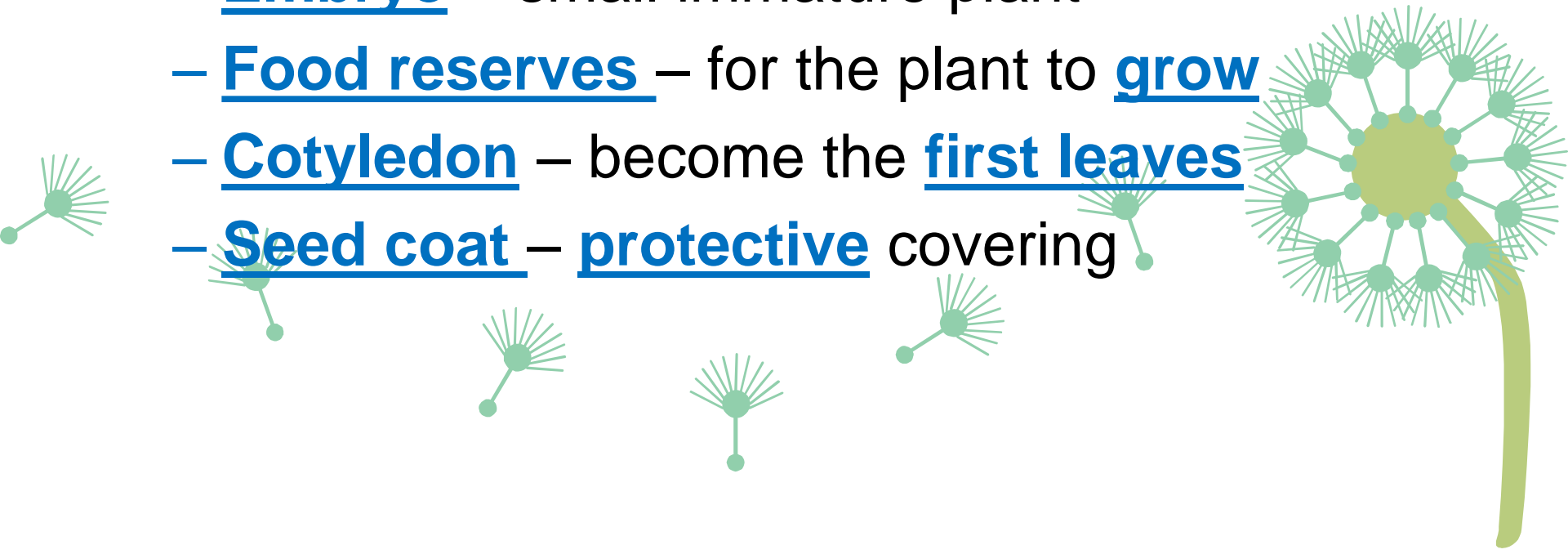
# What kinds of plants have spores?

- Ferns, algae and mosses



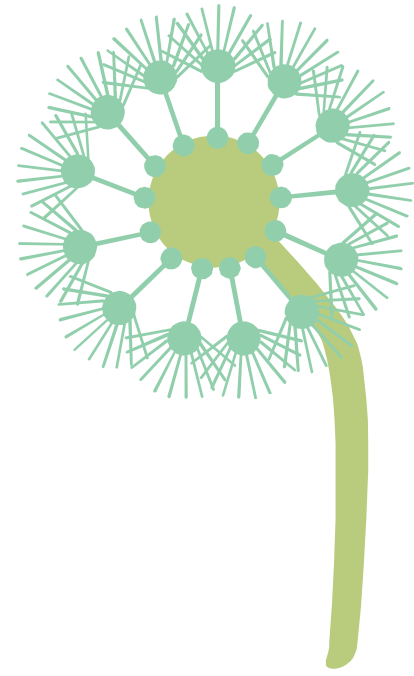
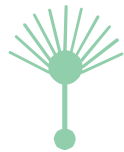
# What is a seed?

- A seed contains everything required to produce a new plant
- It contains:
  - Embryo – small immature plant
  - Food reserves – for the plant to grow
  - Cotyledon – become the first leaves
  - Seed coat – protective covering



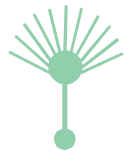


# REPRODUCTION IN FLOWERING PLANTS



# Reproductive Organs in Plants

- Flowers of plants house the reproductive organs of the plant
  - Some plants have flowers that have both the male and female reproductive parts
  - Some plants have separate male and female flowers on the same plant
  - And some plants will produce only one or the other





Male organs

Female organs



Day lily

# Cucumber plant



Female Tree

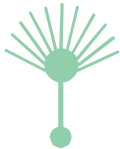
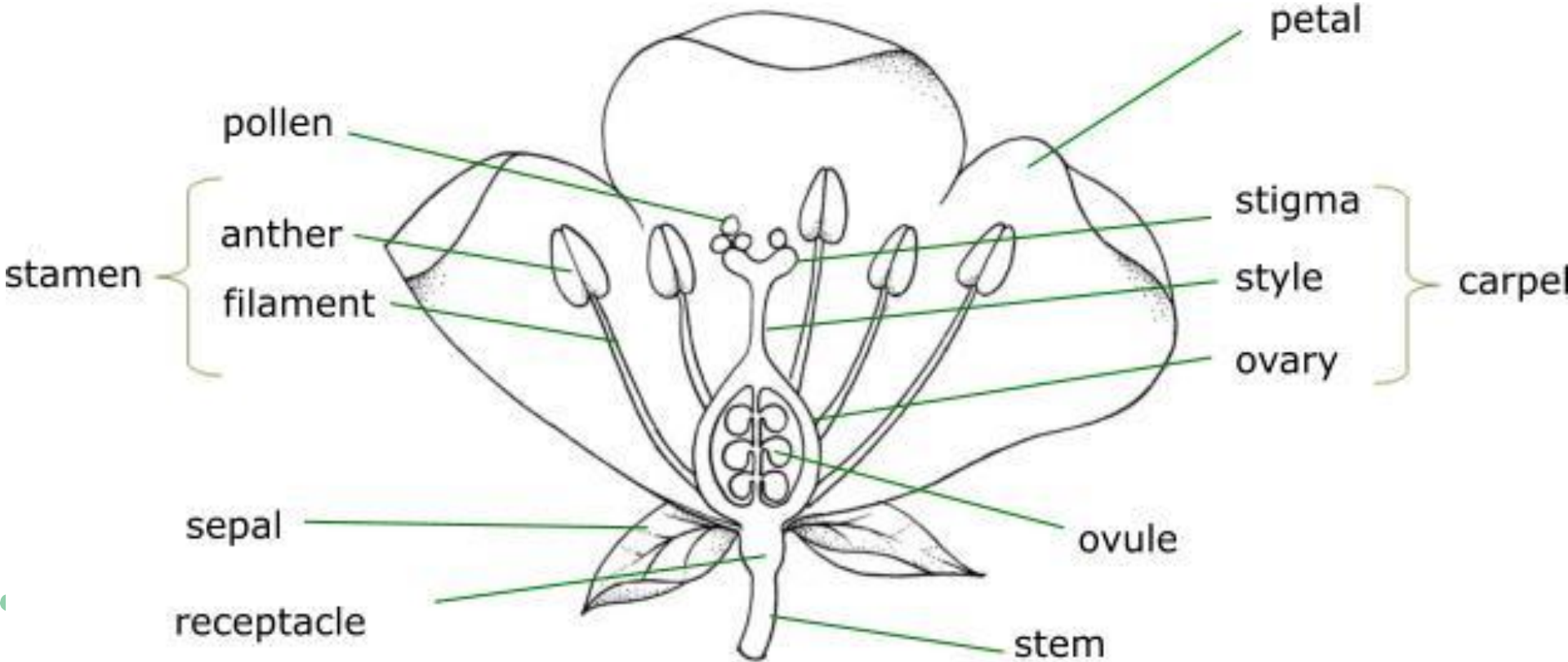


Male tree

Ginkgo Biloba

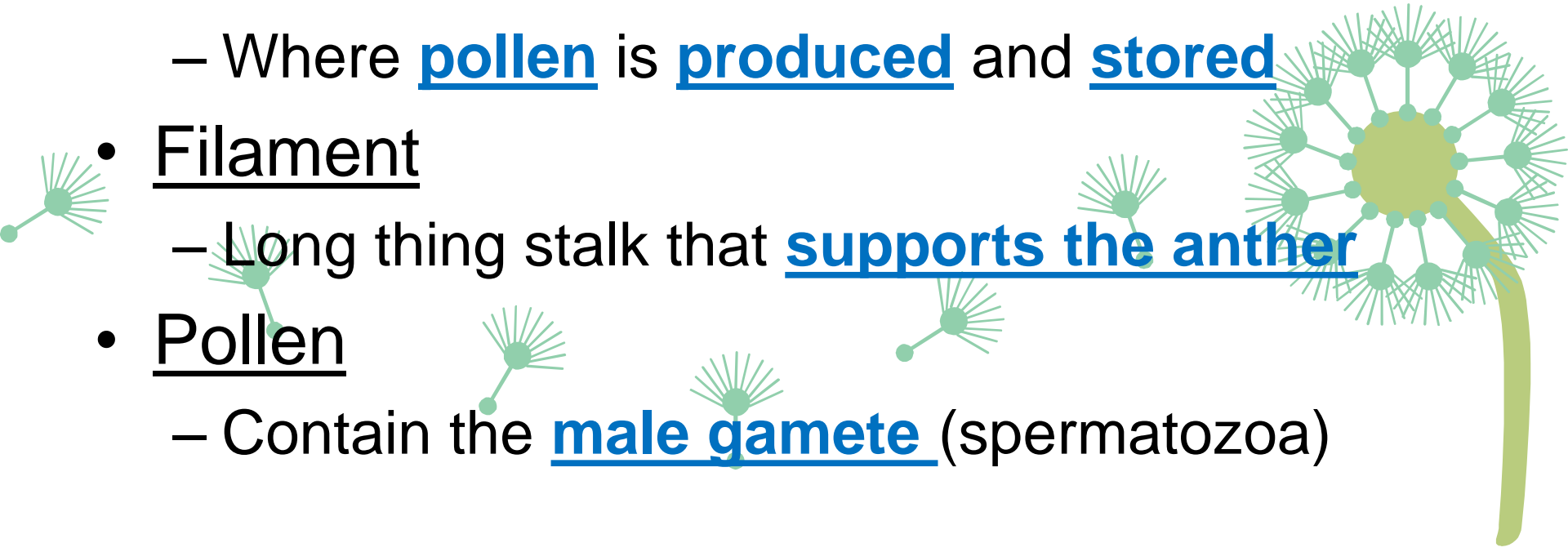
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# Parts of a Flower

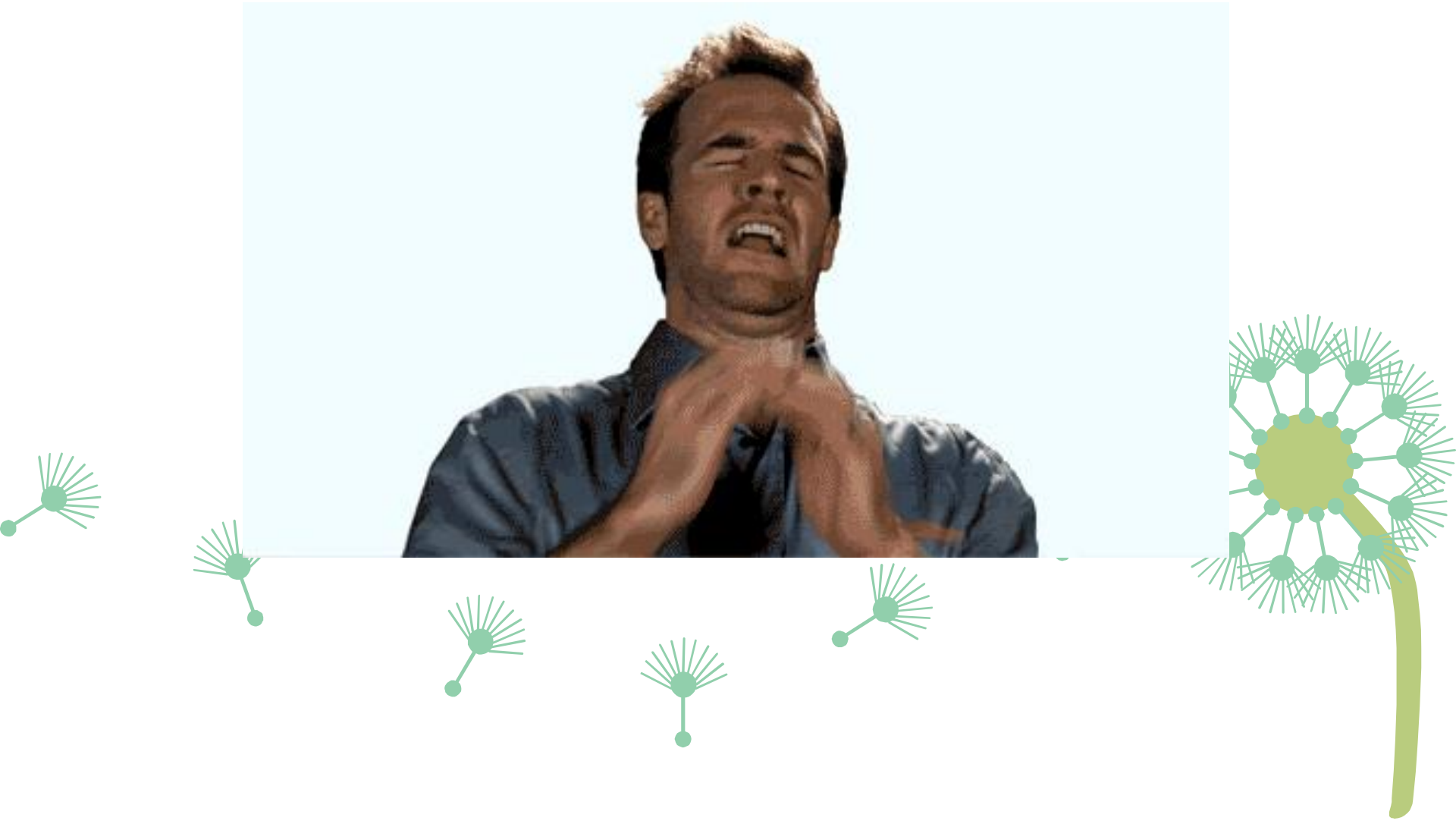


# Male Parts of a Flower

- Stamen
  - male reproductive organ; composed of the anther and the filament
- Anther
  - Where pollen is produced and stored
- Filament
  - Long thin stalk that supports the anther
- Pollen
  - Contain the male gamete (spermatozoa)



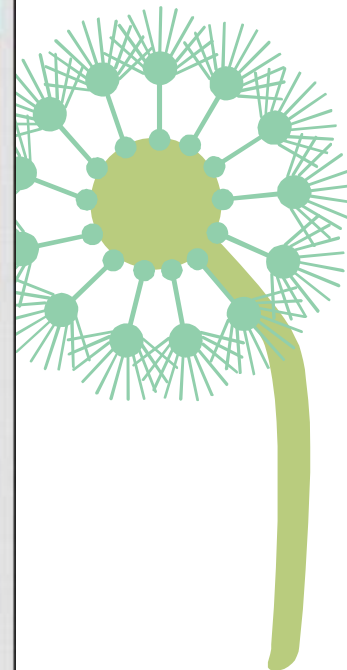
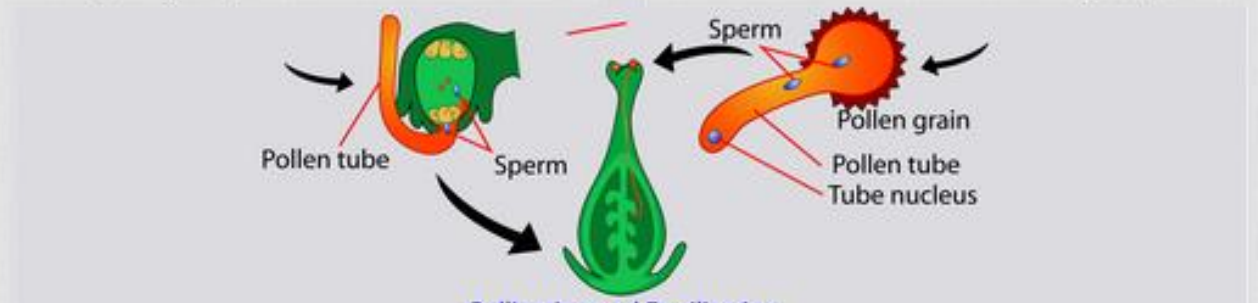
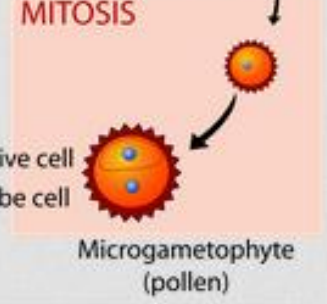
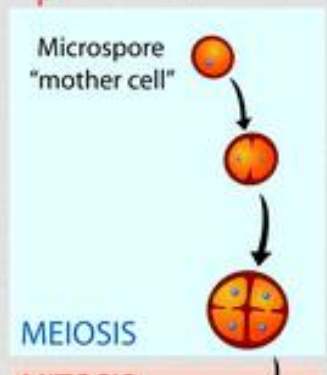
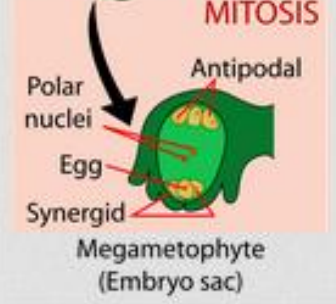
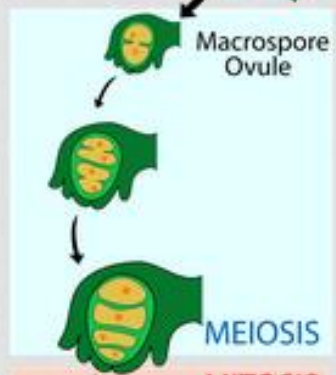
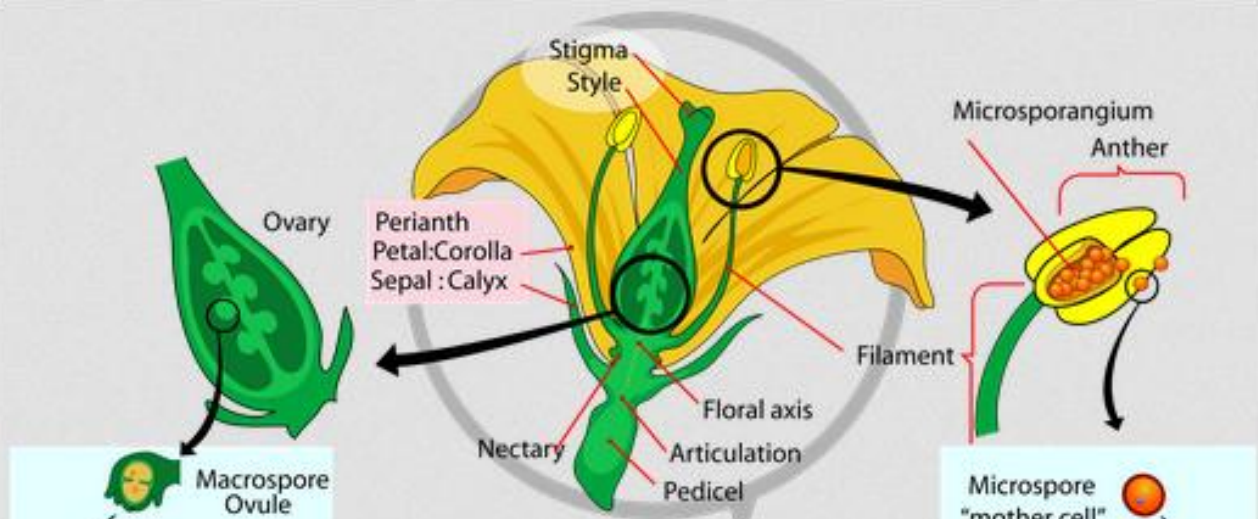
# Yes, pollen is plant sperm!



# Female Parts of a Flower

- Pistil (carpel)
  - Female reproductive organ
- Stigma
  - Sticky surface that captures pollen grains
- Style
  - Stalk that supports the stigma
- Ovary
  - Contains female gametes (ovules)

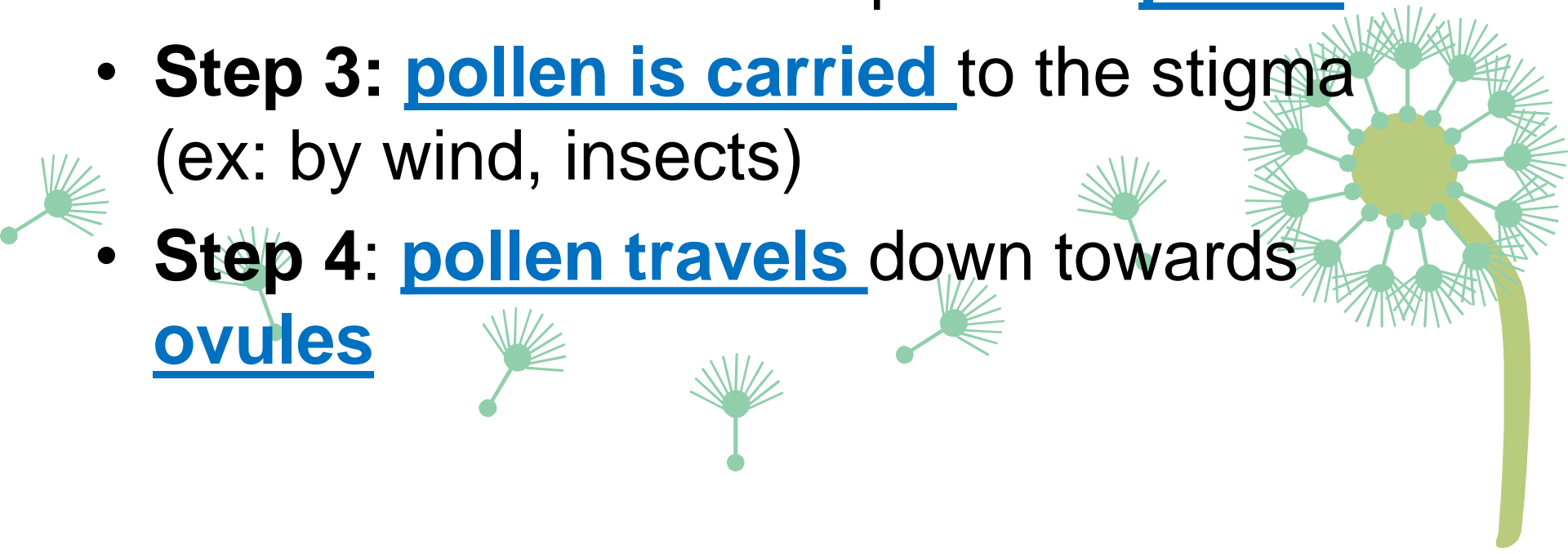






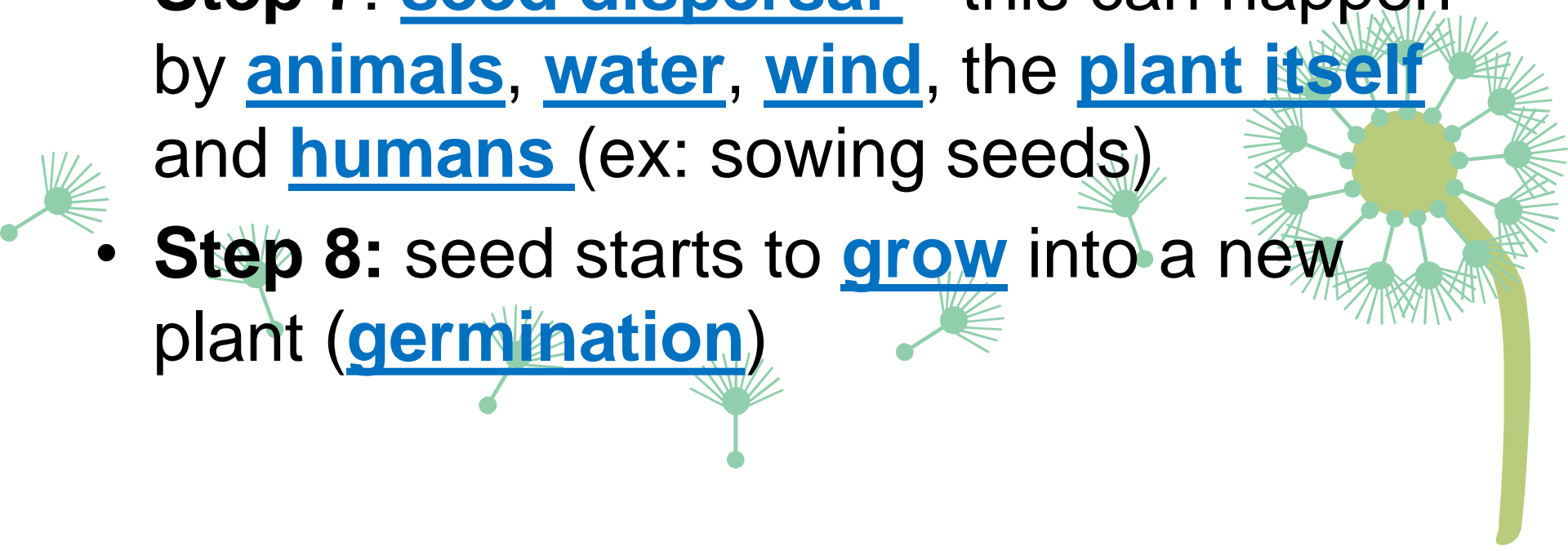
# Plant Reproduction Cycle

- **Step 1:** produce flowers with male and female parts
- **Step 2:** female ovaries produce ovules while the male anthers produce pollen
- **Step 3:** pollen is carried to the stigma (ex: by wind, insects)
- **Step 4:** pollen travels down towards ovules



# Plant Reproduction Cycle

- **Step 5: fertilization** – male and female gametes combine to produce the **zygote**
- **Step 6: seeds develop** (fructification)
- **Step 7: seed dispersal** – this can happen by **animals**, **water**, **wind**, the **plant itself** and **humans** (ex: sowing seeds)
- **Step 8: seed starts to grow into a new plant (germination)**



# WORKBOOK

p. 137-139 (Worlds 1)

