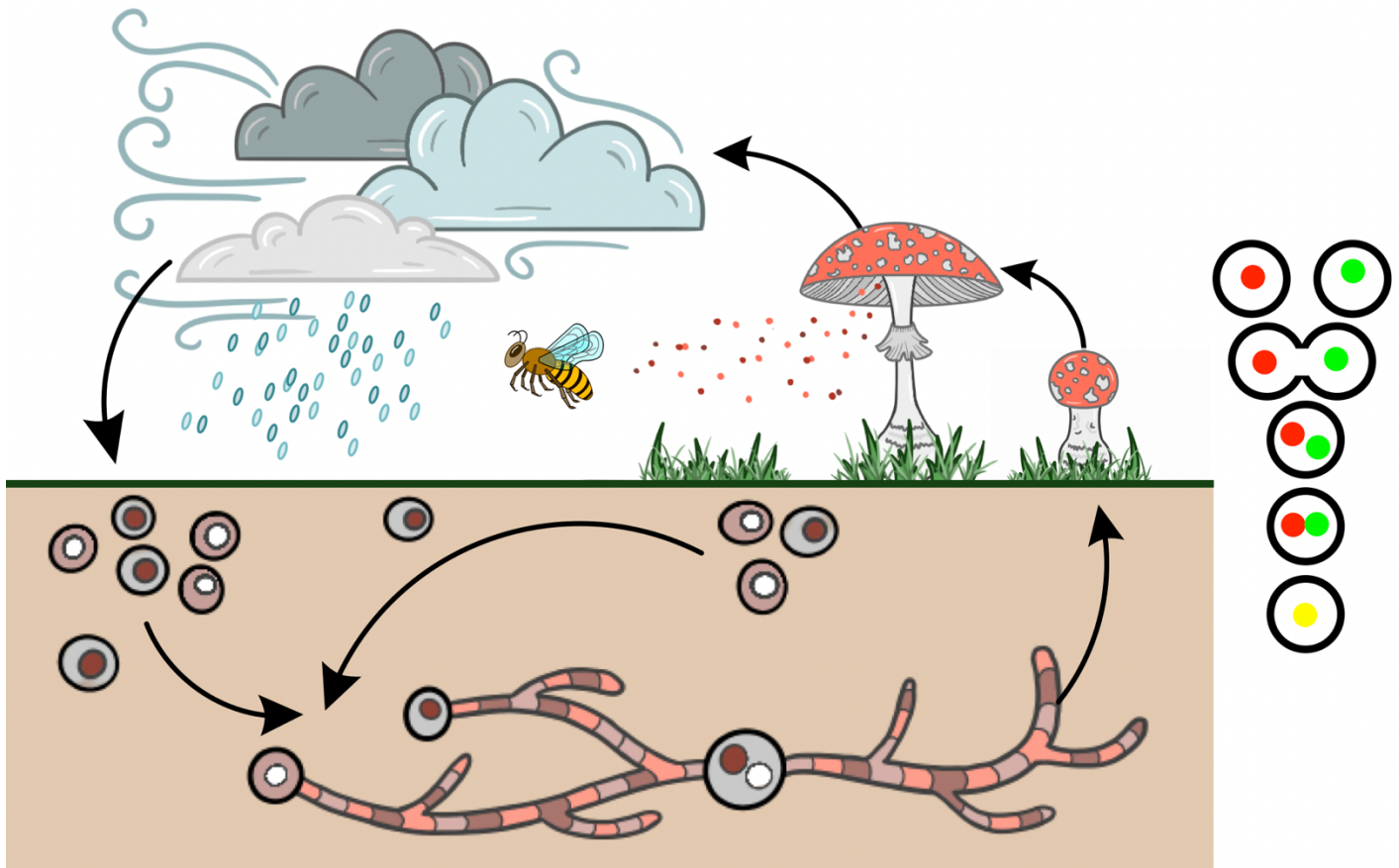


## CONCEPT: FUNGI REPRODUCTION

- Fungi can exhibit sexual and asexual reproduction, and all fungi reproduce using spores
  - **Fruiting body** – spore producing structures, formed during sexual and asexual reproduction
  - **Deuteromycetes** – fungi that only reproduce asexually
- Fungi can have many mating types, but don't appear morphologically different
  - Some species have thousands of mating types, so we don't use a male female dichotomy like other organisms
  - Many fungi use **pheromones**, secreted chemical signals, to identify mating types
- Fertilization occurs by fusion of hyphae and fusion of nuclei, with the exception of some species of chytrids
  - **Plasmogamy** – stage of sexual reproduction in which the cytoplasm of two cells fuse, without the fusion of nuclei
    - **Heterokaryotic** – cell containing two or more nuclei that are genetically different, written as  $n + n$
    - **Dikaryotic** – cell containing two nuclei
  - **Karyogamy** – final stage of sexual reproduction in which the two haploid nuclei fuse, forming a zygote
    - **Zygote** will form a spore producing structure, and is the only diploid stage in most fungi

### EXAMPLE:

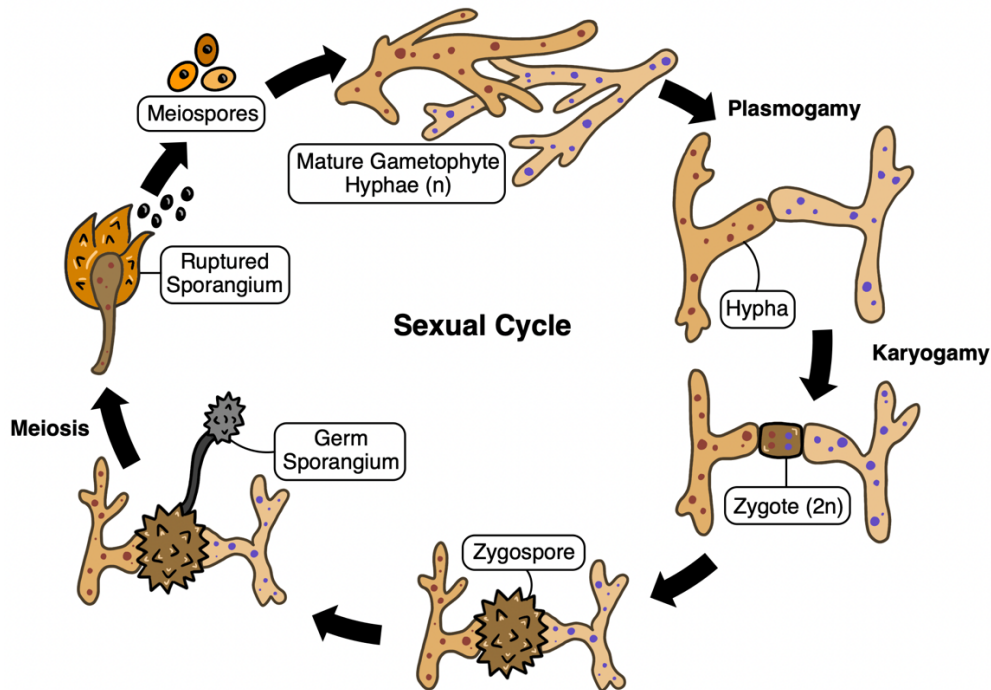


- **Chytrids** – only fungi to exhibit alteration of generations, and produce flagellated spores and gametes
  - **Zoospores** – flagellated spores produced by chytrids

## CONCEPT: FUNGI REPRODUCTION

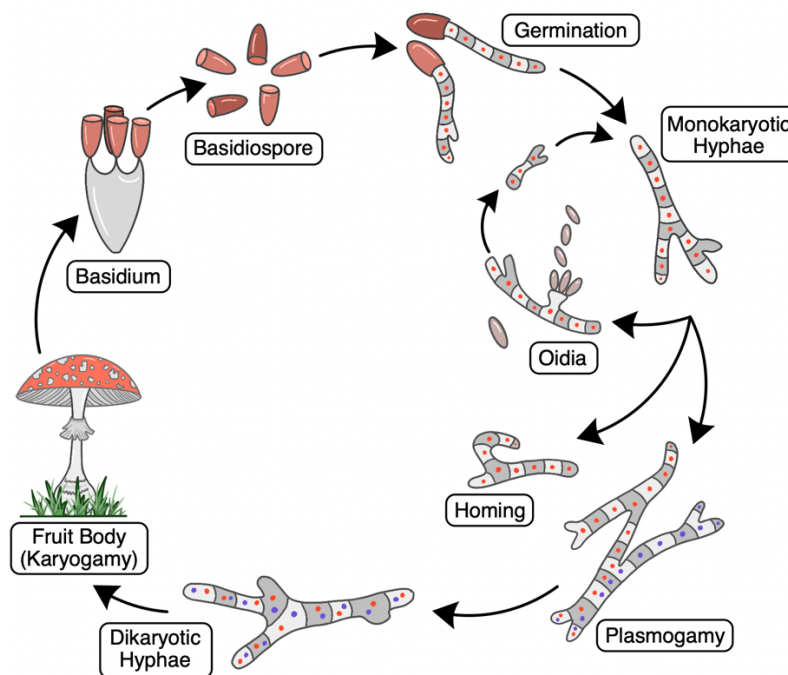
- **Zygomycetes** – plasmogamy leads to zygosporangium, in which karyogamy will occur
  - **Zygosporangia** – spore-producing structures that arise from the fusion of hyphae
  - **Sporangiophores** – stalks with sporangia at their tips that form spores through asexual reproduction

### EXAMPLE:



- **Basidiomycota** – reproductive structures made of dikaryotic hyphae that have basidia on their ends
  - **Basidia** – spore-producing cells in which karyogamy occurs
  - **Basidiocarp** – fruiting body formed from sexual reproduction of mycelia

### EXAMPLE:



## CONCEPT: FUNGI REPRODUCTION

- **Ascomycota** – reproductive structures made of dikaryotic hyphae that form asci on their ends
  - **Asci** – spore-producing structures in which karyogamy occurs resulting in 8 haploid spores
    - **Ascospores** – spores produced in asci
    - **Ascocarp** – fruiting body that contains asci
  - **Conidia** – spores produced through asexual reproduction that can be involved in sexual reproduction

### EXAMPLE:

