3055 BA SANGAM COLLEGE

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WORKSHEET 14

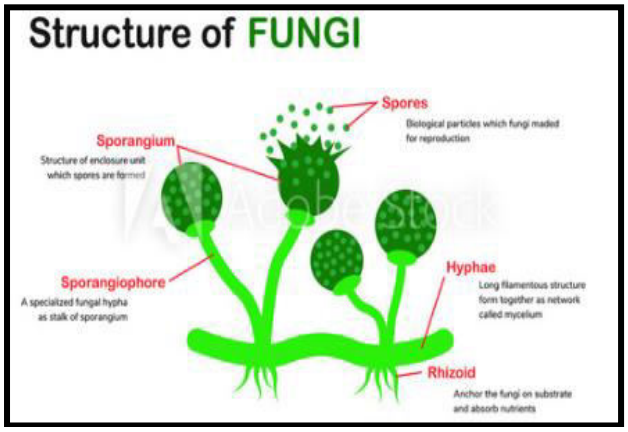
School: **Ba Sangam College** Subject: **Biology**
Year: **13** Name:_____

Strand	**3 Biodiversity Change and Sustainability**
Sub strand	**13.3.2 Diversity Of Life**
Content Learning Outcome B13.3.2.4	**Kingdom Fungi** Describe the characteristics that separate organisms in this kingdom to different categories

Kingdom Fungi

What Are Fungi?

- Fungi (singular, fungus) are a kingdom in the domain Eukarya.
- Most fungi are multicellular, but some exist as single cells.
- Fungi spend most of their life cycle in the haploid state.
- They form diploid cells only during sexual reproduction.
- The cells of fungi have cell walls made of chitin.

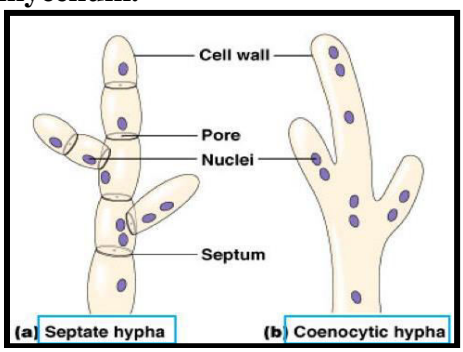


Habitats of Fungi

- Most fungi live on dead matter or soil.
- However, some fungi are aquatic.
- Others live in or on other organisms in symbiotic relationships.

Structure of Fungi

- Except for yeasts, which grow as single cells, most fungi grow as thread-like filaments, called hyphae (singular, hypha).
- There are 2 types of hypha:
- **Septate hyphae** have dividers between the cells, called septa.
- **Non-septate hyphae**, also known as **aseptate** or **coenocytic hyphae**, form one long cell with many nuclei.
- A mass of hyphae make up the body of a fungus, which is called a **mycelium.**



Reproduction of Fungi

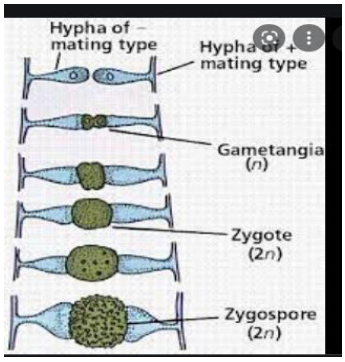
- The majority of fungi can reproduce both asexually and sexually.

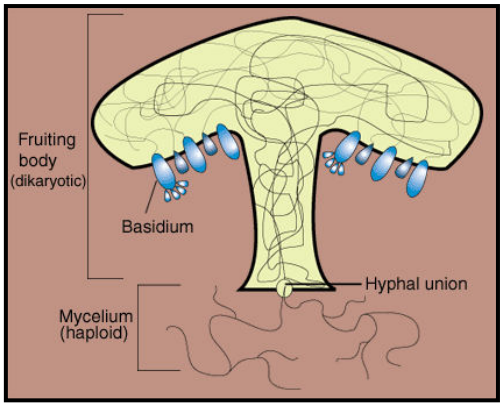
Asexual Reproduction

- Almost all fungi reproduce asexually by producing spores.
- A fungi spore is a haploid cell produced by mitosis from a haploid parent cell.

Sexual Reproduction

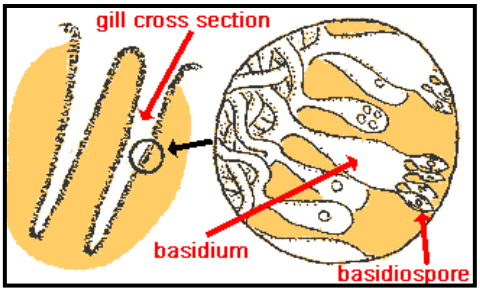
- This involves mating between two haploid hyphae which fuse to form a diploid spore called a zygospore.





Classification of Fungi

- The major phyla of fungi have been classified mainly on the basis of characteristics of their sexual reproductive structures.



Fungal Phyla

CLASS Basidiomycota (The Club Fungi)

- Mushrooms, puffballs, and shelf fungi are all members of this class, as are the plant rusts and smuts.
- This class, which contains approximately 15,000 known species, is distinguished by the presence of a club- shaped reproductive organ called the **basidium.**
- **Basidium** originate as a binucleate, **dikaryotic structure** and serve as a site for **karyogamy** and meiosis.
- Haploid spores grow into tangles of hyphae called mycelia which usually grow under the surface until they meet up with another mycelium.The two then join (plasmogamy) and producing a series of binucleate, dikaryotic hyphae that reach above the ground and form the fruiting body or basidia
    - The cells of the basidia cannot divide by normal mitosis because they produce two daughter cells each with a copy of both parental nuclei.

Reproduction

- Basidiomycota can undergo asexual and sexual reproduction.

Asexual Reproduction

- Basidiomycota reproduce asexually by either budding or asexual spore formation.
- Budding occurs when an outgrowth of the parent cell is separated into a new cell.
- Asexual spore formation often takes place at the ends of specialized structures called **conidiophores.**
- The septae of terminal cells become fully defined, dividing a random number of nuclei into individual cells called conidium.
- The cell walls then thicken into a protective coat.The protected spores break off and are dispersed.

Activity

1. What are the main features of fungal cells?

_____
_____(1m)

2. How do fungi nourish themselves?

_____
_____
_____(1m)

3. Fungi constitute a kingdom. To which class do mushrooms belong?

_____(1m)

4. What is the criterion used to divide fungi into the three classes?

_____
_____
_____
_____
_____(1m)