Chapter 23 Fungi

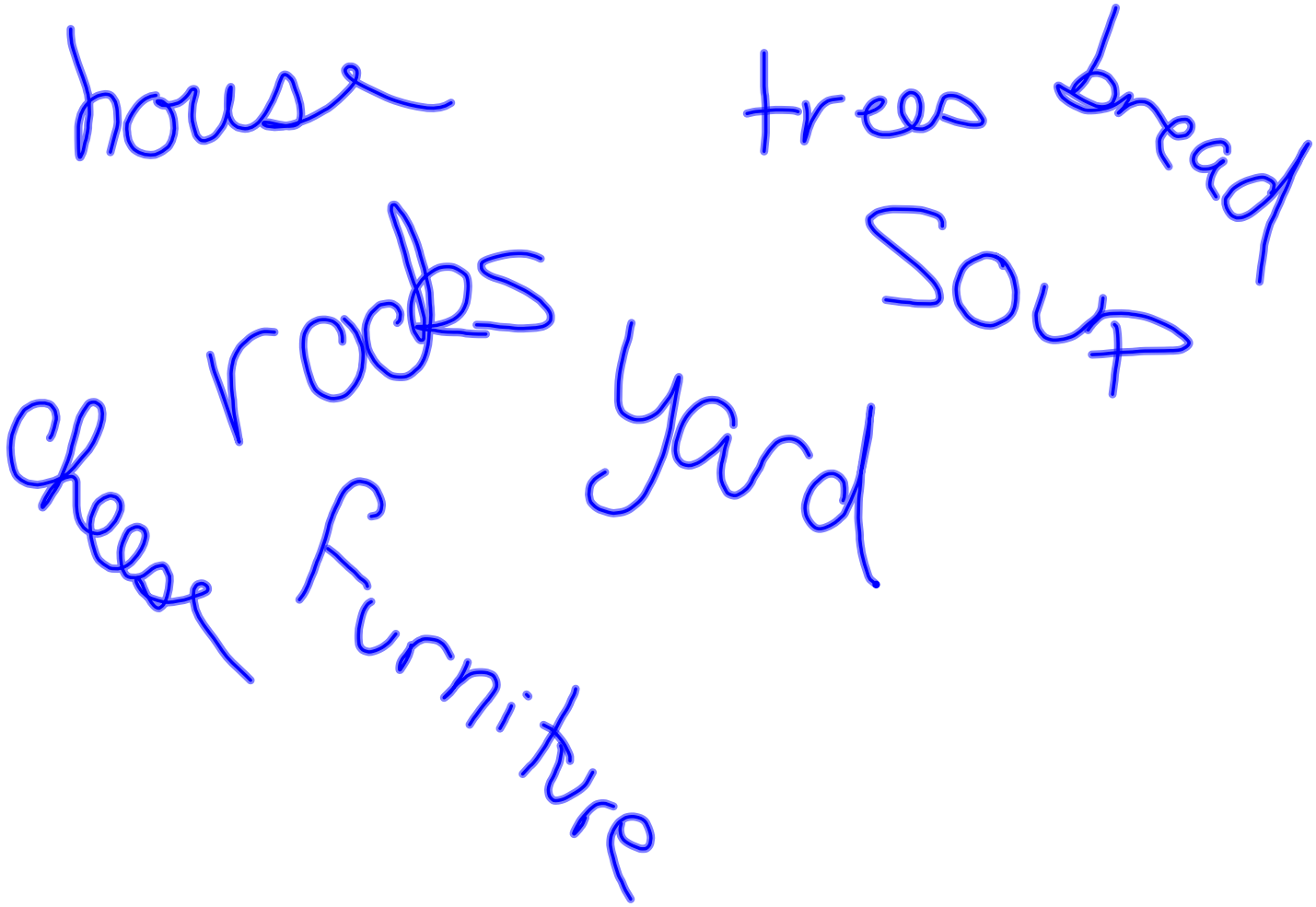
True or False

Fungi are closely related to plants

Fungi are economically valuable.

Many fungi are beneficial to other organisms.

Where have you seen fungus grow?



Some of the most unusual organisms that exists are in this Kingdom

Some grow so fast they can appear overnight

First grouped with plants because they are immobile, have a cell wall, and in soil

Clockwise from top left:
Amanita muscaria, a basidiomycete;
Sarcoscypha coccinea, an ascomycete;
bread covered in mold;
a chytrid;
an *Aspergillus* conidiophore.

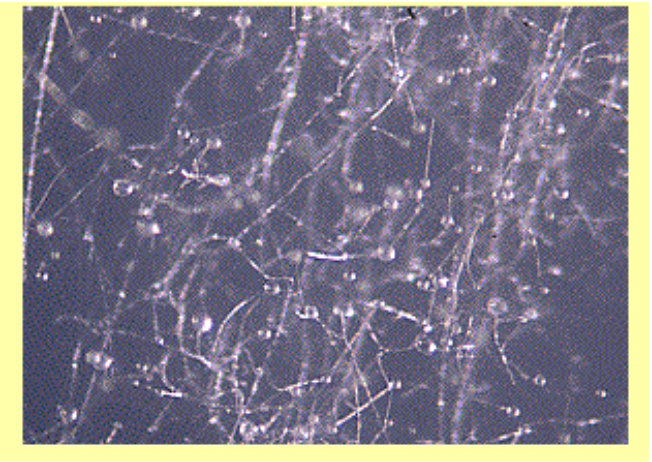
http://en.wikipedia.org/wiki/Fungus

Characteristics of Fungi

Fungi are heterotrophic-
they do not contain chloropyl.

They obtain energy by breaking down organic molecules that they absorb from their environment

Fungi have filamentous bodies- they are made of long slender filaments.

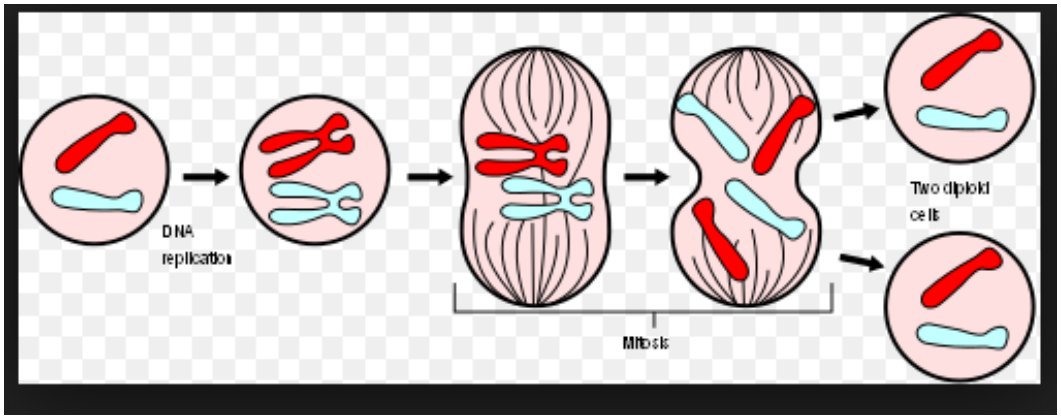


http://www.ucmp.berkeley.edu/fungi/fungimm.html

Fungal cell contain chitin- chitin is a tough polysaccharide found in the shells of insects.

Plants cells are made of cellulose not polysaccharide.

Fungi exhibit nuclear mitosis-
the nuclear membrane does not disappear so chromosomes are dragged to sides of the nucleus not the cell.



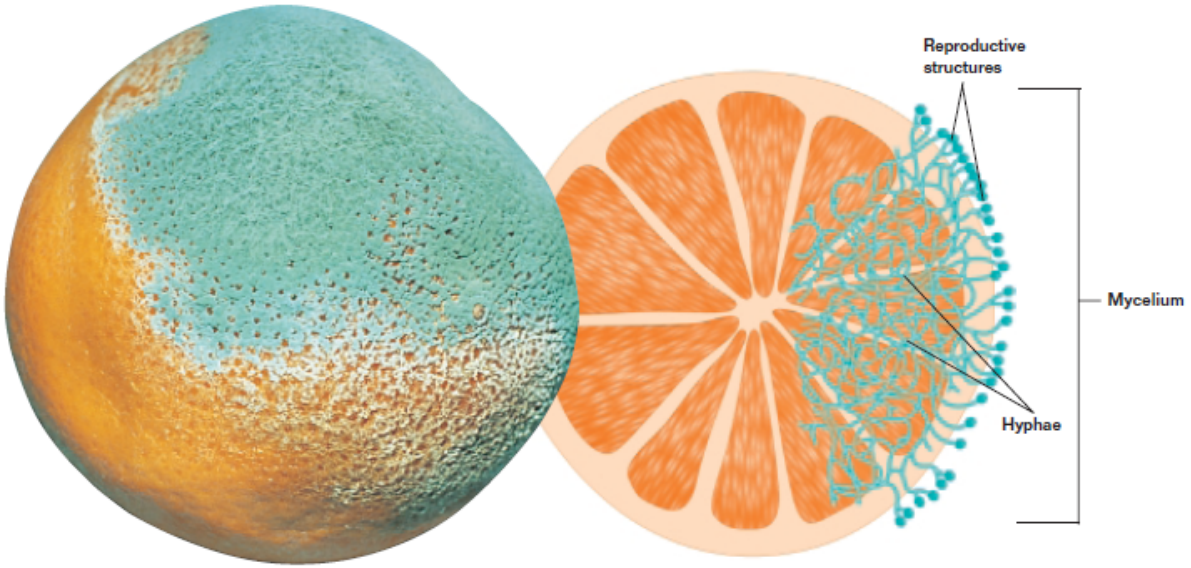
http://www.diffen.com/difference/Meiosis_vs_Mitosis

Fungi are well suited for absorbing nutrients

http://en.wikipedia.org/wiki/Fungus

Bracket fungi on dead log

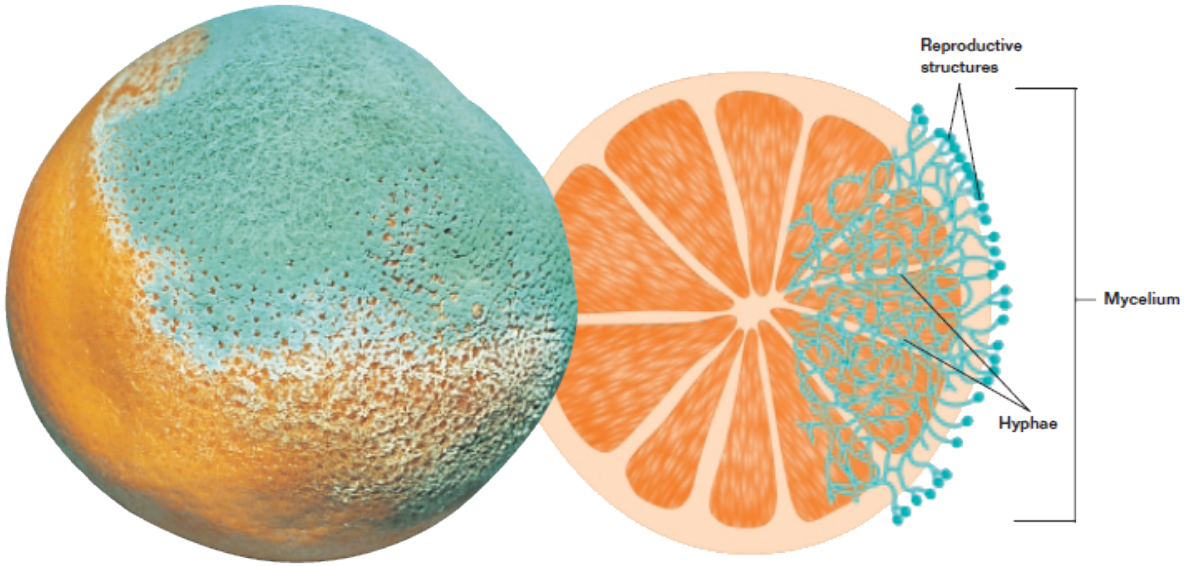
The green and white fuzz is actually the reproductive structure of the fungus. The body of the fungus is inside the orange.



Orange covered with the fungus *Penicillium*

Hyphae- slender filaments in the bodies of fungi

Mycelium-mass of hyphae that form the body if fungus



Orange covered with the fungus *Penicillium*

This high surface area to volume ratio makes to best for absorbing nutrients.

How fungi absorb nutrients.

They secrete digestive enzymes that break down organic matter in their environment.

They can decompose things like leaves, branches , dead animals, and waste

They are recyclers but some are also parasites that live on hosts live ringworm

http://medicallywiseinfo.com/2010/131/ringworm.html

They can cause things like athlete's foot and yeast infection

http://commons.wikimedia.org/wiki/File:Severe_athletes_foot.JPG

Bread fruit, vegetables and meat are as nutritous as a log. They will also attack paper, cardboard, cloth, paint, and leather.

http://moldremediation101.com/types-of-mold/

Unicellular fungi called yeast are useful in baking, brewing, and wine making.

They are also used in making cheese and in making penicillin.

http://www.cookingforengineers.com/article/213/Bakers-Yeast

Fungi reproduce sexually and asexually

They release spores formed sexually and asexually. The reproductive spores grow above the food source so the air can spread them. They can remain in the air for a long time.

What are all the different ways that organisms are classified?

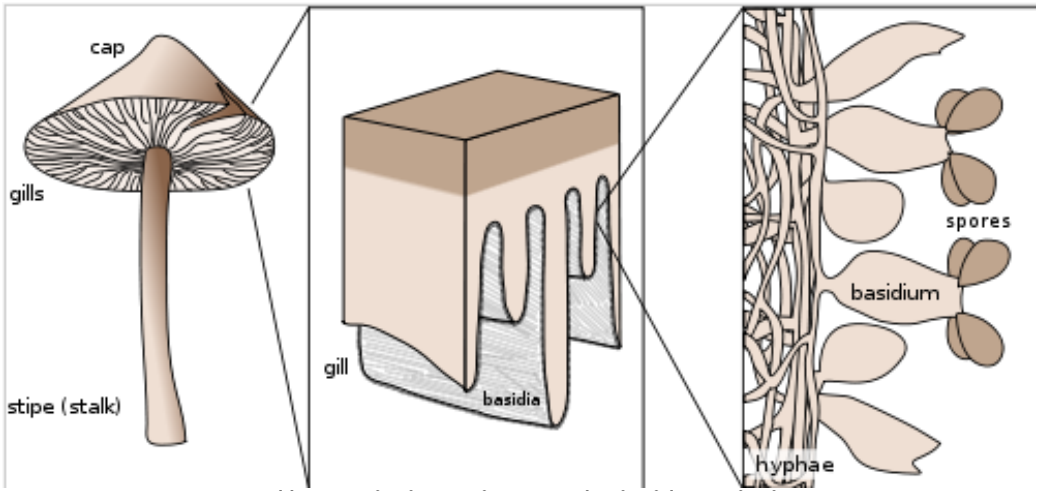
Fungi are classified by their sexual reproductive structures

Asexual reproduction

Deuteromycetes- group of fungi with no sexual stage seen
This includes things like *Penicillium* (makes penicillian), and *Aspergillus* (whi makes Soy sauce) Also cause things lik athlete's foot and ringworm.

This is the group for Common bread mold.

Basidium- the club shaped sexual reproductive structure for which this group is names.

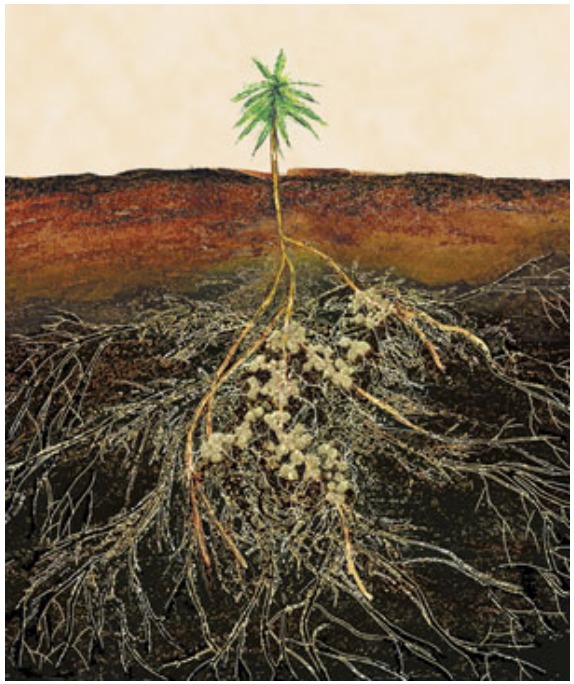


http://en.wikipedia.org/wiki/Basidium

Fungi form symbiotic relationships with plant roots

Mycorrhizae

A type of mutalisitc relationship formed between fungi and vascular plant roots



http://www.finegardening.com/how-to/articles/mycorrhizae-help-feed-your-plants.aspx

Hyphae transfers phosphorus and other materials from the soil to the roots of the plant and the plant gives carbohydrates to the fungus

Fungi form symbiotic relationships with algae

Lichen- symbiosis between a fungus and a photosynthetic partner like green alga, a cynobacteria, or both

Lichen-covered tree: Grey, leafy *Parmotrema perlatum* on upper half of trunk; yellowy-green *Flavoparmelia caperata* on middle and lower half and running up the extreme right side; and the fruticose *Ramalina farinacea*. Tresco, Isles of Scilly, UK

http://en.wikipedia.org/wik