

Unit 3 Classification and Dichotomous keys

https://www.youtube.com/watch?v=F38BmgPcZ_I&t=630s

Dichotomous Key

- Biological tool for identifying unknown organisms
- Made of a series of couplets (2 statements describing a characteristic)
 - Ex: -has wings go to 2
 - no wings go to 3

Practice

- Use the couplets on the dichotomous key lab to identify the following seeds



Experimental Design Review

- Designing experiments begins with a hypothesis.
- Hypothesis = If / then statement describing the relationship between an independent and dependent variable
 - Ex: If I decrease oxygen levels, trout populations will decrease
 - Ex: If the acidity of the soil decreases the number of detritivores

- Independent variable = 1 thing
different between the groups
- Dependent variable = Data (needs to be something measurable)
- Practice
- Ex: If I decrease oxygen levels, trout populations will decrease
 - Identify the independent / dependent variables and control / experimental groups
- Ex: If the pH of the soil decreases

Ways to make experimental results more reliable

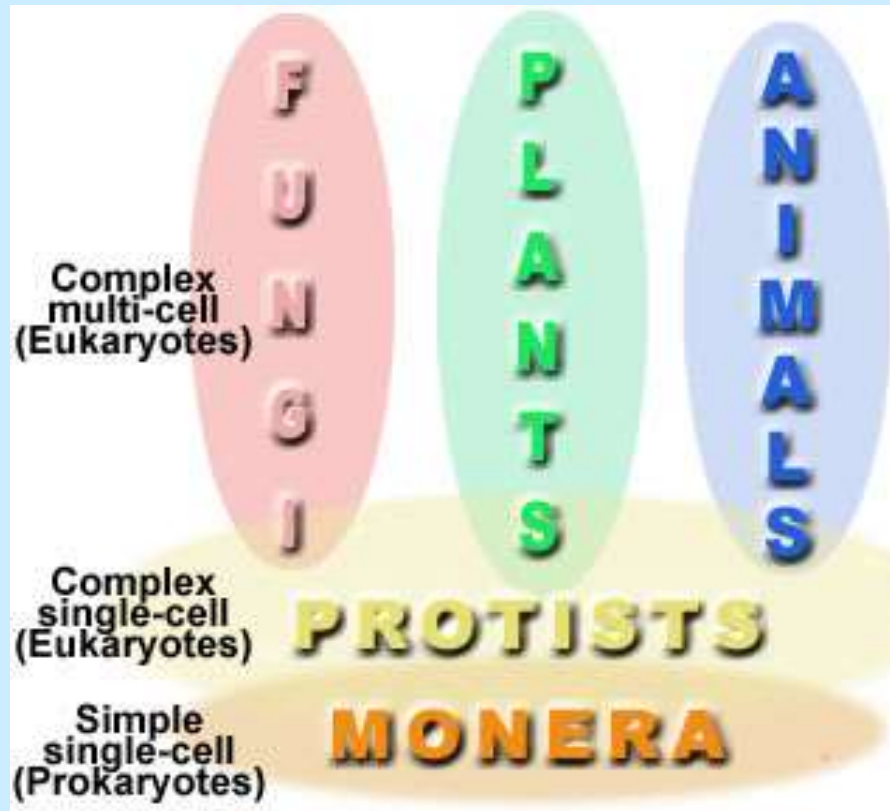
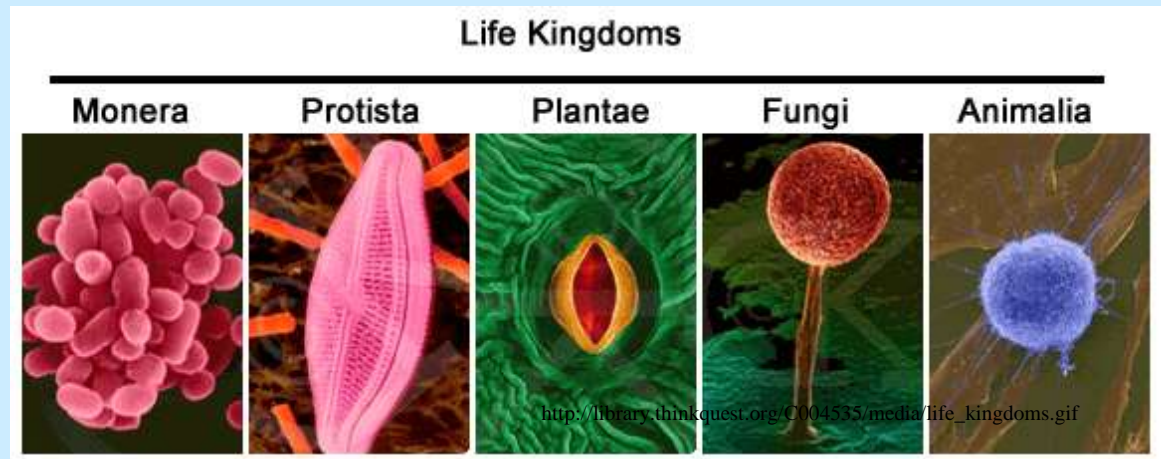
- Large sample size
 - Ex: 100 plants instead of 5
- Repeat and get same results
- Only test 1 independent variable at a time
 - Everything except the independent variable must be the same (controlled factors)
- Include a control group (no changes or normal conditions) to compare experimental groups to.

3 Domains

- Archaeobacteria (prokaryotic – live in extreme environments)
- Eubacteria (prokaryotic)
- Eukaryotic (have nuclei : protists, plants, animals, fungi)

All organisms are related

5 Kingdoms



5 Kingdoms

1. Monera = single celled prokaryotes (no nucleus)
 - Ex: bacteria and blue green algae
2. Protist = single celled eukaryotes
 - Ex: algae, amoeba, paramecium
3. Plant = multi-celled producers (autotrophs)
4. Animal = multi-celled consumers (heterotrophs)
5. Fungi = consumers (heterotrophs)
 - Mushrooms, molds, and yeast (most are decomposers)

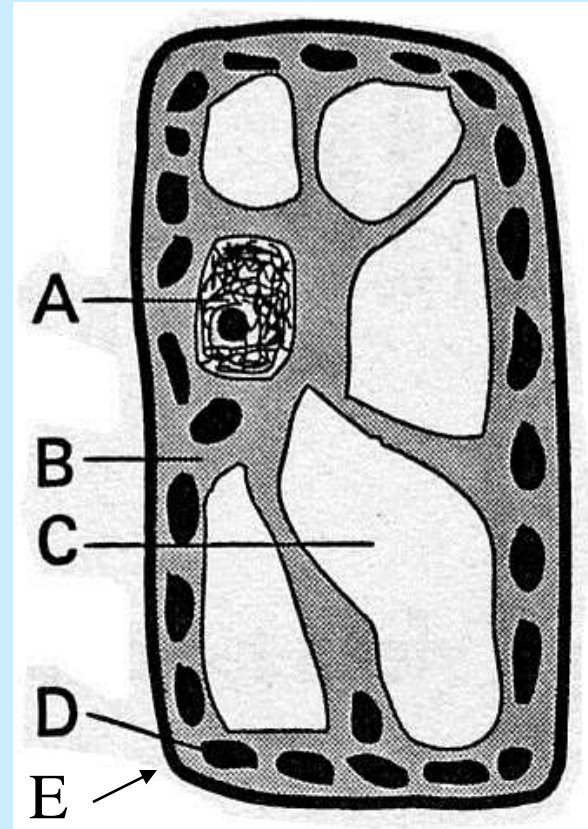
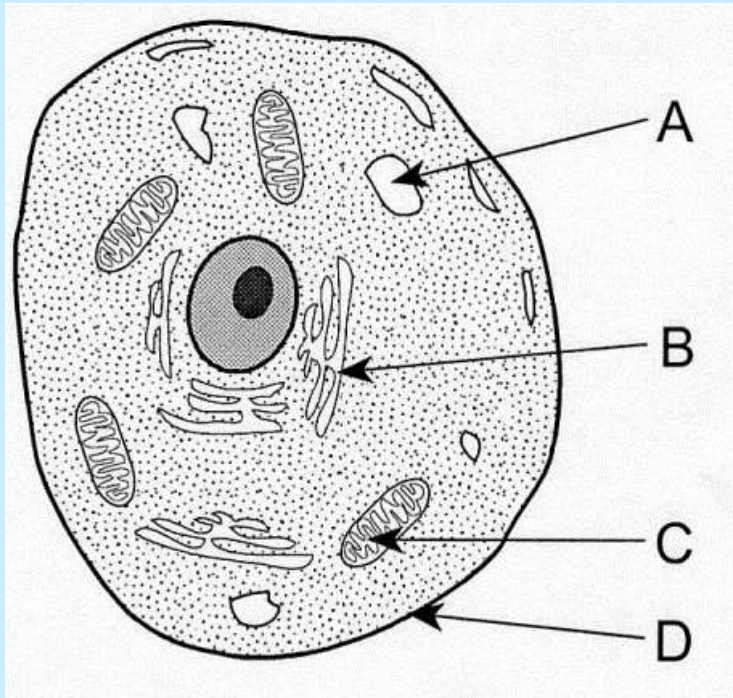
Modern Classification System

- Kingdom
- Phylum
- Class
- Order
- Family
- Genus
- Species
- Least specific
- Most specific
- King
- Phillip
- Can
- Order
- Fizzy
- Grape
- Soda

Members of same species can
mate and → fertile offspring

Practice questions →
dichotomous keys

Animal vs Plant



Animal

- Consumer
(mitochondria → energy
and lysosomes → digest
food)
- Cell membrane only NO
CELL WALLS

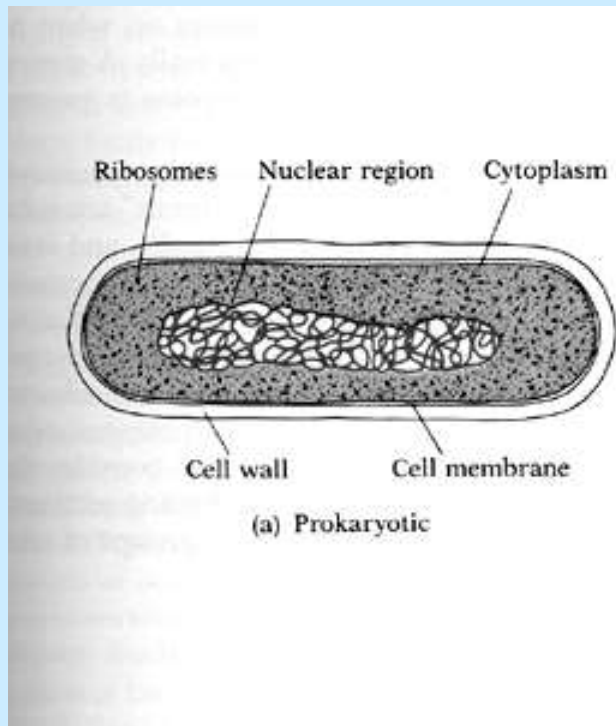
Plant

- Producer
(chloroplasts)
- Cell Wall (made of
cellulose) → definite
shape
- Large vacuoles

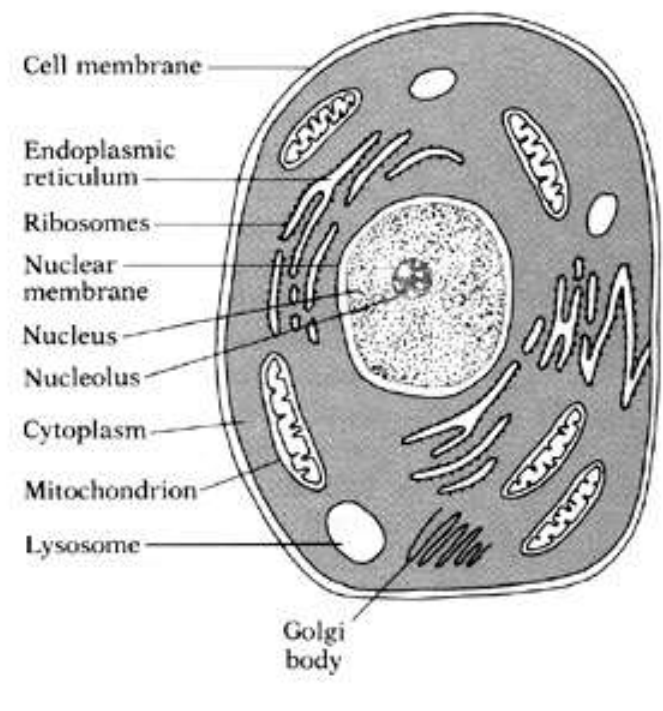
All organisms have adaptations
→ help them survive in their
environment

Simple uni-cellular Prokaryote (no nucleus) = Monera kingdom pro-no-mo

Prokaryotes

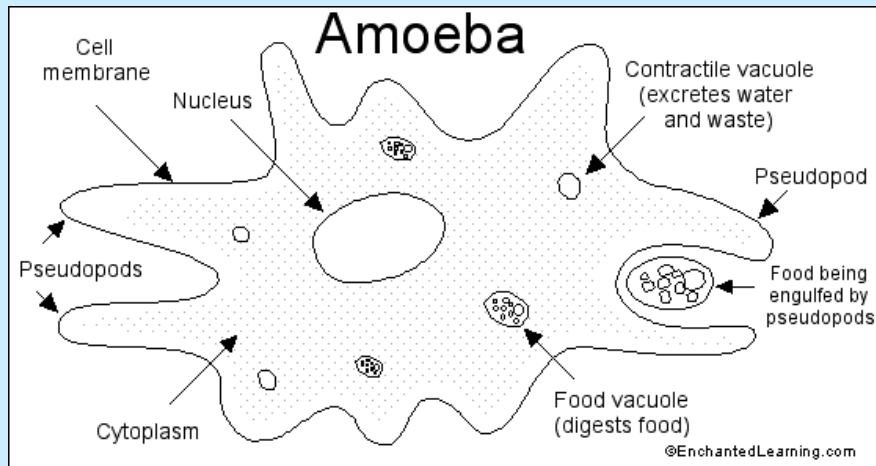


Eukaryotes



Protists

single celled eukaryotes



Paramecium

