Types of Cells and Introduction to Taxonomy

**PROKARYOTES**

Which cell parts we’ve studied DO prokaryotes contain? (4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What do they not have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Generally much smaller than eukaryotes.

Many prokaryotes have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Many bacteria have cell walls made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Extremely metabolically diverse: many food sources, astounding biochemical diversity. Found in every ecosystem.

Two domains of prokaryotes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**EUKARYOTES**: Plants, animals, fungi, and protists

Plant Cells contain 3 cell parts not normally found in animal cells: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Complete entries on cell part chart)

Fungal Cells are distinct from animal cells because most of them have \_\_\_\_\_\_\_\_\_\_\_\_\_\_ made of \_\_\_\_\_\_\_\_\_\_\_

Protists are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and are highly diverse in structure and functions.

**PHYLOGENY**

**3 Domains vs. 5 Kingdoms:**

|  |  |
| --- | --- |
| **3 Domains (Modern)** | **5 kingdoms (traditional)** |
| Bacteria (Prok.) | Monera (Bacteria + Archaea) |
| Archaea (Prok.) | Plantae |
| Eukaryota | Animalia |
|  | Fungi |
|  | Protista |

**Plant Phylogeny: The Big 4 Divisions**

|  |  |  |
| --- | --- | --- |
| Division | Description | Notes |
| Bryophyta | Seedless vascular plants | Mosses, etc. |
| Pterophyta |  | ferns |
|  | Flowerless seed plants | Cones |
| ANGIOSPERMS |  |  |

**Animal Phyla: The Big 9**

|  |  |  |
| --- | --- | --- |
| **Porifera (Sponges)** | **Cnidaria (Jellies)** |  |
|  | **Annelida (segmented worms)** | **Mollusca (mollusks)** |
| **Arthropoda (Arthropods)** | **Echinodermata (Starfish)** |  |

**Fungi**: Not much on the SAT II. Unicellular fungi = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Protista**, a kingdom of convenience

|  |  |  |
| --- | --- | --- |
| Animal-like | Plant-like | Fungi-like |
|  |  | X |

**Plant-like Protists (Algae)**

|  |  |  |
| --- | --- | --- |
| Euglenaphyta |  |  |
|  | Brown Algae |  |
|  |  | Ancestors of Land Plants |

**Fungi-like Protists (Slime Molds)**

|  |  |  |
| --- | --- | --- |
| Plasmodial |  | Single multinucleate cell, spore-former |
|  | Acrasiomycota |  |