**Name: Date: Period:**

**Cells**

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| Some Important Terms | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cell: cell that does not contain a nucleus or any other membrane bound organelles   + Bacteria * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cell: cell that does contain a nucleus and membrane bound organelles   + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells   + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: specialized structures found in cells that perform a variety of jobs   + “Little organs” of cells * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: fluid portion of the cell |
| **Cell Organelles** | |
| Cell Membrane | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ what enters and leaves the cell * Protection * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Found in both plants and animals |
| Nucleus | * Structures:   + Nuclear \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: separates nucleus from rest of cell   + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: ribosomes are assembled here   + Nuclear \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: allows materials to enter and leave nucleus   + Chromatin: contains \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and proteins * Control center of the cell (the “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”) * Contains all \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Found only in eukaryotic cells |
| Chloroplast | * Captures energy from sunlight and converts it into chemical energy 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Found only in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_! |
| Lysosome | * Filled with enzymes * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lipids, carbohydrates, and proteins into smaller molecules * Breaks down broken \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * AKA… Junk collector, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, garbage truck |
| Vacuole | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ water, salt, proteins, and carbohydrates * Large in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Only some animals cells have one and they are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Mitochondria | * Convert chemical energy stored in food into compounds that are more convenient for cells to use 🡪 called cell \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Makes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (energy molecule) * AKA… “Powerhouse” |
| Endoplasmic Reticulum (ER) | * Two types   + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ER: no ribosomes   + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ER: covered in ribosomes * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lipid components of membrane * AKA… “Assembly Line” * Eukaryotes only |
| Ribosomes | * Made of small particles of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Assembles \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (machine in the factory) |
| Golgi Apparatus (GA) | * Modifies, sorts, and packages \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and other materials from the ER for storage in the cell or secretion * Only found in eukaryotes * “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” |
| Cell Wall | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plant cells * Protect * Found only in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells |
| Cytoskeleton | * Structures:   + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   + Microtubules   + Intermediate filaments * Helps cell maintain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Allows for movement of organelles throughout \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Cilia and Flagella | * Cilia – hair-like projections on the outside of a cell   + Used for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Flagella – a “tail” used for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Cell Processes** | |
| More Important Terms | * Active vs Passive Transport   + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ requires energy   + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ requires NO energy * Concentration: the amount of solute in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   + Shorthand = [ ] * Equilibrium: when the concentration is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ throughout   + When the solute is spread out evenly |
| Diffusion | * Molecules move from an area of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ] to an area of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ] in order to reach equilibrium * Passive – NO \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ required |
| Osmosis  Osmosis (continued) | * Diffusion of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through a semipermeable membrane   + Semipermeable: only some stuff can move through it * High [water] to low [water] * Water moves from an area of low [solute] to high [solute] * Goal is to reach \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * **Hypertonic**: solution has a higher [ ] than cell   + hyper = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   + Water will move out of the cell 🡪 cell shrivels up and becomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   + Occurs when you drink salt water * **HypOtonic**: solution has a lower [ ] than cell   + Hypo = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   + Water will move into the cell 🡪 cell expands   + “Thunder storms” in the produce section of a grocery store * **Isotonic**: the [ ] is the same inside and outside the cell   + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ movement into and out of cell |
| Facilitated Diffusion | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ channels allow large molecules to pass through the membrane * Moves molecules from high [ ] to low [ ] * Every protein channel is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Protein Pumps | * Movement of molecules \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the [ ] gradient * Molecules move from low [ ] to high [ ] * Active transport = requires \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (energy) |
| Endocytosis and Exocytosis | * Endocytosis: taking materials \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the cell by infolds of the membrane   + Phagocytosis: bringing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into cell   + Pinocytosis: bringing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into the cell * Exocytosis: materials \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the cell * Type of active transport = requires \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |