

8th grade Cells Week 36 Day 2

Levels of Organization- Multicellular Organisms

You are a multicellular organism, made up of trillions of cells. Each cell cannot get what it needs by itself. The cells are “organized” in ways that they work as a TEAM to get the “needs” for themselves- and for the whole organism.

LEVEL 1 - Cells

- Are the basic unit of structure and function in living things.
- May serve a specific function within the organism
- Examples- blood cells, nerve cells, bone cells, etc.

LEVEL 2 - Tissues

- Made up of cells that are similar in structure and function and which work together to perform a specific activity
- Examples - blood, nervous, bone, etc. Humans have 4 basic tissues: connective, epithelial, muscle, and nerve.

LEVEL 3 - Organs

- Made up of tissues that work together to perform a specific activity
- Examples - heart, brain, skin, etc.

LEVEL 4 - Organ Systems

- Groups of two or more tissues that work together to perform a specific function for the organism.
- Examples - circulatory system, nervous system, skeletal system, etc.
- The Human body has 11 organ systems - circulatory, digestive, endocrine, excretory (urinary), immune(lymphatic), integumentary, muscular, nervous, reproductive, respiratory, and skeletal.

LEVEL 5 - Organisms

- Entire living things that can carry out all basic life processes. Meaning they can take in materials, release energy from food, release wastes, grow, respond to the environment, and reproduce.
- Usually made up of organ systems, but an organism may be made up of only one cell such as bacteria or protist.
- Examples - bacteria, amoeba, mushroom, sunflower, human

Cell Theory

- The 3 Basic Components of the Cell Theory:
 1. All organisms are composed of one or more cells.
 2. The cell is the basic unit of life in all living things.
 3. All cells are produced by the division of preexisting cells.

Cell: What is it?

C-notes

- The smallest unit that can perform all life processes, that is:

Reproduce

Grow/develop

Respond to stimuli

Organized

- Have the same needs:

1. Energy

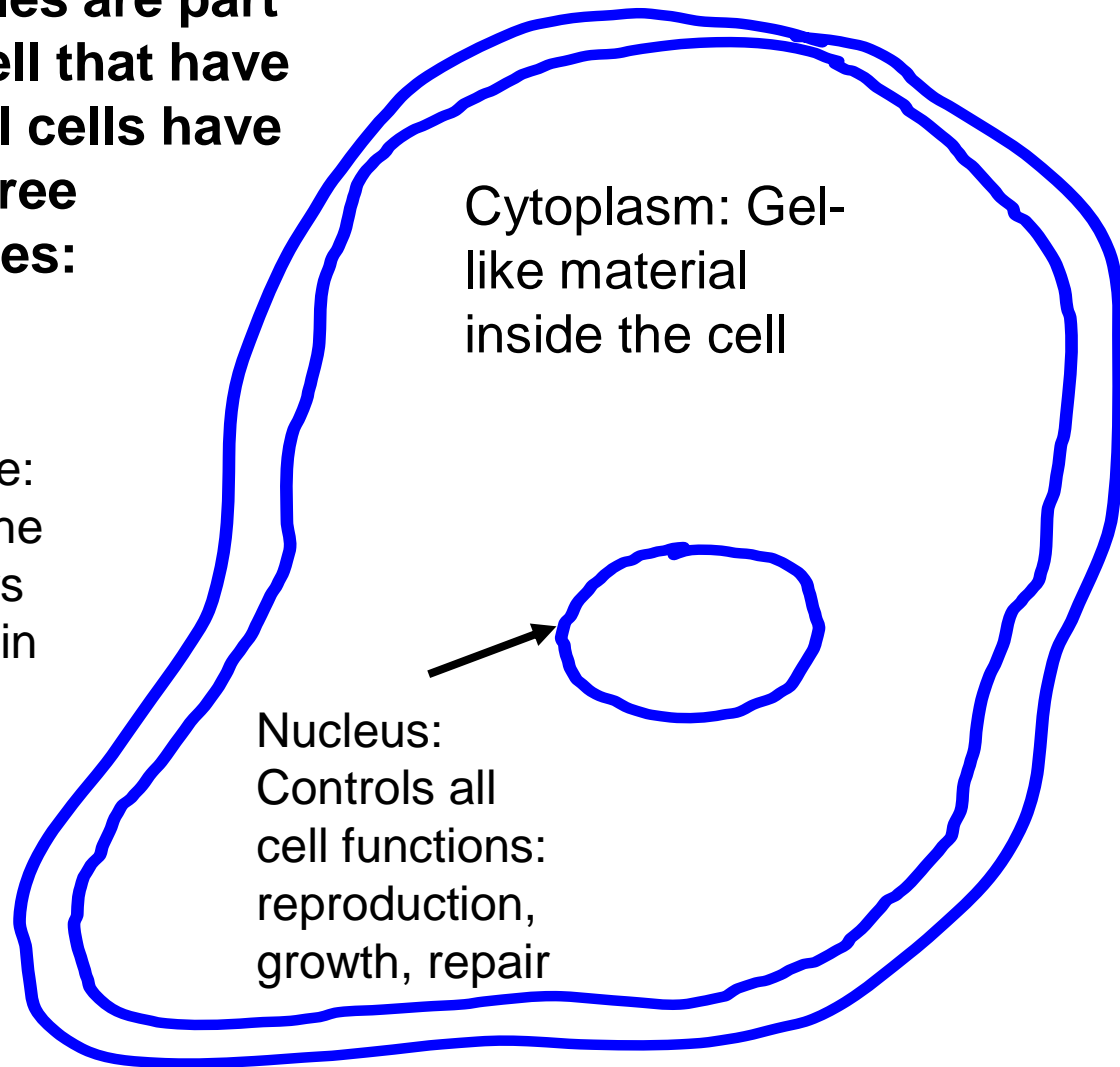
2. Materials (water, oxygen, minerals)

3. Living Space

Basic Cell Organelles

Organelles are part of the cell that have a job. All cells have these three organelles:

Cell Membrane: protects the cell, allows materials in or out



Cytoplasm: Gel-like material inside the cell

Nucleus: Controls all cell functions: reproduction, growth, repair

Functions of Life

1- Make "stuff"

2- Reproduce

3- Get rid of wastes

4- Allow materials in and
out

5- Communicate
information

C-notes

What do cells "do"?

Cells need to:

1- Make "stuff"

• Examples: protein,
macromolecules

• NEEDS- energy,
macromolecules

C-notes

What do cells "do"?

Cells need to:

2- Reproduce

•NEEDS-

energy,

macromolecules

C-notes

What do cells "do"?

Cells need to:

3- Get rid of wastes

• Examples: carbon dioxide, old cell organelles

• **NEEDS**- energy, macromolecules

C-notes

What do cells "do"?

Cells need to:

4- Allow materials in and out

• Examples: proteins, enzymes, macromolecules

• **NEEDS-** energy, macromolecules

C-notes

What do cells "do"?

Cells need to:

5- Communicate
information

- Examples: DNA, RNA
- NEEDS- energy,
macromolecules