

Cell TEST Review

Enduring Understanding: Living things are made of smaller structures called cells. There are differences between different cells because different cells do different things. There are also significant differences between plant cells and animal cells. Substances move into and out of cells because of osmosis and diffusion through the cell membrane.

Animal cell: Usually round shaped. Surrounded by a cell membrane. Full of cytoplasm. Has a nucleus containing DNA

Plant cell: Usually boxy shaped. Has a cell membrane AND a still cell wall. Full of cytoplasm. Has a large storage vacuole. Contains green chloroplasts.

Microscope: A device used to make small things look big. We cannot see cells without a microscope.

Organelle: All the little parts inside of cells that have specific jobs to do: Example: Nucleus, Chloroplasts, Vacuole

Cell membrane: Outer covering that surrounds ALL cells. Chooses which substances it allows to move in an out of cell

Cell wall: Surrounds PLANT cells. Surrounds the outside of the membrane. Makes plants hard. NOT IN ANIMAL CELLS

Nucleus: Controls the cells activities. Kind of like the brain of the cell. Contains DNA.

Cytoplasm: The jelly like fluid in the cell that the organelles float around in.

Diffusion: Process by which molecules move from HIGH to LOW, or A LOT to A LITTLE, or MORE to LESS

Osmosis: Diffusion of water through a cell membrane-Water moves from CLEAN to DIRTY (or to the party)

DNA: Genetic molecules found in the nucleus of cells. Tells cells what to do.

Chloroplast: FOUND IN PLANTS ONLY! Organelles where PHOTOSYNTHESIS (plants make their food) occurs. THEY ARE GREEN!

Photosynthesis: Process where plants make their own food (sugar) using the sun. Only PLANTS do this

Mitochondria: Organelles in plants and animals where food is broken down to release ENERGY

Cell Division (Mitosis): One cell splits to make two identical cells. It is how organisms grow, repair injury, replace dead cells

- Cell Theory:
1. ALL LIVING THINGS ARE MADE OF CELLS
 2. CELLS ARE THE BASIC UNIT OF STRUCTURE (how things are built) and FUNCTURE (how things work) of LIVING THINGS
 3. CELLS COME FROM OTHER LIVING CELLS

PARENT SIGNATURE

X- My child studied for at least 15 minutes AND taught someone else in our family this information in preparation for the test tomorrow: _____

Key Concept: Cells are the basic units of structure and function in living things.

- **Cells** make up the structures in all living things. Cells also carry out all of the functions, or jobs, of living things.
- Living things look like they do because of the different ways cells are put together.
- The different things that living things do are all done by cells. For example, digesting food, moving, and growing are all done by cells.
- Cells are so small that they cannot be seen with your eyes alone.

1. Cells make up the _____ in all living things.
2. Cells carry out all the _____ of living things.
3. _____ True or false? You can see cells with just your eyes alone.

Key Concept: The invention of the microscope made it possible for people to discover and learn about cells.

- A **microscope** is a tool that makes small objects look larger.
- Many microscopes work by using curved pieces of glass or plastic to focus light.
- Robert Hooke was an English scientist who was one of the first people to see a cell with a microscope.

4. Circle the letter of what a microscope does.
a. makes large objects look smaller b. makes small objects look larger c. makes faraway objects look closer

Key Concept: The cell theory states the following: All living things are composed of cells. Cells are the basic units of structure and function in living things. All cells come from other living cells.

- As more and more scientists used microscopes to observe cells, they learned that cells are the building blocks of living things.
- Many different scientists worked together to develop the cell theory. The **cell theory** explains the relationship between cells and living thing.
- The cell theory is true for all living things. Scientists can study cells to learn how living things function and grow.

5. Circle the letter of each sentence that is true about cells.
a. Not all living things are made of cells. b. The cell theory explains how cells are made.
c. Scientists learn how living things function by studying cells.

Key Concept: A plant's cell wall helps to protect and support the cell. The cell membrane controls what substances come into and out of a cell.

- An **organelle** is a structure in the cell that has a specific function.
 - The **cell wall** is a stiff layer that protects and supports the cell. Animal cells do not have cell walls.
 - The **cell membrane** forms the boundary between the cell and its environment. The cell membrane controls what goes in and out of a cell.
6. A structure inside a cell that has a specific function is a(an) _____.
 7. A stiff layer that protects and supports a plant cell is the _____.
 8. The cell boundary that controls what goes in and out of a cell is the _____.
 9. Is the following sentence true or false? Animal cells do not have a cell wall.

Key Concept: Think of the nucleus as the cell's control center, directing all of the cell's activities.

- The cell **nucleus** (NOO klee us) is the control center of the cell.
- The nucleus holds the genetic information (DNA). The genetic information controls what the cell does.

10. Circle the letter of each sentence that is true about the nucleus.
a. The nucleus is the control center of the cell.
b. The cell membrane protects the nucleus.
c. The nucleus holds the genetic information.

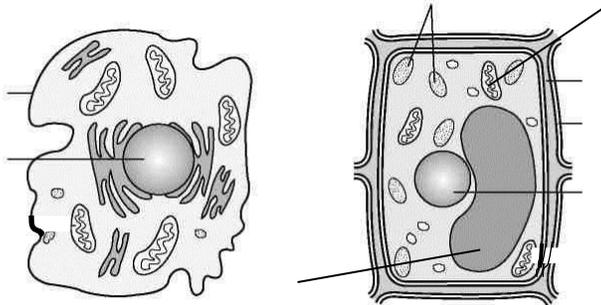
Key Concept: The cytoplasm has many organelles that carry out the life functions of a cell.

- The **cytoplasm** is the thick, gel-like fluid found between the cell membrane and the nucleus. The cytoplasm hold many organelles.
- Only plants cells have chloroplasts. **Chloroplasts** are green organelles that capture the energy from sunlight and use it to make food in a process called photosynthesis.

11. Circle the letter of the gel-like fluid found between the cell membrane and the nucleus.

- a. organelle b. cytoplasm c. nuclear envelope

12. The picture shows two different cells. One cell is an animal cell. The other cell is a plant cell. Label the cells as either plant or animal. Use the following words to label the parts: nucleus, cell membrane, cell wall, chloroplasts, cytoplasm, mitochondria, vacuole (the words can be used more than once)



Key Concept: Diffusion is the main method by which small molecules move across the cell membrane.

- The cell membrane lets only some substances pass through it. Oxygen, food, waste products, and water are substances that can pass through the cell membrane.

- **Diffusion** is when substances move from an area of high concentration to an area of low concentration. It is like when people spread out from a crowded space to a less crowded space.

Answer the following questions. Use your textbook and the ideas above.

13. Is the following sentence true or false? In diffusion, substances move from areas of high concentration to areas of low concentration.

14. The pictures show particles of a substance spread inside and outside a cell. Circle picture that shows how the particles look before diffusion has taken place.



Key Concept: Because cells cannot function properly without adequate water, many cellular processes depend on osmosis.

- **Osmosis** is the diffusion of water across a cell membrane.
- In osmosis, water moves by diffusion through the cell membrane to an area of low water concentration (from clean to dirty or water moves “to the party”).
- Water moves out of the cell if there is more water inside the cell than outside the cell. Cells shrink when water moves out.
- Water moves into the cell if there is more water outside the cell. Cells swell, or get larger, when water moves in.

15. Circle the letter of how water moves in osmosis.

- a. across a cell membrane b. to areas where there is more water c. downhill

16. When water moves into a cell, the cell _____.

17. When water moves out of a cell, the cell _____.

Be able to draw and label an animal cell with its 4 parts and a plant cell with its parts.

Plant Cells and Animal Cells Have Their Differences

You need to be able to draw these two cells WITH ALL THE DETAILS for each.

Animal Cell

Plant Cell

4 THINGS THEY BOTH HAVE IN COMMON:

3 EXTRAS THAT ONLY THE PLANT CELL HAS:

