

Name: _____

Study Me

Date: _____



GENIUSCHALLENGE

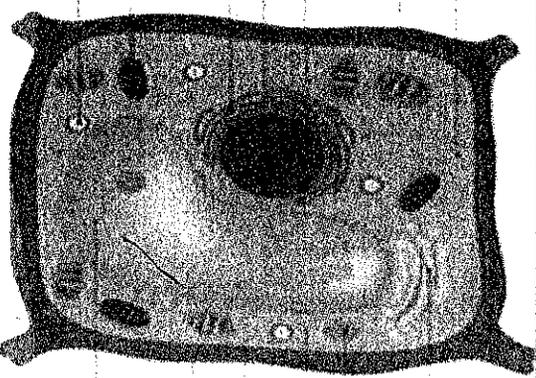
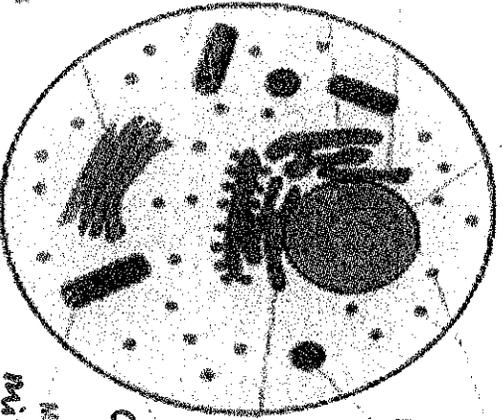
PLANT AND ANIMAL CELLS

1. A Cell is the basic unit of all living things.
2. The parts of a cell that help it function are called organelles.
3. List 3 different organelles found inside of a cell:
 - a. Nucleus - stores DNA, the code for making All Living Things.
 - b. Vacuole - stores fluids / Very large in plant cells
 - c. Mitochondria - mighty powerful / converts sugar to energy
4. Name two organelles found in plant cells that are not found in animal cells:
 - a. Cell wall
 - b. Chloroplast where photosynthesis happens
5. The function of the Vacuole is to store fluids for the cell.
6. The function of the Lysosome is to help the cell get rid of waste.
7. The mitochondria is often referred to as the powerhouse of the cell since it is where sugar is used to generate energy.
8. The Chloroplast of a plant cell are where photosynthesis takes place.
9. What do you call an organism made of only 1 cell? unicellular ex. Amoeba
10. What is the difference between a cell wall and cell membrane?
cell wall - gives structure / only in plants
cell membrane - thin, allows materials to pass through it

DNA - Deoxyribo Nucleic Acid

Living things must
 • take in nutrients
 • grow
 • reproduce

All cells
 • use energy
 • get rid of waste
 • contain genetic material

Image A	Image B
 <p>Labels for Image A:</p> <ul style="list-style-type: none"> Cytoplasm Chloroplast Nucleus Mitochondria Cell membrane Cell wall Vacuole <p>Additional labels: Chloroplasts, Photosynthesis (The process of making sugar from Carbon Dioxide, water + sunlight), Cytoplasm, Vacuole, Cell membrane, Cell wall, Vacuole.</p>	 <p>Labels for Image B:</p> <ul style="list-style-type: none"> Nucleus Cytoplasm Lysosome Mitochondrion Cell membrane <p>Additional labels: Nucleolus, Nuclear Envelope, Nucleus, Cytoplasm, Golgi Apparatus, Endoplasmic Reticulum, Cell Membrane, Mitochondrion, Lysosome, Ribosome, Cell Membrane, Mitochondrion.</p>

All are organelles

- Cell membrane
- Cell wall
- Lysosome
- Chloroplast
- Mitochondria
- Vacuole
- Nucleus

unicellular - made of 1 cell like the Amoeba
 multicellular - made of many cells working together

- The human body is made up of 200 different TYPES of cells.
- All cells are structured the same.
- All cells are approximately the same size.

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GENIUSCHALLENGE

BACTERIA AND VIRUSES

1. How does the size of a bacterial cell compare with an animal cell?

Bacteria is 100 times smaller.

2. How do bacteria make more of themselves? Copy the DNA and split in half

3. Describe two ways you can prevent the spread of bacteria.

wash hands and use antibiotics

4. Why are colds and flus not treated with antibiotics? Colds and flu are caused by viruses, which do not respond to antibiotics.

5. Explain how a virus makes more of itself. Hijack mostly bacteria cells and inject genetic material inside to make copies of themselves.

6. What part of the body does COVID-19 infect? Lungs

7. Why should people stay home when they are sick? Not to spread viruses

8. What does a virus inject into a cell? genetic material / DNA

9. What is a vaccine? shots, liquids or nasal sprays

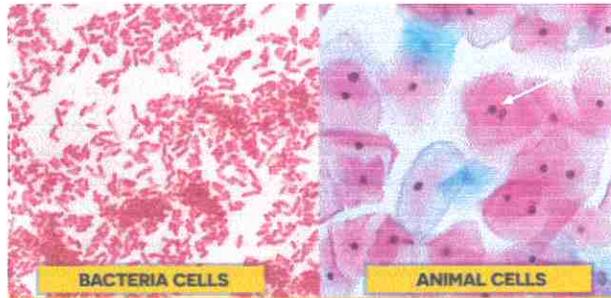
Trains the body to identify and destroy invader cells

10. Name two ways bacteria are helpful instead of harmful. used to make cheese and yogurt

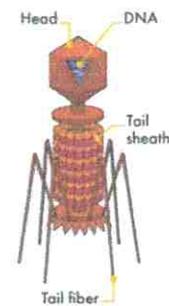
Bacteria and Viruses

All cells take in nutrients
 Reproduce
 Contain DNA

Bacteria are living organisms made of one cell that are found all over the world. They reproduce by copying the DNA or genetic material and splitting in half. Bacteria grow slower in the cold. Antibiotics will destroy bacteria but not viruses. Penicillin is an antibiotic made using a fungus.



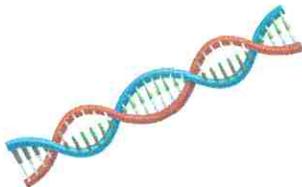
Viruses are a tiny part of genetic material surrounded by a protective protein coat known as a **capsid**. Viruses do not reproduce or make their own food. They reproduce by hijacking mostly bacteria cells and injecting the cell with virus DNA, making copies of themselves. Viruses are difficult for scientists to classify as living things because they don't eat, move on their own or reproduce on their own. Viruses are the cause of COLDS AND FLU. Antibiotics do not have any impact on viruses.



Complex viruses,

The human immune system fights off intruder cells.

DNA = deoxyribonucleic acid / Genetic material



The instruction manual inside almost every cell of your body that makes you who you are. It looks like a twisted ladder called a **double helix** and contains codes for your hair color, eye color, and height.