

Cells and Their Organelles Name _____

The cell is the basic unit of life. All cells are surrounded by a **cell membrane**. The cell membrane is semipermeable, allowing some substances to pass into the cell and blocking others. *Color and label* the cell membrane on the plant and animal cell tan. Plant cells have an additional layer surrounding them called the **cell wall**. The cell wall is made of nonliving material called cellulose. *Color and label* the cell wall brown.

1. What surrounds all cells? _____
2. What is meant by semi-permeable? _____
3. What additional layer is found around the outside of plant cells and bacteria? _____

The **nucleus** in the center of a cell controls many of the functions of the cell. It contains DNA assembled into chromosomes. *Color and label* the plant and animal nucleus yellow. **Cytoplasm** is the jellylike material that fills up the cell and is where all the other organelles are floating. *Color and label* the plant and animal cytoplasm pink.

4. DNA coils tightly during division and assembles into visible C _____.
5. Where is DNA found in a cell? _____
6. What are all the other organelles floating in? _____

The **Golgi apparatus or Golgi body** is a flattened, layered, sac-like organelle that looks like a stack of pancakes. The Golgi body modifies & packages proteins and sugars into membrane-bound transporters for "export" from the cell. *Color and label* the plant and animal Golgi Body red.

7. Why would a cell need to export or get rid of "stuff"?

Chloroplasts are elongated or disc-shaped organelles containing chlorophyll that trap sunlight for energy. Photosynthesis (in which energy from sunlight is converted into chemical energy - food) takes place in the chloroplasts. Only plant cells, not animal cells, can make their own food. *Color and label* the chloroplasts dark green.

12. What process takes place inside chloroplasts? _____
13. Where does the energy come from for this process? _____
14. What pigment traps the energy? _____
15. Chloroplasts are found in what type of cell(s)? _____

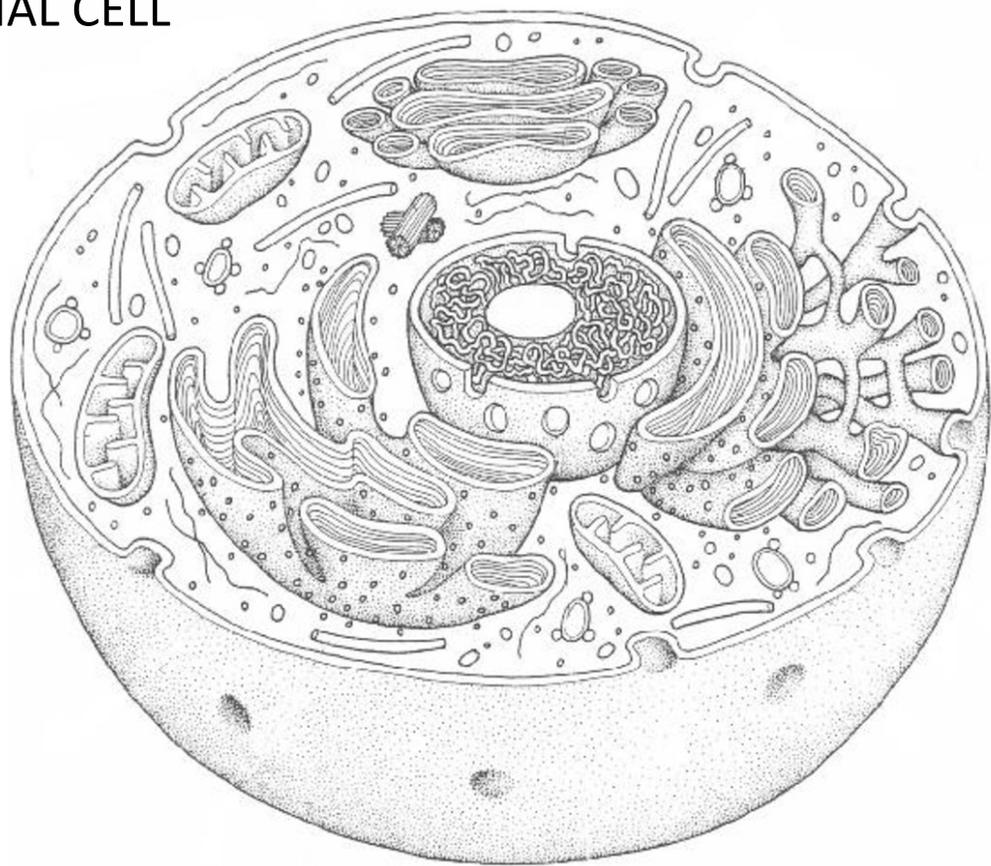
Cells also contain fluid-filled sacs called **vacuoles**. The vacuole fills with food being digested and waste material that is on its way out of the cell. In plant cells, a large **central vacuole** takes up most of the space in the cell. Animals can have many small vacuoles. *Color and label* the plant and animal vacuoles purple.

16. Food, water, and wastes are stored inside _____.
17. The largest organelle in plants is the _____.

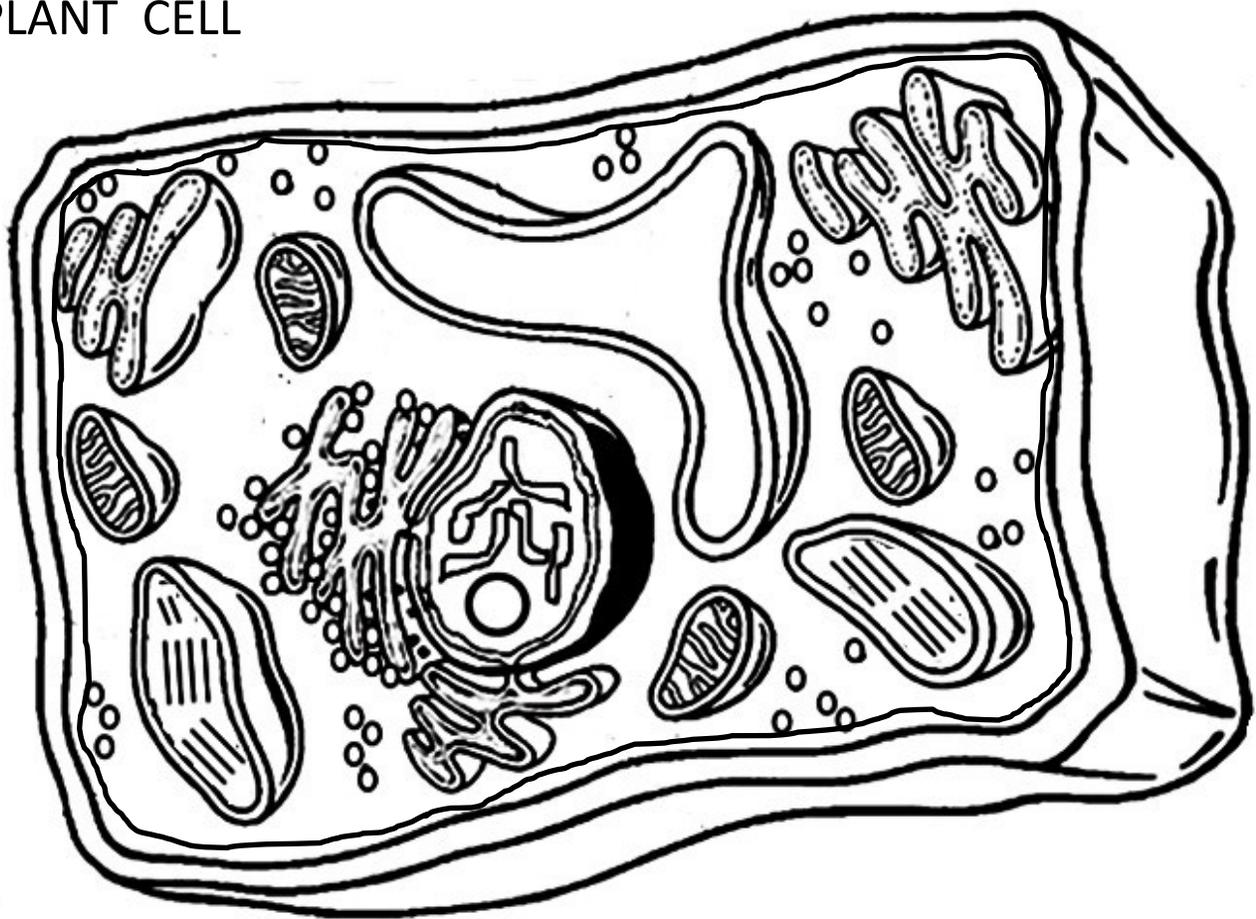
Mitochondria are spherical to rod-shaped organelles that convert food into energy. *Color and label* the plant and animal mitochondria orange.

18. What organelle breaks down food to release energy in the cell? _____
19. What do you think cells need energy for? _____

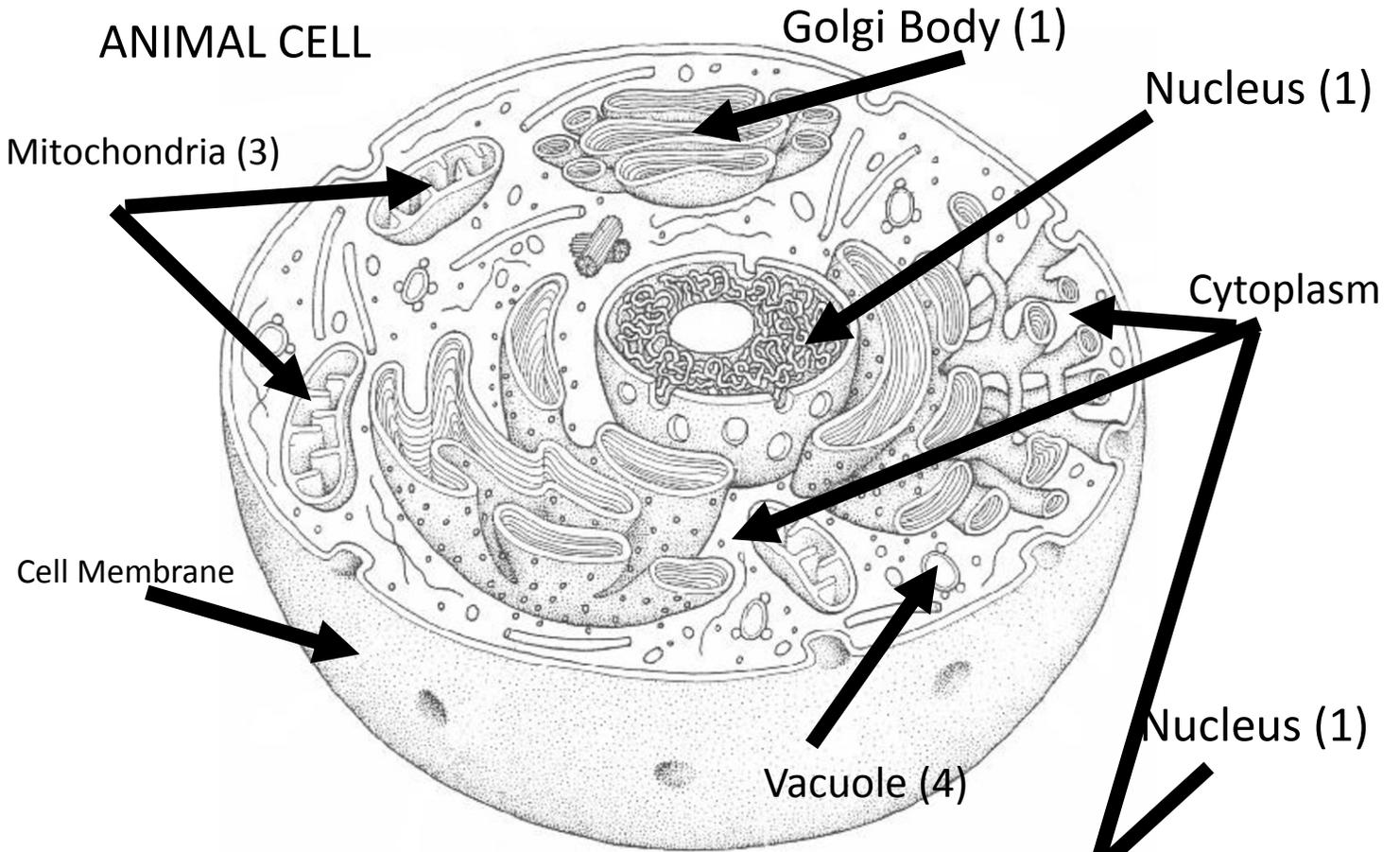
ANIMAL CELL



PLANT CELL



ANIMAL CELL



PLANT CELL

