

# The Cell

- cell means storeroom or small space (prison cell)
- Discovered <sup>by</sup> Robert Hooke (1665)

## Cell Theory

- Scientists: Matthias Schleiden  
Theodor Schwann
- All living things are made up of cells

### Cell Theory:

- The cell is the basic unit of life.
- All organisms are made up of one or more cells.
- All cells come from other living (pre-existing) cells.

# Types of Cells • 2 Types

## Eukaryotic

- cells that have a nucleus with organelles surrounded by membranes

- Animal cells
- Plant cells

## Prokaryotic

- cells that have NO nucleus

- Still have Genetic material (DNA)

- Few Organelles
- Organelles don't

have membranes  
Commonly contain

- DNA
- Ribosomes
- Cytoplasm
- Cell Membrane

eg). Bacteria

---

Viruses - tiny, non-living protein particles that can only reproduce in a host.

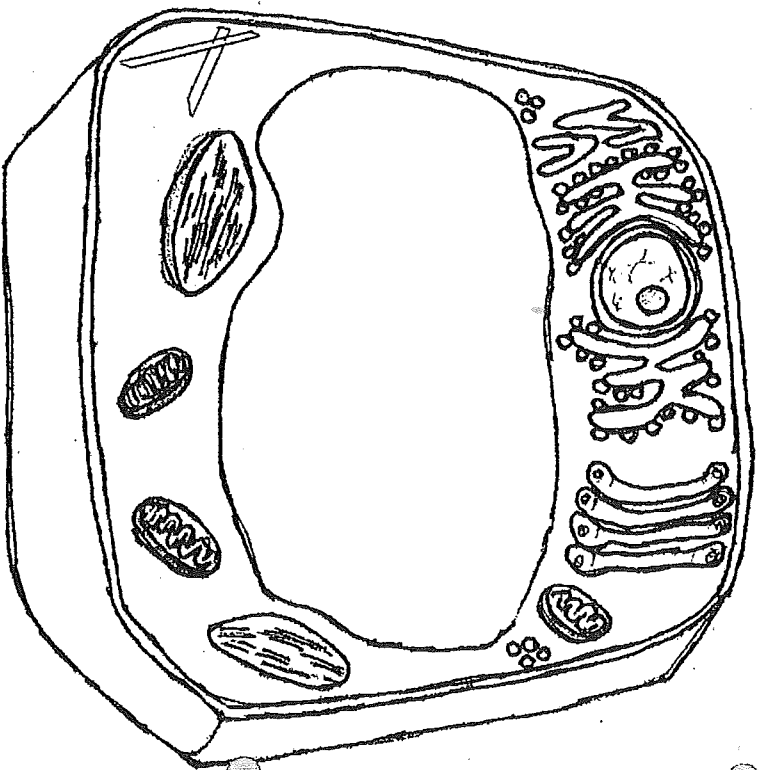
- Protein Capsule  with DNA inside

Name \_\_\_\_\_

### Plant Cell Coloring

Directions: Choose a color for each of the parts below and fill in the square with the color of your choice. Color the cell part to match.

- |                  |                          |                              |                          |
|------------------|--------------------------|------------------------------|--------------------------|
| Cell             | <input type="checkbox"/> | Ribosome                     | <input type="checkbox"/> |
| Membrane         | <input type="checkbox"/> | Smooth Endoplasmic Reticulum | <input type="checkbox"/> |
| Cytoplasm        | <input type="checkbox"/> | Rough Endoplasmic Reticulum  | <input type="checkbox"/> |
| Nucleoplasm      | <input type="checkbox"/> | Mitochondria                 | <input type="checkbox"/> |
| Nuclear Membrane | <input type="checkbox"/> | Chloroplasts                 | <input type="checkbox"/> |
| Nucleolus        | <input type="checkbox"/> | Microtubules                 | <input type="checkbox"/> |
| Golgi Apparatus  | <input type="checkbox"/> | Cell Wall                    | <input type="checkbox"/> |
| Vacuole          | <input type="checkbox"/> |                              |                          |



Compare and Contrast the animal cell to the plant cell - that is, describe how they are alike, and how they are different.

33  
104

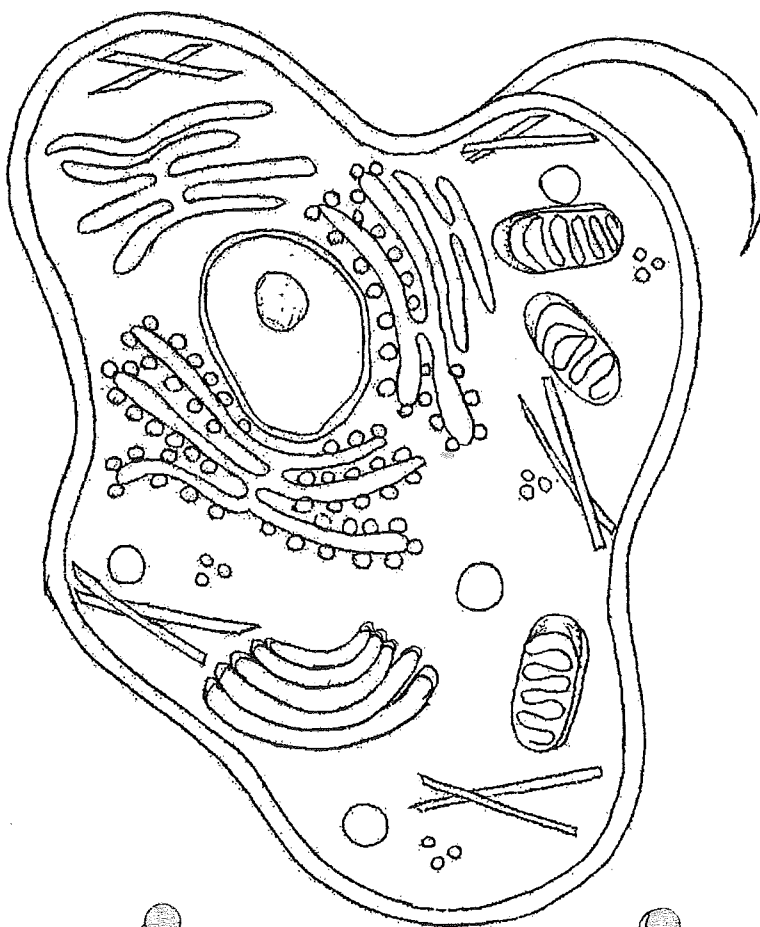
34  
104

Name \_\_\_\_\_

### Animal Cell Coloring

Directions: Choose a color for each of the parts below and fill in the square with the color of your choice. Color the cell part to match.

- |                  |                          |                              |                          |
|------------------|--------------------------|------------------------------|--------------------------|
| Cell             | <input type="checkbox"/> | Ribosome                     | <input type="checkbox"/> |
| Membrane         | <input type="checkbox"/> | Smooth Endoplasmic Reticulum | <input type="checkbox"/> |
| Cytoplasm        | <input type="checkbox"/> | Rough Endoplasmic Reticulum  | <input type="checkbox"/> |
| Nucleoplasm      | <input type="checkbox"/> | Mitochondria                 | <input type="checkbox"/> |
| Nuclear Membrane | <input type="checkbox"/> | Lysosome                     | <input type="checkbox"/> |
| Nucleolus        | <input type="checkbox"/> | Microtubules                 | <input type="checkbox"/> |
| Golgi Apparatus  | <input type="checkbox"/> |                              |                          |
| Flagella         | <input type="checkbox"/> |                              |                          |



Briefly describe the function of the cell parts.

1. Cell membrane
2. Endoplasmic Reticulum
3. Ribosome
4. Golgi Apparatus
5. Lysosome
6. Microtubule
7. Mitochondria
8. Nucleus

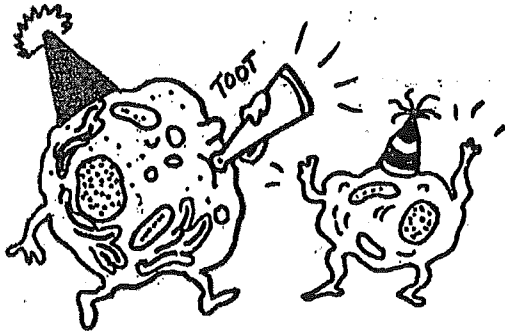
31  
102

32  
102

# A CELL-A-BRATION

If you know all the parts of a cell, you can celebrate along with these partying cells. Show what you know by doing the following:

- I. Label each cell part on the next page (page 13) with its correct name.  
(See names on List 1 below.)
- II. Label each cell correctly as animal cell or plant cell.
- III. Match each cell part (below) with its function on List 2. Write the letter of the cell part in front of the number of the matching descriptive phrase.



## List 1

- A endoplasmic reticulum (ER)
- B nucleus
- C nuclear membrane
- D ribosomes
- E cytoplasm
- F chromosomes
- G cell membrane
- H mitochondria
- I Golgi bodies
- J vacuole
- K chloroplast
- L cell wall

## List 2

- \_\_\_\_\_ 1. controls chlorophyll to help cell trap light to make food
- \_\_\_\_\_ 2. tube network in cytoplasm where cell substances are made
- \_\_\_\_\_ 3. controls movement of materials in and out of the nucleus
- \_\_\_\_\_ 4. controls cell activities
- \_\_\_\_\_ 5. contains cell materials
- \_\_\_\_\_ 6. surrounds plant cell; gives shape and support to the cell
- \_\_\_\_\_ 7. proteins are made in these
- \_\_\_\_\_ 8. rod-shaped bodies that release energy for cell use
- \_\_\_\_\_ 9. bodies that store and release chemicals for cell use
- \_\_\_\_\_ 10. controls movement of materials in and out of the cell
- \_\_\_\_\_ 11. holds the code that controls cell
- \_\_\_\_\_ 12. stores water and dissolved materials in plant cells

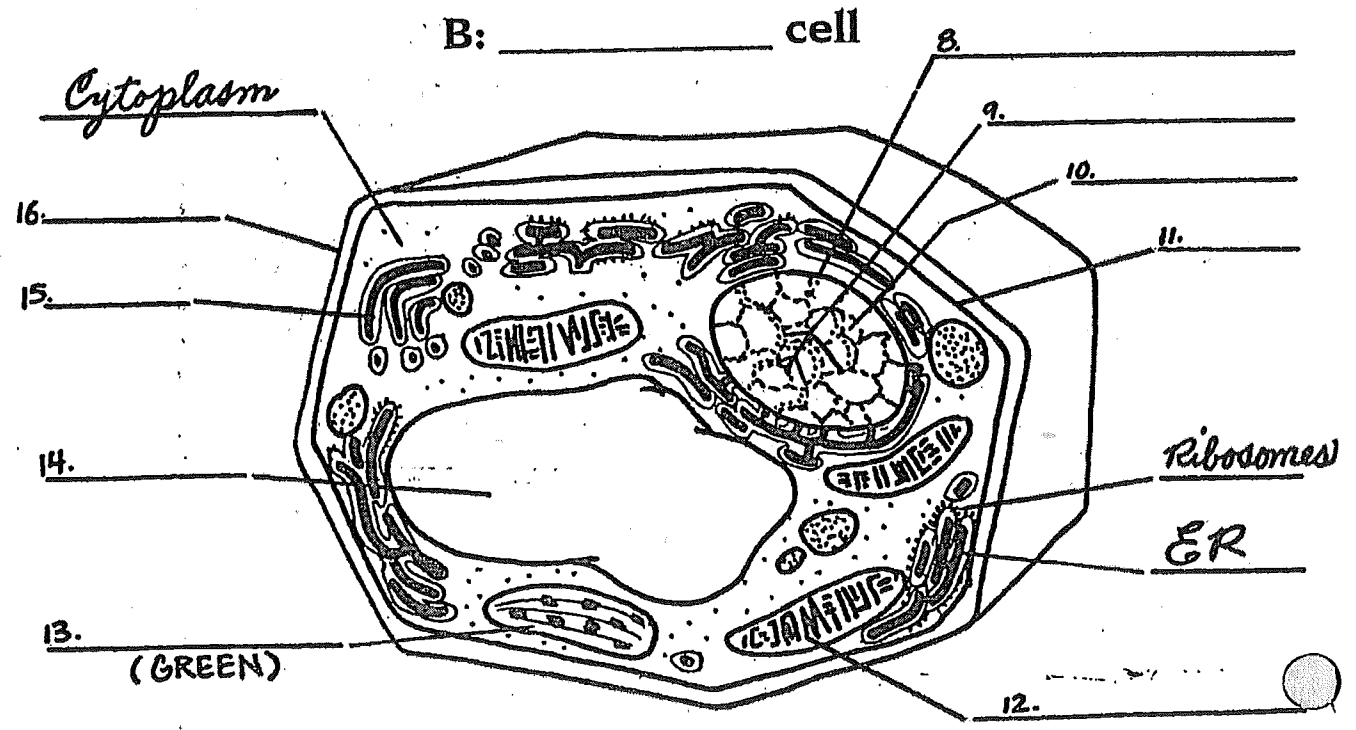
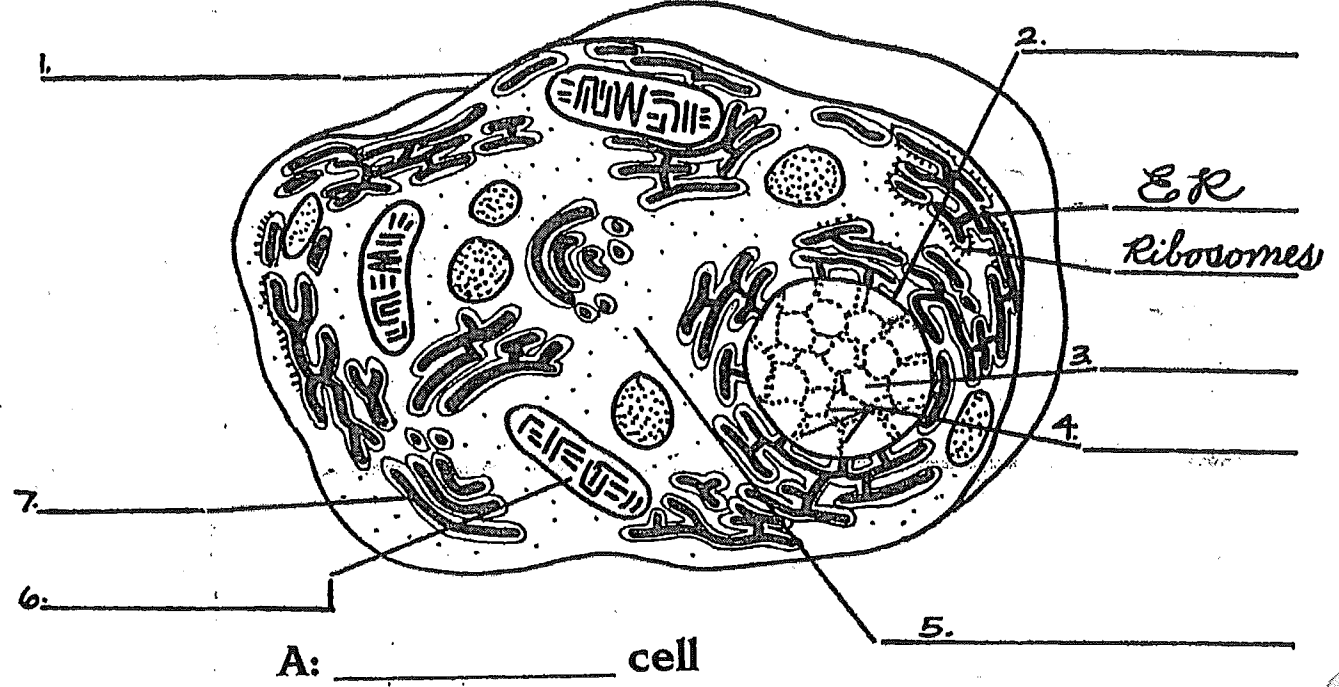
Use with page 13.

Name \_\_\_\_\_

37  
108

# CELL DIAGRAMS

Use with page 12.



30  
10

Name \_\_\_\_\_

1

Section-Seat

# Can You Identify These Cell Structures?

Read each description and then identify the cell structure. Write your answer on the line provided.

1. I'm a real "powerhouse."  
That's plain to see.  
I break down food  
To release energy.

What am I? \_\_\_\_\_

6. I'm a series of tubes  
Found throughout the cell.  
I transport proteins  
And other things as well.

What am I? \_\_\_\_\_

2. I'm strong and stiff  
Getting through me is tough.  
I'm found only in plants.  
But I guess that's enough.

What am I? \_\_\_\_\_

7. I'm full of holes,  
Flexible, and thin.  
I control what gets out  
As well as what comes in.

What am I? \_\_\_\_\_

3. My name means "colored bodies,"  
And I contain DNA.  
I pass on traits to new cells  
In a systematic way.

What am I? \_\_\_\_\_

8. Proteins are made here  
Even though I'm quite small.  
You can find me in the cytoplasm  
Or attached to E.R.'s wall.

What am I? \_\_\_\_\_

4. I'm the "brain" of the cell  
Or so they say.  
I regulate activities  
From day to day.

What am I? \_\_\_\_\_

9. I've been called a "storage tank"  
By those with little taste.  
I'm a sac filled with water,  
Food, enzymes, or waste.

What am I? \_\_\_\_\_

5. Found only in plant cells,  
I'm green as can be.  
I make food for the plant  
Using the sun's energy.

What am I? \_\_\_\_\_

10. Since I contain many enzymes,  
I can digest an injured cell;  
And can break down a large molecule  
Into a smaller one as well.

What am I? \_\_\_\_\_

36  
1076

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Period: \_\_\_\_\_

## Cell Organelles Worksheet

Complete the following table by writing the name of the cell part or organelle in the right hand column that matches the structure/function in the left hand column. A cell part may be used more than once.

Structure/Function	Cell Part
1. Stores material within the cell	
2. Closely stacked, flattened sacs (plants only)	
3. The sites of protein synthesis	
4. Transports materials within the cell	
5. The region inside the cell except for the nucleus	
6. Organelle that manages or controls all the cell functions in a eukaryotic cell	
7. Contains chlorophyll, a green pigment that traps energy from sunlight and gives plants their green color	
8. Digests excess or worn-out cell parts, food particles and invading viruses or bacteria	
9. Small bumps located on portions of the endoplasmic reticulum	
10. Provides temporary storage of food, enzymes and waste products	
11. Firm, protective structure that gives the cell its shape in plants, fungi, most bacteria and some protists	
12. Produces a usable form of energy for the cell	
13. Packages proteins for transport out of the cell	
14. Everything inside the cell including the nucleus	
15. Site where ribosomes are made	