

**Lesson Topic:** Parts of a Cell

**Objective:**

Students will be able to:

1. Identify cell organelles
2. Describe the particular functions of the organelles

**Time Required:** 95 minutes

**Materials Needed:**

- Teacher computer with internet access
- Projector/Smartboard
- 1 computer/laptop/iPad per student with internet access
- Parts of a Cell handout (attached)
- City Planning Guide handout (attached)

**Teacher Preparation:**

- Assign a Legends of Learning Instructional [Quick Play](#) playlist for the day(s) you will be teaching the lesson.
  - Instructional - Middle School - Parts of a Cell
- Assign a Legends of Learning Content Review [Quick Play](#) playlist for the day(s) you will be teaching the lesson.
  - Content Review - Middle School - Parts of a Cell
- Make double-sided copies of the Parts of a Cell/ City Planning Guide handout (1 per student)

**Engage (5 minutes):**

1. Show this video on Youtube that overviews cell parts and functions
  - a. Before the video, set a purpose for watching. Students can take notes on the various organelles and their functions.
  - b. [THE PARTS OF A CELL SONG | Science Music Video](#)
2. After the video, lead a discussion on the various parts of the cell and explain how students will delve deeper into the parts and functions during the lesson.

**Explore (20 minutes):**

1. Have your students [sign in to Legends of Learning](#). Instruct students to complete the Instructional playlist.
2. As students complete the assigned game, students should fill out the functions of each organelle on Parts of a Cell Handout (bottom section).
3. Assist students as needed during game play, pause playlist if you need to address content or questions to the entire class.

**Explain (15 minutes):**

1. Review Parts of a Cell Handout stimulating group discussion on the functions of each organelle. As a group, draw a basic diagram on the board and have students volunteer to draw and label the various parts. Students will draw the diagram on the top half of

the Parts of a Cell handout.

**Elaborate (45 minutes):**

1. Explain to students that living cells are highly organized and each part of the cell plays a part to carry out the life processes for plants and animals. These cells are similar to a “city” and the organelles are similar to the “functions/ jobs” with in a city.
2. Break students into groups and task groups with the job of deciding what each organelle would be in a city and why. Students can record responses on City Planning Guide handout (back of Parts of a Cell handout).
  - a. Example: Nucleus is like the government because it directs the cell’s activities. A government also decides the functions for the city.
  - b. *Extension: If a group finishes early, or if time allows, groups can create a Zoning Map of their city that highlights the parts of their city and the functions of each part. Both cell organelles and city parts should be included*
3. After students have finished, let each group present the parts of their city and why they chose the jobs/ functions they did.

**Evaluate (10 minutes):**

1. Collect students handouts to evaluate
2. Have your students [sign in to Legends of Learning](#). Instruct students to complete the Content Review playlist.
3. [Analyze student results](#) to determine what concepts need to be a focus for reteaching.

**Additional Lesson Strategies:**

- To use Legends for additional instruction, create a [custom playlist](#) with an [instructional game](#) and pre and post [assessment](#).
- To use Legends for a quick formative assessment, create a 5-question [assessment](#) in a [playlist](#).
- To use Legends for a student-directed experience, create a [targeted freeplay](#) playlist.
- Encourage students to play on their own at home in [Legends of Learning: Awakening](#) for a student-driven experience including avatars, battling, and quests all centered around topics they are covering in class.



## Parts of a Cell

Directions: Use the space provided below to draw a cell and label all parts listed below.  
Briefly describe the function of each part of the cell in the space provided.

A large, empty rectangular box with a black border, intended for drawing a cell and labeling its parts.

Cell Membrane: \_\_\_\_\_

Cell Wall : \_\_\_\_\_

Nucleus: \_\_\_\_\_

Cytoplasm: \_\_\_\_\_

Vacuole: \_\_\_\_\_

Mitochondrion: \_\_\_\_\_

Endoplasmic Reticulum: \_\_\_\_\_

Chloroplast: \_\_\_\_\_

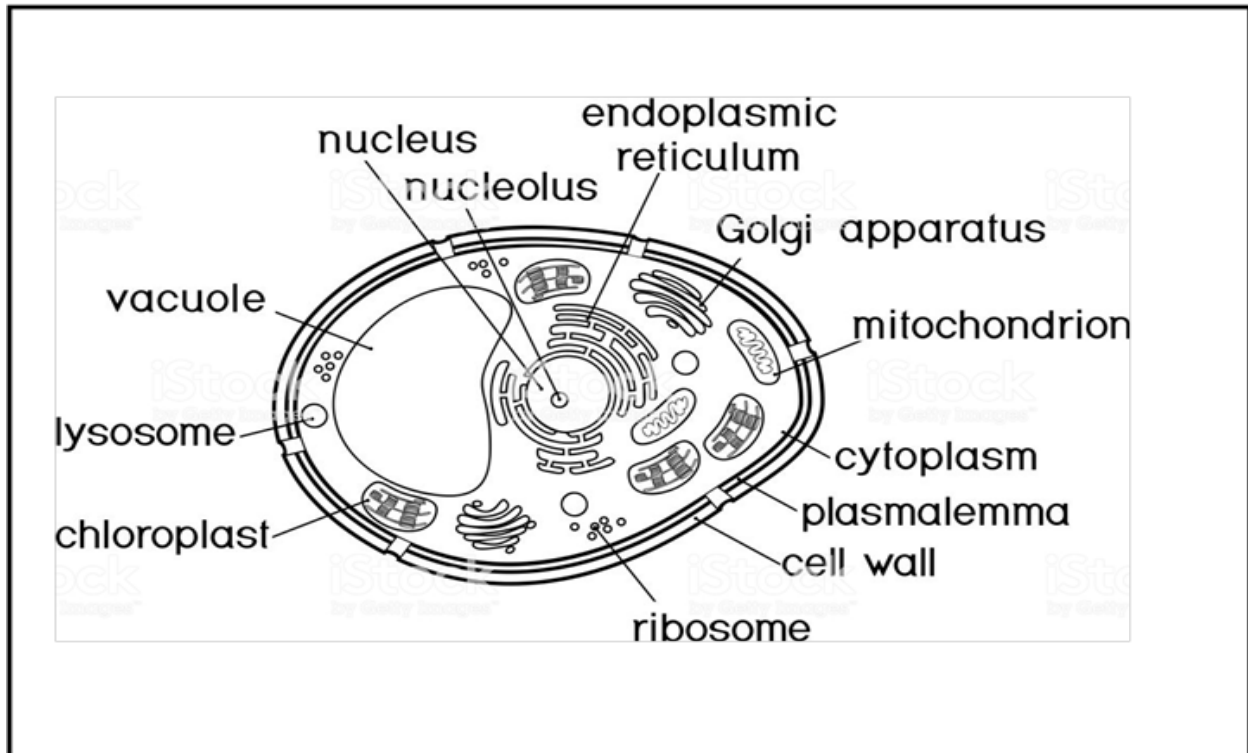
Ribosome: \_\_\_\_\_

Golgi Body: \_\_\_\_\_

# Answer Key

## Parts of a Cell

Directions: Use the space provided below to draw a cell and label all parts listed below. Briefly describe the function of each part of the cell in the space



**Cell Membrane: controls what enters and what leaves the cell**

**Cell Wall : protects and supports the cell**

**Nucleus: command center, directs the cell's activities**

**Cytoplasm: fluid that fills out the cell**

**Vacuole: storage area for the cell**

**Mitochondrion: powerhouse of the cell, produces energy**

**Endoplasmic Reticulum: transports materials in the cell**

**Chloroplast: converts energy to the fuel for the cell**

**Ribosome: builds proteins for cell function**

**Golgi Body: receives packages and distributes materials**



# City Planning Guide

Cell Membrane: \_\_\_\_\_  
\_\_\_\_\_

Cell Wall: \_\_\_\_\_  
\_\_\_\_\_

Nucleus: \_\_\_\_\_  
\_\_\_\_\_

Cytoplasm: \_\_\_\_\_  
\_\_\_\_\_

Vacuole: \_\_\_\_\_  
\_\_\_\_\_

Mitochondrion: \_\_\_\_\_  
\_\_\_\_\_

Endoplasmic Reticulum: \_\_\_\_\_  
\_\_\_\_\_

Chloroplast: \_\_\_\_\_  
\_\_\_\_\_

Ribosome: \_\_\_\_\_  
\_\_\_\_\_

Golgi Body: \_\_\_\_\_  
\_\_\_\_\_



# City Planning Guide Key

(accept reasonable answers)

**Cell Membrane:** Highway into the city, other entry points such as train stations, airports, etc. because it controls what enters/ leaves the city

**Cell Wall:** Wall around the city, city limits because it protects the city

**Nucleus:** Government because it directs the city's activities

**Cytoplasm:** Houses, buildings, parks, stores that fill out the city

**Vacuole:** Warehouses because they store material for a city

**Mitochondria:** Power plant because it produces energy for the city.

**Endoplasmic Reticulum:** Public transportation, roads because they transport people and materials around the city

**Chloroplast:** Solar panels because it takes the sun's energy and converts it to useable energy for the city

**Ribosome:** Factory because it builds products for the city

**Golgi Body:** Post office because it receives and distributes packages for the city