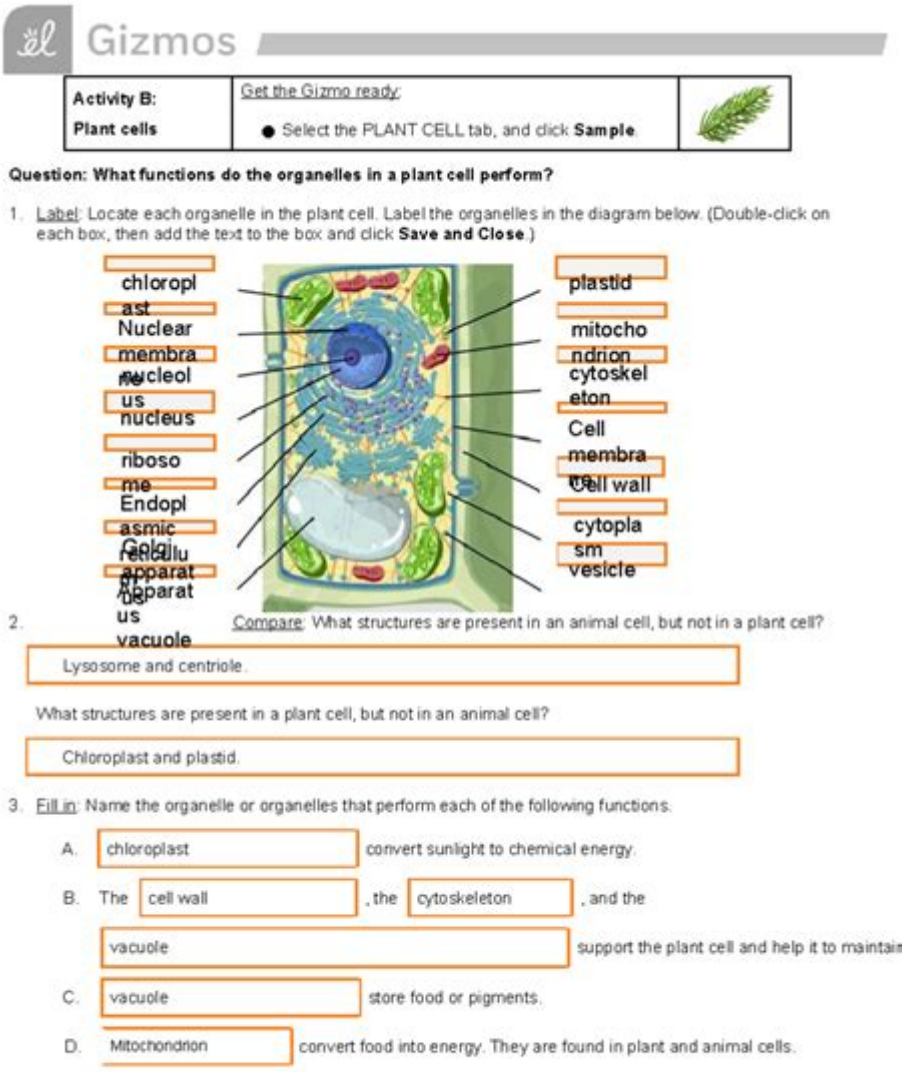
Gizmo Student Exploration Cell Structure Answer Key



Gizmos

Activity B: Plant cells	Get the Gizmo ready: ● Select the PLANT CELL tab, and click **Sample**.	

Question: What functions do the organelles in a plant cell perform?

1. Label: Locate each organelle in the plant cell. Label the organelles in the diagram below. (Double-click on each box, then add the text to the box and click **Save and Close**.)

chloroplast, Nuclear membrane, nucleolus, nucleus, ribosome, Endoplasmic reticulum, Golgi apparatus, vacuole, plastid, mitochondrion, cytoskeleton, Cell membrane, Cell wall, cytoplasm, vesicle

2. Compare: What structures are present in an animal cell, but not in a plant cell?

Lysosome and centriole.

What structures are present in a plant cell, but not in an animal cell?

Chloroplast and plastid.

3. Fill in: Name the organelle or organelles that perform each of the following functions.

A. chloroplast convert sunlight to chemical energy.

B. The cell wall, the cytoskeleton, and the vacuole support the plant cell and help it to maintain

C. vacuole store food or pigments.

D. Mitochondrion convert food into energy. They are found in plant and animal cells.

Gizmo student exploration cell structure answer key is an essential resource for students and educators alike, especially when delving into the complexities of cellular biology. Understanding cell structure is foundational to the study of life sciences, and Gizmo's interactive simulations provide a unique opportunity for students to engage with and visualize cellular components. This article will explore the significance of the Gizmo student exploration activities, the major components of cell structure, and provide insights into how to effectively use the answer key for enhanced learning.

Understanding the Gizmo Resource

Gizmo is an online platform developed by ExploreLearning that offers a variety of interactive simulations in science and mathematics. The cell structure Gizmo allows students to explore the anatomy of both plant and animal cells. This hands-on approach not only helps students understand theoretical concepts but also encourages them to engage in scientific inquiry.

Key Features of the Gizmo Cell Structure Simulation

1. Interactive Learning: Students can manipulate various cell components and visualize their functions in real-time.
2. Visual Representation: The Gizmo provides detailed visuals of cell structures, making it easier to grasp complex ideas.
3. Assessment Tools: Built-in quizzes and assessments help gauge student understanding before and after exploration.
4. Adaptability: The simulations can be tailored to fit different educational levels, catering to both middle and high school students.

The Importance of Cell Structure in Biology

Cell structure is fundamental to biology for several reasons:

- Basic Unit of Life: Cells are the smallest units of life, and understanding their structure helps in comprehending how living organisms function.
- Diversity of Life: Different organisms have varied cell types (prokaryotic vs. eukaryotic), each with distinct structures and functions.
- Disease Understanding: Knowledge of cell components is crucial in understanding diseases at a cellular level, leading to advancements in medical science.

Major Components of Cell Structure

Cells consist of various components, each serving specific roles. Here are the key structures found in both plant and animal cells:

- **Nucleus**: The control center of the cell that houses genetic material (DNA).
- **Cell Membrane**: A semi-permeable barrier that regulates what enters and exits the cell.

- **Cytoplasm**: The jelly-like substance where cell components are suspended and chemical reactions occur.
- **Mitochondria**: The powerhouse of the cell, generating energy through cellular respiration.
- **Ribosomes**: The sites of protein synthesis, either floating freely in the cytoplasm or attached to the endoplasmic reticulum.
- **Endoplasmic Reticulum (ER)**: A network of membranes involved in protein and lipid synthesis. It comes in two forms: rough (with ribosomes) and smooth (without ribosomes).
- **Golgi Apparatus**: The packaging and distribution center of the cell, modifying, sorting, and packaging proteins and lipids.
- **Chloroplasts**