

## Cell Theory Worksheet

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### Part 1: Building a Foundation

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**Which scientist is credited with first using the term "cell" after observing cork under a microscope?**

*Hint: Think about the early pioneers of microscopy.*

- Anton van Leeuwenhoek
- Matthias Schleiden
- Robert Hooke
- Theodor Schwann

**Which of the following are key tenets of the cell theory? (Select all that apply)**

*Hint: Consider the fundamental principles of cell biology.*

- All living organisms are composed of one or more cells.
- Cells can spontaneously generate from non-living material.
- The cell is the basic unit of life.
- All cells arise from pre-existing cells.

**Explain why the cell is considered the basic unit of life.**

*Hint: Think about the functions that cells perform.*

**List two types of cells and provide one characteristic of each.**

*Hint: Consider both plant and animal cells.*

1. Type of cell 1 and characteristic

2. Type of cell 2 and characteristic

## Part 2: Comprehension and Application

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**Which statement best describes the contribution of Theodor Schwann to cell theory?**

*Hint: Think about the role of Schwann in the development of cell theory.*

- He discovered the nucleus in plant cells.
- He stated that all animals are composed of cells.
- He observed bacteria using a microscope.
- He concluded that cells arise from pre-existing cells.

**Which of the following structures are found in both prokaryotic and eukaryotic cells? (Select all that apply)**

*Hint: Consider the basic components of cells.*

- Nucleus
- Cell membrane
- Ribosomes
- mitochondria

**How would you apply the principles of cell theory to explain the growth of a multicellular organism?**

*Hint: Think about how cells divide and differentiate.*

**If a new organism is discovered and it is found to have cells with a nucleus, which type of cell does it most likely have?**

*Hint: Consider the characteristics of cell types.*

- Prokaryotic
- Eukaryotic
- Bacterial
- Viral

### Part 3: Analysis, Evaluation, and Creation

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**Which of the following best explains why viruses are not considered living organisms under cell theory?**

*Hint: Think about the characteristics that define life.*

- They can replicate only inside host cells.
- They have a simple structure.
- They do not have a cell membrane.
- They are smaller than bacteria.

**Analyze the following statements and select those that correctly describe differences between prokaryotic and eukaryotic cells. (Select all that apply)**

*Hint: Consider the structural differences between these cell types.*

- Prokaryotic cells have a nucleus, while eukaryotic cells do not.
- Eukaryotic cells have membrane-bound organelles, while prokaryotic cells do not.
- Prokaryotic cells are generally smaller than eukaryotic cells.
- Eukaryotic cells can form multicellular organisms, while prokaryotic cells cannot.

**Evaluate the impact of the development of the microscope on our understanding of cell theory.**

*Hint: Think about how microscopy has changed biology.*

**Propose a research study that could further explore an aspect of cell theory. Include your hypothesis and the methods you would use.**

*Hint: Consider what aspect of cell theory interests you most.*