

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

## Invisible Engines: Small Cells and the Big Business of Life Quiz for 4th Grade

Students analyze cellular functions by comparing biological organelles to the specialized roles found within a busy construction site and a high-tech factory.

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**1. Imagine a cell is like a busy construction site. Which organelle acts like the 'Boss' or 'Project Manager' by holding the blueprints (DNA) and giving instructions?**

- A. The Mitochondria
- B. The Nucleus
- C. The Cell Wall
- D. The Cytoplasm

**2. The cell membrane acts like a security guard, deciding which materials are allowed to enter or leave the cell.**

- A. True
- B. False

**3. A plant cell needs a rigid \_\_\_\_\_ to keep its shape and stand up tall, while an animal cell does not have this structure.**

- A. Solar panel
- B. Cell Membrane
- C. Cell Wall
- D. Nucleus

**4. If a cell's mitochondria suddenly stopped working, what would most likely happen to the cell?**

- A. It would lose its shape and collapse.
- B. It would run out of energy and stop functioning.
- C. It would turn into a plant cell.
- D. The nucleus would take over energy production.

**5. Chloroplasts are specialized organelles that help plants capture \_\_\_\_\_ to make their own food through photosynthesis.**

- A. Rainwater
- B. Soil minerals
- C. Sunlight
- D. Oxygen

**6. Vacuoles in plant cells are usually much smaller than the vacuoles found in animal cells.**

- A. True
- B. False

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**7. Which organelle functions most like a 'trash truck' or 'recycling center' by breaking down waste and old cell parts?**

- A. Ribosome
- B. Golgi Apparatus
- C. Lysosome
- D. Endoplasmic Reticulum

**8. The \_\_\_\_\_ is a jelly-like substance that fills the cell and keeps all the other organelles floating in their proper places.**

- A. Cytoplasm
- B. Water
- C. Blood
- D. Chlorophyll

**9. A scientist is looking at a cell under a microscope and sees a square shape and green spots. What kind of cell is she most likely looking at?**

- A. A human skin cell
- B. A bird wing cell
- C. A leaf cell
- D. A bacterial cell

**10. Every living thing, from a tiny blade of grass to a giant blue whale, is made of at least one cell.**

- A. True
- B. False