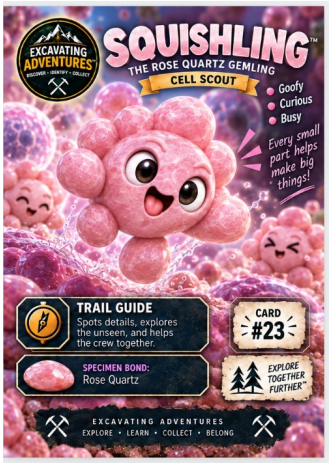
Cell Parts & Their Jobs

Nucleus Tower with Squishling



Learning target

Connect a few cell parts to simple functions.

Before you begin

Use the reference page and discussion prompts on their own, or open the optional browser adventure. No earlier lesson or physical kit is required.

For online play: use an internet-connected current browser with local storage enabled. Read the three-part Gemling briefing, answer the quick check, and apply the evidence at three checkpoints. Retry feedback supports review; results are not a secure test or gradebook.

Use for teacher-led review, science centers or partner practice. Independent readers may need support with the vocabulary below. The design target is grades 3-5; choose support based on the learner.

Vocabulary and concepts to discuss

Membrane; cytoplasm; nucleus in plant and animal cells; coordinated functions

Open Nucleus Tower - direct lesson link

Scan the QR code or use the clickable link. This guide is usable offline; the adventure runs on an external educational website.

Cell Parts & Their Jobs - key ideas

1. The first clues

A cell membrane forms a boundary and helps regulate movement of materials. Cytoplasm is the internal material where many cell activities occur.

2. How the clues connect

Plant and animal cells usually contain a nucleus holding genetic information that helps direct activities. Not all living cells have a nucleus; bacteria do not.

3. Our evidence record

Our simplified plant-cell diagram marks membrane, cytoplasm and nucleus. Use it for these cells without treating it as a diagram of every kind of cell.

Keep the science accurate

Limit the nucleus model to plant/animal cells; not all living cells have a nucleus.

Apply the evidence

Use a specific observation from this lesson to explain one choice. Point to a clue, then connect that clue to a scientific idea.

Curriculum reference: https://www.nextgenscience.org/dci-arrangement/ms-ls1-molecules-organisms-structures-and-processes

Talk through the evidence

1. Which part forms the cell boundary?

Expected answer: Membrane

Reasoning: A cell membrane forms a boundary and helps regulate movement of materials. Cytoplasm is the internal material where many cell activities occur.

2. Which part holds genetic information in this model?

Expected answer: Nucleus

Reasoning: Plant and animal cells usually contain a nucleus holding genetic information that helps direct activities. Not all living cells have a nucleus; bacteria do not.

3. Do all living cells have nuclei?

Expected answer: No

Reasoning: Plant and animal cells usually contain a nucleus holding genetic information that helps direct activities. Not all living cells have a nucleus; bacteria do not.

4. What does cytoplasm refer to here?

Expected answer: Internal material where many activities occur

Reasoning: A cell membrane forms a boundary and helps regulate movement of materials. Cytoplasm is the internal material where many cell activities occur.

Guide the discussion

Ask learners to name the evidence that supports their answer. If an answer differs, revisit the matching key idea on page 2 and invite a revised explanation.

Online rewards: this lesson grants one fixed digital Expedition Discovery. Five saved digital Gemling friends become available only after all six distinct subject lessons are complete, in any order. Digital rewards do not establish physical ownership.