

Example of Unwrapping Standards for Cell Unit

Standard or standards to address:

Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells (MS-LS1-1).

Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function (MS-LS1-2).

Context and Conditions

(Explain what text, problem type, or situation students will encounter.)

Students have learned to use a microscope and the steps of the scientific method. In this unit, they will use both of those skills. They use models to explain phenomena but never develop their own model.

| Learning Target | | DOK | Assessment |
|---|--|-----|---|
| Students Need to Know Concepts or Information | • The definition of a cell | 1 | Have students define important vocabulary. |
| | • What makes something living | 1 | Have students list the factors that make something living. |
| | • Unicellular organisms versus multicellular organisms | 2 | Have students explain the difference between unicellular and multicellular organisms. |
| | • Cell organelles | 1 | |
| | • Definition and description of osmosis and diffusion | 2 | Have students explain the difference between osmosis and diffusion. |
| | • Plant cells versus animal cells | 2 | Provide slides of plant and animal cells, and have students identify them. |
| Big idea: All living things are made up of cells. More complex animals and plants have many different kinds of cells. Cells have parts called organelles that carry out a variety of functions. | | | |

REPRODUCIBLE

| | | | |
|---|---|--|--|
| Students Will Do or Demonstrate | <ul style="list-style-type: none"> • Distinguish between living and nonliving things. • Develop and use a model to describe the function of a cell as a whole. • Develop and use a model to describe how parts of a cell contribute to the function. • Explain how osmosis and diffusion affect cell transport. | <p style="text-align: center;">2</p> <p style="text-align: center;">2</p> <p style="text-align: center;">3</p> <p style="text-align: center;">3</p> | <p>Provide a table with evidence, and have students determine if the item is living or nonliving.</p> <p>Have students draw a model to explain cell transport with osmosis and diffusion.</p> |
| Students Will Use Academic Language and Vocabulary | <p>Cell, nucleus, chloroplasts, mitochondria, cell wall, cell membrane</p> | | |

Source for Standards: NGSS Lead States. (2013). Next Generation Science Standards: For states, by states. Washington, DC: National Academies Press.