1 Cells and Body Systems

Objectives

You will be able to

- Provide evidence that living things are made of many different types of cells.
- Analyze data gathered from an investigation.
- Discuss and share observations.
- Draw and label pictures of cells.

How do body systems interact with each other to communicate and collaborate?

Evaluation and Feedback

To evaluate your work, you will

- Use the "Constructing Explanations and Designing Solutions" row , the "Carrying Out Investigations" row and the "Analyzing and Interpreting Data" row of the Science and Engineering Practices Rubric.
- Use other criteria determined by your teacher.

Task 1: The Different Types of Cells in Your Body

As a group:

- Watch a slide presentation and make a claim about what living things are made of.
- Collect evidence from close-up photos of animals, plants, bacteria, and non-living material.
- Give a scientific reason for why your evidence supports or refutes your claim.
- Make a claim about whether living organisms are made of one type of cell.
- Move through stations to identify different types of cells and their functions.
- Give a scientific reason why your evidence supports or refutes your claim.

Vocabulary

- bone
- cell
- muscle
- nerve
- organism
- red blood cell
- skin
- small intestine
- tissue

Connect to the Culminating Project

Plan and organize your Activity Brochure in your Individual Project Organizer:

- Choose three cell types.
- Construct a diagram of those cell parts in the correct places of the body for your activity.
- Describe each cell and the function of each cell.

The Different Types of Cells in Your Body

Part I • What Are All Living Things Made Of?

1. During the slide presentation, complete the following data table.

<table>
<tr><td>Claim</td><td colspan="4">Answer the question “What are all living things made of?” using the sentence format in the slide.</td></tr>
<tr><td rowspan="2">Evidence</td><td colspan="4">Draw or explain your evidence.</td></tr>
<tr><td>Animal</td><td>Plant</td><td>Bacteria</td><td>Non-living</td></tr>
<tr><td>Reasoning</td><td colspan="4">Give a scientific reason why your evidence supports or refutes your claim.</td></tr>
</table>

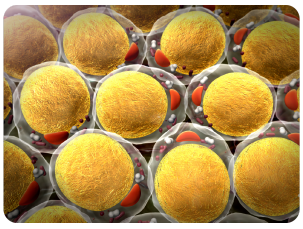
2. Share with the class your claim, evidence, and reasoning statements.

Part II • Cell Type and Tissue Type Resource Cards

1. Make a claim answering the research question.

Research question: Are living organisms made of one type of cell? Why or why not?	
Claim	Answer the research question found above.

Fat Cells

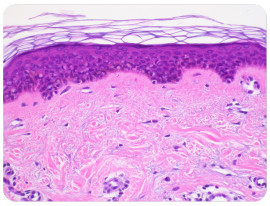
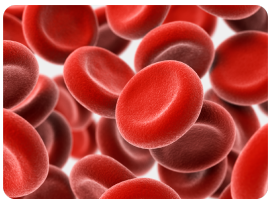
Cell Station	Observations *Describe these cells.*	Function *What do these cells do?*	Grocery Store Analogy *If these cells were part of a grocery store, what part of the grocery store might they represent? Why?*
 Many Fat Cells or Fat Tissue			

2. Rotate through the six cell function stations. Fill in the Cell Function Data Table that follows.

The Different Types of Cells in Your Body

LAB STATIONS 1 AND 2

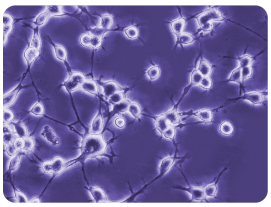
Cell Function Data Table

Cell Station	Observations *Describe these cells.*	Function *What do these cells do?*	Grocery Store Analogy *If these cells were part of a grocery store, what part of the grocery store might they represent? Why?*
 Many Skin Cells or Skin Tissue			
 Many Blood Cells or Blood Tissue			

The Different Types of Cells in Your Body

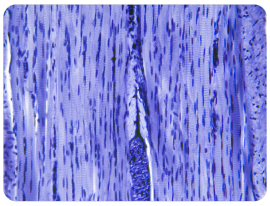
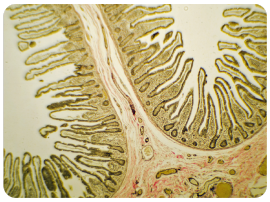
LAB STATIONS 3 AND 4

Cell Function Data Table

Cell Station	Observations *Describe these cells.*	Function *What do these cells do?*	Grocery Store Analogy *If these cells were part of a grocery store, what part of the grocery store might they represent? Why?*
 Many Bone Cells or Bone Tissue			
 Many Nerve Cells or Nerve Tissue			

The Different Types of Cells in Your Body

LAB STATIONS 5 AND 6 — Cell Function Data Table

Cell Station	Observations *Describe these cells.*	Function *What do these cells do?*	Grocery Store Analogy *If these cells were part of a grocery store, what part of the grocery store might they represent? Why?*
 Many Muscle Cells or Muscle Tissue			
This is a challenge station  Many Small Intestine Cells or Small Intestine Tissue			

3. Complete the table below to help you answer the research question.

Revisit Claim	Are living organisms made of one type of cell? Why or why not?
Evidence (Gather data from the six resource cards.)	Provide two pieces of evidence from your Cell Function Data Table that support or refute your claim.
Reasoning	Give a scientific reason why your evidence supports or refutes your claim.

4. Share your claim, evidence, and reasoning. Explain how you think cells and tissues are related, giving one example from the Cell Function Data Table.

Part III • Connect to the Culminating Project and Assessment

Complete the Individual Project Organizer for this task.