

INVESTIGATIONS IN SCIENCE 7

Science Anchors

Science anchors are ongoing engaging tasks that students can work on independently. They are curriculum based, clearly defined and differentiated for students. Students can work on science anchors as they complete work at varying rates, when the teacher is working with a small groups of students, at the beginning or end of a class period, or when they are waiting for teacher assistance. Sample science anchor tasks include: reading and responding to text, journaling, learning or interest centers, listening or viewing centers, independent research or projects and hands-on minds-on science kit tasks. Provide a variety of anchor tasks at your anchor station to address the diverse learning styles, interests and readiness levels of your students.

Purpose

Students that have a strong understanding of the structure of a cell complete Tour de City or a similar task to learn new about new organelles. Students that are still learning about cell structure complete the Tour de School task to deepen their understanding of the organelles introduced in class.

Tour de School	Tour de City
<p>You are about to take a tour, either real or imagined, around your school. You will pass through parts of the school that are familiar, yet you must think of them in new ways. You are going to develop analogies, or comparisons, to the parts of your school and the organelles of a cell. For instance, think of something that you are familiar with, like a refrigerator. Your refrigerator has many parts, some that you see and some that you can not. Now, think of a cell. You have seen some organelles, and some have remained unseen. You also know that certain organelles have certain functions. The mitochondria are the powerhouse of the cell. Your refrigerator has a powerhouse as well. It is the motor that helps to keep your food cold.</p> <p>Now you will go out into the school to try to compare school parts to organelles of a cell.</p>	<p>You are about to take a tour, either real or imagined, around your city (mall or another example). You will pass through parts of the city that are familiar, yet you must think of them in new ways. You are going to develop analogies, or comparisons, to the parts of your city and the organelles of a cell. For instance, think of something that you are familiar with in a city, like city hall. City hall is where city policies and regulations are passed. It is like the control center for the city. Now, think of a cell. You have seen some organelles, and some remain unseen. You also know that organelles have certain functions. The nucleus is the control center of the cell. City hall is the control center for your city.</p> <p>Now you will go out into your city to try to compare city parts to the organelles of a cell.</p>

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Structure of a Cell

Overview

This task is to be used by students in science as they are learning about organelles.

Goals

Students should be able to distinguish between
plant and animal cells.

Students should understand
the function of various organelles.

Students should be able to
develop analogies to demonstrate their understanding of the interactions of
organelles within a cell.

Required Resources

- One Tour de School or Tour de City resource page per student
- Poster paper
- Colored pencils or markers
- A variety of resources on cells including science textbook

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Tour de School

Instructions: You are about to take a tour, either real or imagined, around your school. You will pass through parts of the school that are familiar, yet you must think of them in new ways. You are going to develop analogies, or comparisons, to the parts of your school and the organelles of a cell. For instance, think of something that you are familiar with, like a refrigerator. Your refrigerator has many parts, some that you see and some that you can not. Now, think of a cell. You have seen some organelles of a cell, and some have remained unseen. You also know that certain organelles have certain functions. The mitochondria are the powerhouse of the cell. Your refrigerator has a powerhouse as well. It is the motor that helps to keep your food cold.

Now you will go out into the school to try to compare school parts to the organelles of a cell.

Organelle	School Part	Why It Matches

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Tour de City

Instructions: You are about to take a tour, either real or imagined, around your city (mall or another location). You will pass through parts of the city that are familiar, yet you must think of them in new ways. You are going to develop analogies, or comparisons, to the parts of your city and the organelles of a cell. For instance, think of something that you are familiar with in a city, like city hall. City hall is where city policies and regulations are passed. It is like the control center for the city. Now, think of a cell. You have seen some organelles of a cell, and some remain unseen. You also know that certain organelles have certain functions. The nucleus is the control center of the cell. City hall is the control center for your city.

Now you will go out into your city to try to compare city parts to the organelles of a cell.

Organelle	City Part	Why It Matches

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Tour de School or City

Teacher Resource Page

Below are examples of possible student responses. All student responses with proper justification should be accepted.

Tour de School

<u>Organelle</u>	<u>School Part</u>
nucleus	office
cell wall	fences
cell membrane	walls
vacuoles	classrooms
cytoplasm	air in building
chloroplast	cafeteria

Tour de City

<u>Organelle</u>	<u>City Part</u>
lysosome	waste disposal plant
mitochondria	power plant
endoplasmic reticulum	transportation system
chloroplast	food production factory
nucleus	city hall
golgi bodies	post office
cytoplasm	open space (land/air)
ribosomes	human work force