

LS-HHMI Outreach Summer Curriculum Project Classroom Resource Information Form

Title	Browne teacher guide.doc, BrowneStudentGuide.doc		
Resource Type	Lesson Plan <input type="checkbox"/> Activity <input type="checkbox"/> Lab Activity <input type="checkbox"/> Homework Assignment <input type="checkbox"/> Correlations <input type="checkbox"/> Other <input type="checkbox"/> <Specify>		
Description	Students will use online resources as well as prepared slides viewed under the light microscope to make correlations between cell structure and function. The goal is for students to understand that a cell's morphology is directly linked to the cell's structure.		
Author(s)	Erica Browne		
Author Institution(s)	Daniel Hand High School		
Objective	A mini-lab allowing students to summarize the relationship between the morphology of cell types and its function. The goal is to increase understanding of the relationship between the physiology/morphology and the anatomy/structure of cells. Students will be able to identify cell and tissue types based on the physical appearance. Students will be able to make a connection between the cell morphology and function. (Ex: stratified epithelial tissues are made of layers of cells and provide protection from pathogens and abrasion)		
Key Concepts	Relationship between cells, tissues and organs. Compare and contrast different cell types.		
Student Prep	Students need to be familiar with use of a light microscope, how to make a lab drawing, the four basic tissue types (muscle, nervous, epithelial, connective).		
Materials	Compound light microscopes, prepared histology slides, computers with internet connection, paper for lab diagrams, quiz or lab practical questions (not included- at teacher discretion)		
Grade Level(s)	10,11,12 th grade (best for Anatomy and Physiology or Honors Biology- but can be modified to fit into any class talking about cell structure and function)		
Teacher Prep Time	30 minutes to set up microscopes/ slides and laptops	Class Time	2 periods in class, some work can be completed at home
National Standards	Standard C: Life Science: The Cell: Cells have particular structures that underlie their functions. Every cell is surrounded by a membrane that separates it from the outside world. Inside the cell is a concentrated mixture of thousands of different molecules which form a variety of specialized structures that carry out such cell functions as energy production, transport of molecules, waste disposal, synthesis of new molecules, and the storage of genetic material.		
State Standards	Connecticut: 10.1 - Fundamental life processes depend on the physical structure and the chemical activities of the cell. D INQ.6 Use appropriate tools and techniques to make observations and gather data.		
Sources			
References	Websites: http://www.udel.edu/biology/Wags/histopage/colorpage/colorpage.htm http://www.kumc.edu/instruction/medicine/anatomy/histoweb/ http://www.austincc.edu/histologyhelp/tissues/index.html http://krupp.wcc.hawaii.edu/BIOL100L/Assignments/lab10home.htm		

Assessment	Lab practical or quiz on histology slides. Give a slide or an image of a real slide a student should be able to: <ol style="list-style-type: none">1. Name specific type of tissue2. Name major tissue type (muscle, nervous, epithelial, connective)3. Give example of location this tissue is found in body List a function (filtration, protection etc) of the tissue type
-------------------	---