

Designer Cell Challenge

The shape of a cell reveals its function. Designing a cell will allow you to begin to think about the relationship between a cell's structure, its function and how it interacts with cells around it.

Specialized cells vary widely with respect to:

- shape, size, number of organelles, types of organelles

Challenge:

1. Determine a desired function for a new animal or plant cell
 - It must be a **NEW** function.
2. Determine the shape, size, and organelle distribution required for your cell required to perform its **NEW** function
3. Create a drawing (digital or by hand) of your cell

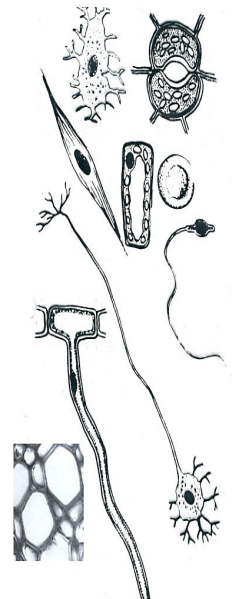


Diagram & Design Requirements:

- Title of where the cell is found (*ie Animal Cell, Fish cell, flower cell...*) and its unique function.
- Cell should include organelles covered in class **and unique/researched** structures/organelles.
 - For example, some special parts of nerve cells are dendrites, the axon and a myelin sheath.
 - You should include and combine parts from other specialized cells.
 - You can create new organelles with logical structure related to function as well
 - References for researched structures (website link is acceptable)
- All parts should be clearly **labeled** with correct spelling on the diagram. A legend/key may be used.
- Researched structures should indicate the type of cells where they are normally found.
- It will be large enough to **easily distinguish** all the parts.

Written Requirements: **TO BE COMPLETED INDIVIDUALLY**

1. What is the unique **function** of your cell? Why is this function desirable for an organism? ②
2. What special features does your cell contain? ②
*List of Features → (more, longer, larger.... **NOT WHY PRESENT**)*
3. What is the function of unique/researched organelles? ②
4. How is the structure of your cell related to its function? ④
*ie. **How** do these special features make it suited for its function?
Why does it have more or less of certain organelles?*



Name: _____

Partner: _____

Diagram & Design	
Organelles are clearly indicated including correct size, shape and location.	/5
Researched parts for specific function are clearly indicated, including where normally found. Unique structures: logical structure for function.	/4
Clarity: Organelle labels/key/legend is clear and easy to use. Easy to distinguish different parts of cell.	/3
Professionalism (neat, carefully constructed, planning evident...)	/5
References (website link acceptable)	/2
Written Answers – Completed Independently	
Describe the function of your cell and why function is desirable.	/2
List of special structure(s)	/2
Function of unique/researched organelles	/2
How do these special features make it suited for its function?	/4
Total	/29