Group Work: Understanding Cell Structure in Plant and Animal Cells

**Overview**

In this online asynchronous assignment, students will be divided into **5 groups**, each focusing on creating and analyzing physical and digital models of either plant or animal cells. Each group member will individually create a 3D model of a plant or animal cell using materials of their choice (e.g., Play-Doh, paper, clay). The group will then select the best model, generate a digital version using AI, and collaboratively compare and contrast the two models.

**Group Tasks**

**Group 1: Animal Cell**

Each member creates a 3D model of an animal cell using any material (Play-Doh, clay, paper, etc.). The group selects the best model to represent the animal cell.

**Group 2: Plant Cell**

Each member creates a 3D model of a plant cell using any material. The group selects the best model to represent the plant cell.

**Group 3: Animal Cell**

Each member creates a 3D model of an animal cell using any material. The group selects the best model to represent the animal cell.

**Group 4: Plant Cell**

Each member creates a 3D model of a plant cell using any material. The group selects the best model to represent the plant cell.

**Group 5: Prokaryotic cell**

Each member creates a 3D model of a prokaryotic cell using any material. The group selects the best model to represent the plant cell.

**Assignment Breakdown:**

1. **Step 1: Individual 3D Model Creation (All Groups):**
   1. Each student will create their own 3D model of either a plant or animal cell using any material (e.g., Play-Doh, clay, paper, or other materials available to them).
   2. Ensure that all major organelles are represented and labeled clearly in the model. Take a high-resolution photo of the 3D model for submission.
2. **Step 2: Group Selection of Best 3D Model (Group Decision):**
   1. Asynchronously, each group will review the photos of all individual models and select the best one to represent their group’s cell. The selected model should be the most accurate and clearly labeled.
3. **Step 3: AI-Generated Cell Model (All Groups):**
   1. The group will collaborate to generate a digital version of their selected 3D model using an AI tool (e.g., DALL-E, MidJourney, Copilot). The AI-generated model should closely resemble the selected physical model.
4. **Step 4: Comparison and Analysis (All Groups)**
   1. Group members will compare the AI-generated image with the physical model selected by the groups. The comparison should focus on similarities, differences, and reasons for any discrepancies between the physical and digital models. A 1-**page comparative report** will be written, explaining the accuracy of the digital model and possible reasons for any differences.
5. **Step 5: Final Group Submission:**

**Deliverables**

* **Single PDF document containing**  
  + A high-resolution image of the selected 3D model.
  + The AI-generated image of the cell.
  + A 1-page report comparing the 3D and AI models, highlighting any differences or inaccuracies.

**Peer Review**

Please complete this peer-reviewed survey so I can assign your Group Collaboration grade, which is part of the Module 3 Group Work rubric. Failure to complete the survey will result in a grade of 0. It’s important to be honest in your responses to ensure that credit is given fairly for the work completed by your groupmates.

Module 3 Group Work [Peer Review Survey](https://canvas.txstate.edu/courses/2443820/quizzes/8592049)

 Grading

Your assignment will be evaluated using the attached rubric. [How do I view the rubric for my assignment?Links to an external site.](https://community.canvaslms.com/t5/Student-Guide/How-do-I-view-the-rubric-for-my-assignment/ta-p/275)

Your assignment must comply with the Texas State Honor Code. Explore [Academic Integrity ResourcesLinks to an external site.](https://www.txst.edu/honorcodecouncil/student-resources.html).

Grading Rubric

