



DRIVING QUESTION

How does a disease that affects a specific organelle disrupt the function of the cell as a whole, and how can current research inform treatment and future study?

PROJECT SUMMARY

In this project, students will explore how a disease that affects one organelle disrupts the function of the whole cell. They will research the organelle's normal role, how its malfunction leads to symptoms in the body, and what current science is doing to treat or study the disease. The final product will communicate the findings to a general audience.

REAL-WORLD CONTEXT

This project has real-world context by focusing on diseases caused by organelle malfunction, a major area of medical research. Students conduct research and create professional products such as pamphlets, posters, slide decks, etc. This project also connects to students personally, since many know someone affected by disease or are interested in health and medicine.

PRODUCTS & AUDIENCE

Students communicated their research in a number of ways to other students, including: scientific research poster, mini-poster/trifold, infographic, slide deck, patient educational pamphlet, children's storybook or comic, short video, podcast episode, 3D or digital model.

STUDENT REFLECTIONS

- "I was able to gain knowledge on a new and different subject with others, deepening my understanding of certain diseases that come from damage to different parts of the cell. I was able to assign small pieces of information and collaboration worked very well."
- "This project further excelled my skills when it comes to teamwork and also applying creativity to our projects based on the rubric given."
- "The group contract helped us the most to be accountable for our parts of the project."
- "I really liked hearing the warm and cool feedback to express the best possible understanding of how to make things easy to comprehend."

NC PORTRAIT OF A GRADUATE SKILLS GAINED

 **COLLABORATION**

 **COMMUNICATION**

 **CRITICAL THINKING**

 **PERSONAL RESPONSIBILITY**

TEACHER REFLECTION

"Our AP Biology students excelled in the Cell Organelle and Disease PBL. They showed that they understood the material deeply, connecting specific cell organelles to the root causes of the diseases they selected. They did thorough research on current treatments and ongoing studies. Their professionalism, remarkable time management, and strong group delegation skills resulted in every team producing top-notch products and presentations."