

## Cell-to-Cell Checklist for Investigations and Presentations

### Assignment #1: Organelles

Students are responsible for researching and developing a presentation for one of the following cell parts:

- Mitochondria
- Nucleus
- Cell membrane and cell wall
- Endoplasmic reticulum and ribosome
- Golgi apparatus and lysosomes
- Cytoplasm and cytoskeleton

Students conduct research and develop presentations during two periods, and teach the class about their organelles on the third day.

Each presentation answers the following questions:

- In what type of cell is your organelle found?
- What is the organelle's composition or structure? (include a diagram, photograph, or illustration)
- What is your organelle's function and why is it important?
- What are the mechanisms of the organelle's function? How is it regulated?
- What is the connection between the organelle's function and the cell's function, and what would happen if a cell did not have the organelle?
- What sources did you use to get pictures and unique information?

### Assignment #2: Diseases

Team members assume the role of a medical researcher or reporter/newspaper writer, choose a medical condition or disease process to investigate, and trace the disease process to the cellular level. Final presentations address the following points:

- Description of the health problem and its processes
- Explanation of risk and transmission, including whether the disease is infectious and what genetic or environmental factors are involved
- Description of cellular malfunctions or abnormalities that are characteristic of the disease
- How the research in the field began
- Latest research findings and where they are occurring
- Possible benefits of the research
- Some of the obstacles faced by researchers
- Controversial aspects of the research and opposing views
- Ethical implications of the research
- How the research can apply to other research in the field

Support your presentation with a newsletter that includes all of the following elements:

- Sequenced diagram of the disease process at the cellular level from transmission to recovery or death (whichever comes first)
- Article documenting current disease research and related medicine
- Individual opinion essays expressing personal beliefs about ethical concerns related to the research (a supported argument)
- Bonus: Additional research.** Research the policies governing cell research in other countries. Which countries allow the greatest number of opportunities and incentives for scientists to study the topic? How are scientific investigations funded? Which countries are making the greatest progress?