

Each Has a Role in Reaching the Goal

A Cell Metaphor

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Discipline / Subject: Life Science

Topic:
Cell Structure and Function

Grade Level:
6-8

Resources / References / Materials Teacher Needs:

- 1) Online resource for searching pictures.
- 2) PowerPoint, Microsoft Word, or similar program for creating picture board.
- 3) Cell organelle function table (attached).
- 4) List of organelles, their functions, and kennel metaphors (attached).
- 5) Example picture board (attached).

Lesson Summary:

Students will use the components of an Iditarod racing kennel, and the functional role they play in building an Iditarod dog team, to create a metaphorical model of a cell and the functional role its organelles play in creating proteins.

Standard's Addressed: (Local, State, or National)

- 1) Develop and use models to support explanations about the structure and function relationships in cells and specific parts of the cell.

Learning Objectives:

- 1) Students can explain the function of cell organelles, and describe how they work together to carry out the role of a cell.
- 2) Students can metaphorically link the components of an Iditarod racing kennel to the functions of key cell organelles.

Assessment:

Students can share their completed picture board and use it as a model to communicate their understanding of the functions of each cell organelle.

Procedural Activities

- 1) Create an organized table to record the functions of each organelle in the cell, paying close attention to how each organelle works together to reach the goal of producing proteins. Include rows or columns that can later be used to record the components of an Iditarod racing kennel that will be used to model each organelle's function. (See example table attached)
- 2) Investigate components of an Iditarod racing kennel, paying close attention to how each component plays a role in the development of an Iditarod racing team.
- 3) Complete the table by entering kennel components that will model each cell organelle and describe their metaphorical relationship.
- 4) Use the Internet to search and save photos of each kennel component you will use in your metaphor.
- 5) Choose a photo to use as a backdrop for your picture board.
- 6) Paste your background picture onto a PowerPoint slide or other similar application.
- 7) Continue pasting in your pictures of kennel components to create an Iditarod racing Kennel.
- 8) Use textboxes to name and label each component.
- 9) Use your picture board as a model to communicate the function of each component and how its function relates to a specific cellular organelle.

Materials Students Need:

- 1) Cell organelle table.
- 2) Internet.
- 3) PowerPoint (or similar program).

Technology Utilized to Enhance Learning:

- 1) Internet
- 2) PowerPoint

Other Information:

Students should be encouraged to site all photos taken from websites. Depending on your desired outcomes, students can also create a bibliography to accurately site their photo sources.

Modifications for Special Learners/ Enrichment Opportunities

The quantity of organelles studied in this less can vary. Students can be asked to create their own table for organizing information or be given one like the example attached. Motivated students can be challenged to independently create their own metaphor to model the functions of cell organelles. Students interested in exploring multimedia presentations may link kennel component names to other documents or pages containing information on each organelle. Video and/or voiceovers may be incorporated as well.