

## **Cellular Respiration Unit Plan**

**Subject:** Biology

**Grade Level:** 10th

**Unit Topic:** Cellular Respiration

**Goal/Lesson Overview:** Students should understand how the process of cellular respiration accounts for the relationship of using energy to breakdown organic macromolecules which enables the body to carry out life processes.

### **Objectives:**

1. Explain what respiration is.
2. Describe what happens during the process of glycolysis.
3. Name two main types of fermentation.
4. Describe what happens during the Krebs cycle.
5. Explain how high-energy electrons are used by the electron transport chain.
6. Identify three pathways the body uses to release energy during exercise.

### **Colorado Standards and Benchmarks Addressed**

**Life Science Standard 3.2** – Students know and understand interrelationships of matter and energy in living systems.

#### **Benchmarks**

- 3.2.a.4** Explain the relationship between respiration and food (carbohydrates, fats, proteins)
- 3.2.a.5** Understand cellular respiration, the use of oxygen, and identify anaerobic respiration.
- 3.2.c.1** Explaining how large molecules (starch, protein) are broken down into smaller molecules, serving as an energy source or as basic building blocks in organisms.
- 3.2.c.3** Explain how a cell gets rid of carbons, nitrogens, hydrogens, and oxygens that result from the breakdown of larger molecules.
- 3.2.d.4** Explain the reason for increased breathing rate produced during exercise.

**Standard 6.1** Evaluate print and visual media for scientific evidence, bias, or opinion.

#### **Benchmarks**

- 6.1.a** Given an article interpret scientific data, determine if the conclusion of the author is supported by the data and/or if bias or opinion is present in the article.
- 6.1.b** Identify the potential bias based on the source (for example an environmental group or an industrial group)