

## Photosynthesis & Cellular Respiration

Philipsburg-Osceola Area Senior High School  
Mentor: Tracy Vipond

### Environmental Affects on Photosynthesis

Teacher: Michael Peterson  
Applied Biology (Grade 10)

#### Lesson Objectives

1. Students will summarize the overall process of photosynthesis.
2. Students will recognize how various environmental factors affect the rate of photosynthesis.

#### PA Standards Addressed

S: 3.3.10A, B.

#### Materials

- Textbook
- Pen/Pencil
- Notebook
- Lesson Handouts
- Computer/Microsoft PowerPoint
- Projector/SMART Board

#### Procedure

1. The lesson will begin with a review of the key concepts discussed in the previous lesson. Students will be asked to explain graphical representations related to how different environmental factors affect photosynthetic activity (*10-15 minutes*).
2. The focus of today's lesson is to continue to explain how the environment can affect the process of photosynthesis. Factors such as the amount of sunlight, carbon dioxide levels and temperature will be investigated in terms of how they can inhibit or promote photosynthesis. Properties of enzymes will be reinforced in this portion of the lesson, as enzymes can only perform under optimal conditions. This lesson will be an extension of the previous lesson where students will complete a worksheet that reinforces the concept of environmental factors having affects on photosynthesis. Various scenarios will be presented to check for understanding of concepts. Students will collaborate with one another in an effort to provide answers to the questions on the worksheet. (*15-20 minutes*).
3. The remaining class time will be spent answering the questions as a class and clarifying any unclear concepts (*10 minutes*).
4. **Closure:** Students will be reminded that this ends discussion of the topic of photosynthesis. The next lesson will begin with a discussion on cellular respiration. After the fundamentals of cellular respiration are discussed, students will be capable of explaining how both cellular respiration and photosynthesis feed off of each other (*1 minute*).

#### Evaluation

- Teacher observation of student participation (classroom discussion/questioning).
- Student performance on assessment (classroom assignment).