Lesson Title	Photosynthesis and Respiration
Length of Lesson	One (50 minute) class period
Created By	Will McBryde, Rob Thornton
Subject	General Science
Grade Level	8th grade
State Standards	8th: 1b, d (Inquiry); 2a (Physical Science); 3h (Life Science)
DOK Level	DOK 3
DOK Application	Cite Evidence, Assess, Differentiate
National Standards	5-8: A (Inquiry); C (Life Science)
Graduate Research Element	Photosynthesis and respiration are important in the subject of sequence stratigraphy in geology when recreating paleo-environments.

Student Learning Goal:
MS 8th Grade:
1(b) Distinguish between qualitative and quantitative observations make inferences based on observations. (d) Analyze evidence that is used to form explanations and draw conclusions; 2 (a) Identify patterns found in chemical symbols, formulas, reactions, and equations that apply to the law of conservation of mass.; 3(h) Describe how an organism gets energy from oxidizing its food and releasing some of its energy as heat.

National Science Education Standards of Content 5-8:
(Inquiry - A) Abilities necessary to do scientific inquiry, Understandings about scientific inquiry; (Life Science – C) Structure in Functions in Living Systems

Materials Needed (supplies, hand-outs, resources):
Projector, laptop, Smartboard (for Brain Pop), PowerPoint (INSPIRE_McBryde_02.15.11_PP)

Lesson Performance Task/Assessment:
This lesson is a transition lesson between chemistry and ecology linked by the chemical equations for photosynthesis and respiration. Students will observe a Brain Pop video(s) and take the quiz(s) as a task assessment. The Brain Pop will be followed by a PowerPoint lecture that will introduce students to photosynthesis and respiration. Students will be asked questions during the lecture as a check for understanding.

Lesson Relevance to Performance Task and Students:
The Brain Pop will help the students visualize the concepts of these processes that are not always easy to grasp. The concepts will be reinforced by having the students listen to a PowerPoint lecture done by the teacher.

Anticipatory Set/Capture Interest:
Brain Pop videos entitled Photosynthesis, Cellular Respiration, and Carbon Cycle (if there is enough time) will be viewed.

Guided Practice:
The Brain Pop quiz will be guided as well as the PowerPoint lecture.

Independent Practice:
Student participation during the Brain Pop video(s) and the PowerPoint lecture are independent.

Remediation and/or Enrichment:
Remediation- Individual IEP; Enrichment - Have students draw a diagram explaining photosynthesis or respiration.

Check(s) for Understanding:
Observe students participation during Brain Pop and lecture. Ask students questions.

Closure:
Question 1: Give an example of photosynthesis?

Question 2: Give an example of respiration?

Possible Alternate Subject Integrations:
Math, Chemistry

Teacher Notes:
The Brain Pop video on Photosynthesis and Cellular Respiration will be watched first followed by the PowerPoint lecture. If there is time at the end of class the Brain Pop on Carbon Cycle will be watched.

A subscription to Brain Pop is required for use of the program.