

Name \_\_\_\_\_ Date \_\_\_\_\_  
 Biology SOL Review - Energy-Photosynthesis and Respiration

1. (2006-47) In the human body, muscle cells have an increased need for energy during exercise. To help supply this energy, the body will immediately increase —
- food intake to increase the substances available for respiration
  - activity in the nervous system to stimulate intake of carbon dioxide
  - the need for waste products to be retained
  - the breathing rate to supply more oxygen to cells for the release of energy**

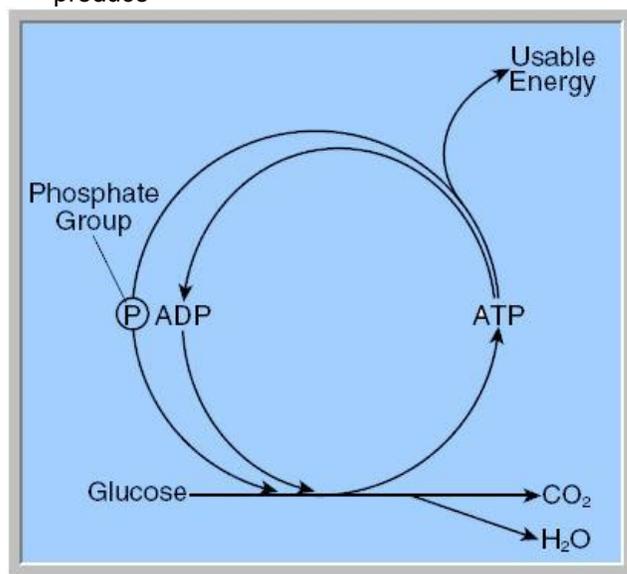
2. (2006-45) Which of the following is most effective in helping rain forest plants trap sunlight so that light energy can be converted to chemical energy?
- Large root size
  - Small seed size
  - Large leaf size**
  - Small stem

3. (2003-5) The process of photosynthesis ultimately converts light energy into —
- mechanical energy
  - nuclear energy
  - chemical energy**
  - electrical energy

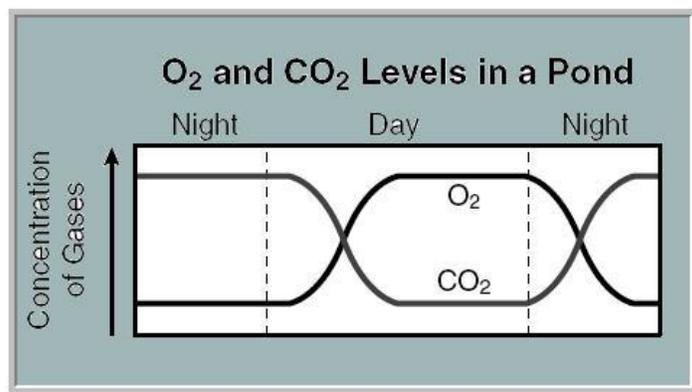
4. (2002-49) Photosynthesis is important for almost all life on Earth because it —
- uses simple elements
  - is responsible for most decay
  - produces oxygen**
  - releases usable forms of nitrogen

5. (2005-21) Algae and multicellular plants are autotrophs because they —
- absorb nutrients from soil
  - capture sunlight to produce sugars**
  - break down starches to glucose
  - decompose dead organisms

6. (2006-41) The picture models a cellular metabolic process. The main purpose of this process is to produce —



- usable energy**
- ADP
- phosphate groups
- H<sub>2</sub>O



7. (2001-26) The graph shows how dissolved O<sub>2</sub> and CO<sub>2</sub> levels changed in a pond over a 24-hour period. What caused the decrease in O<sub>2</sub> concentration during the night?
- Increased evaporation
  - Decreased photosynthesis**
  - Increased respiration
  - Decreased temperatures

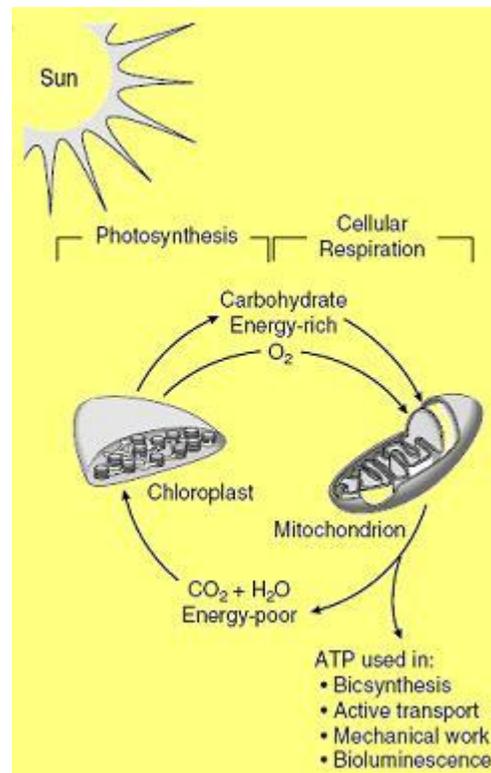
8. (2006-20) Scientists hypothesize that oxygen began to accumulate in Earth's atmosphere after the appearance of living things with the ability to —
- breathe air
  - photosynthesize**
  - reproduce sexually
  - form tissues

Comparison of Photosynthesis and Respiration		
	Photosynthesis	Respiration
Raw Materials	water and CO <sub>2</sub>	glucose and oxygen
Products	glucose and oxygen	water and CO <sub>2</sub>
Purpose	store energy	release energy

9. (2001-33) The processes of photosynthesis and respiration can be thought of as a cycle because—
- one is used only by plants and the other is used only by animals
  - both give off oxygen to be used by animals
  - the products of one are used as the raw materials of the other**
  - they both have the same purpose
10. Photosynthesis is important for almost all life on Earth because it —
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11. (2002-23) Which of these processes is carried out in the same way in both plants and animals?
- Excretion of metabolic waste
  - Circulation of body fluids
  - Asexual reproduction
  - Cellular respiration**

12. (2005-9) The energy in the food produced by autotrophs or taken into the bodies of heterotrophs must be changed into a form that cells can use. The energy-transferring molecule used by cells is —
- CO<sub>2</sub>
  - RNA
  - ATP**
  - DNA



13. (2004-34) Which statement is supported by the diagram?
- Carbohydrates are converted into ATP by the mitochondrion.**
  - The mitochondrion uses the sun's energy directly.
  - The main source of energy for photosynthesis is carbohydrates.
  - The end products of photosynthesis do not provide energy for cellular respiration.
14. (2005-49) Unlike plants, fungi cannot make their own food because they do not have —
- spores
  - roots
  - chlorophyll**
  - hyphae