

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**

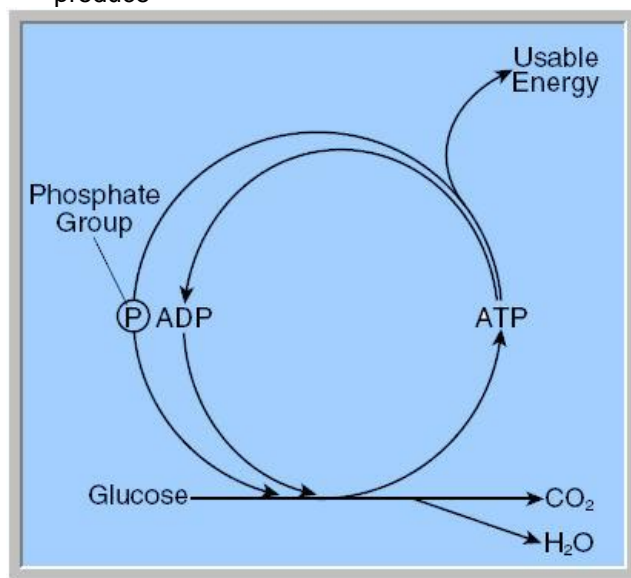
2. (2006-45) Which of the following is most effective in helping rain forest plants trap sunlight so that light energy can be converted to chemical energy?
- Large root size
 - Small seed size
 - Large leaf size**
 - Small stem

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

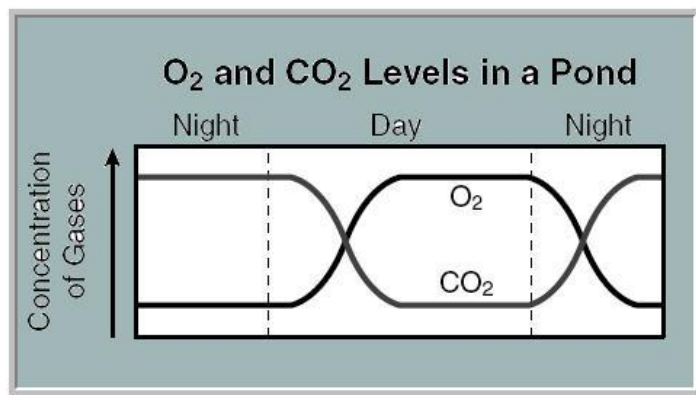
4. (2002-49) Photosynthesis is important for almost all life on Earth because it —
- uses simple elements
 - is responsible for most decay
 - produces oxygen**
 - releases usable forms of nitrogen

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
- H₂O



7. (2001-26) The graph shows how dissolved O₂ and CO₂ levels changed in a pond over a 24-hour period. What caused the decrease in O₂ concentration during the night?
- Increased evaporation
 - Decreased photosynthesis**
 - Increased respiration
 - Decreased temperatures

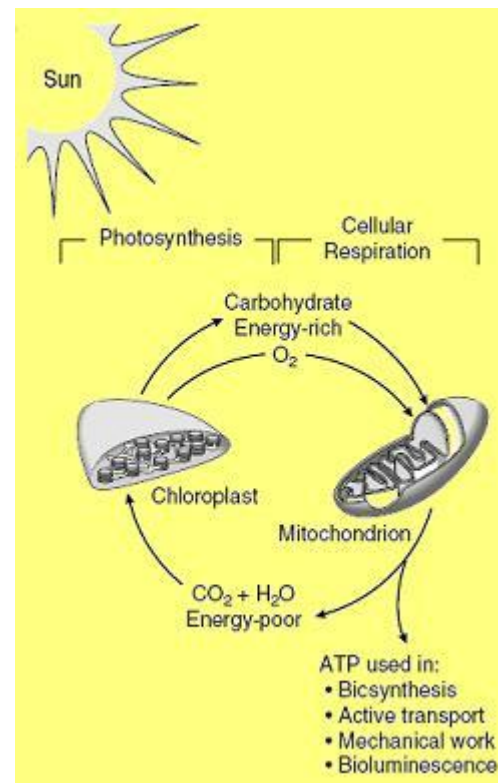
8. (2006-20) Scientists hypothesize that oxygen began to accumulate in Earth's atmosphere after the appearance of living things with the ability to —
- breathe air
 - photosynthesize**
 - reproduce sexually
 - form tissues

Comparison of Photosynthesis and Respiration		
	Photosynthesis	Respiration
Raw Materials	water and CO ₂	glucose and oxygen
Products	glucose and oxygen	water and CO ₂
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 —
- is responsible for most decay
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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 —
- CO₂
 - 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