

Biology Unit 4
Vocabulary Activity

Name _____
Date/Hour _____

Photosynthesis – Use Chapter 6 from the textbook to answer. Write the correct term from the list below in the space next to its definition.

autotrophs	chemiosmosis	light reactions
C ₄ pathway	chlorophyll	photosynthesis
Calvin cycle	electron transport chain	pigment
CAM pathway	granum	stomata
carbon fixation	heterotrophs	thylakoids
carotenoids		

- _____ 1. the process by which light energy is converted to chemical energy
- _____ 2. organisms that use energy from sunlight or inorganic substances to make organic compounds
- _____ 3. organisms that get energy by consuming food
- _____ 4. stack of thylakoids
- _____ 5. a substance that absorbs light
- _____ 6. the primary pigment involved in photosynthesis
- _____ 7. absorb wavelengths of light different from those absorbed by chlorophyll
- _____ 8. the series of molecules down which excited electrons are passed in a thylakoid membrane
- _____ 9. incorporation of carbon dioxide into organic compounds
- _____ 10. a series of enzyme-assisted chemical reactions that produces a three-carbon sugar molecule
- _____ 11. CO₂ fixed into four-carbon compounds
- _____ 12. water-conserving process of carbon fixation
- _____ 13. the process that relies on a concentration gradient of protons
- _____ 14. a series of reactions that involve pigments
- _____ 15. small pores in leaves
- _____ 16. disk-shaped structures inside chloroplasts

Photosynthesis - Use Chapter 6 of the textbook to answer. In the space provided, write the letter of the stage that best matches the phrase. Answers may be used more than once.

- Stage 1 of photosynthesis (light dependent reactions)
- Stage 2 of photosynthesis (light independent reactions)

- _____ 1. Light energy is stored as ATP and NADPH.
- _____ 2. Organic compounds are formed using carbon dioxide.
- _____ 3. Calvin cycle
- _____ 4. Excited electrons are passed along an electron transport chain.
- _____ 5. Pigment molecules absorb energy.
- _____ 6. Water is split.

Photosynthesis - Use Chapter 6 of the textbook to answer. In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- _____ 7. Yellow and orange plant pigments are known as which of the following?
 - chlorophyll
 - electron transport chains
 - carotenoids
 - thylakoids
- _____ 8. The rate of photosynthesis decreases as the
 - oxygen concentration decreases.
 - carbon dioxide concentration decreases.
 - light intensity increases.
 - All of the above
- _____ 9. In the first stage of photosynthesis, hydrogen ions are pumped
 - into a photosystem.
 - out of the chloroplast.
 - into the thylakoids.
 - Both (a) and (b)
- _____ 10. Products of the Calvin cycle are
 - three-carbon sugars.
 - used to produce organic compounds.
 - used to regenerate the initial five-carbon compound.
 - All of the above

Cellular Respiration – Use Chapter 7 of the textbook to answer. Write the correct term from the list below in the space next to its definition.

acetyl CoA	FAD	mitochondrial matrix
aerobic respiration	fermentation	NAD ⁺
alcoholic fermentation	glycolysis	NADH
anaerobic	kilocalorie	oxaloacetic acid
cellular respiration	Krebs cycle	pyruvic acid
citric acid		

- _____ 1. yeast use this process to convert pyruvic acid to ethyl alcohol and carbon dioxide
- _____ 2. three-carbon product of glycolysis
- _____ 3. two-carbon molecule
- _____ 4. process that produces large amounts of ATP
- _____ 5. does not require oxygen
- _____ 6. reduced electron carrier molecule formed in glycolysis
- _____ 7. four-carbon molecule that combines with acetyl CoA
- _____ 8. six-carbon molecule in the Krebs cycle
- _____ 9. electron carrier molecule that is oxidized when G3P is reduced
- _____ 10. the process in which cells make ATP by breaking down organic compounds
- _____ 11. the space inside the inner membrane of a mitochondrion
- _____ 12. electron carrier molecule similar to NAD⁺
- _____ 13. pathway in which two molecules of pyruvic acid are produced
- _____ 14. pathway that breaks down acetyl CoA, producing CO₂, hydrogen atoms, and ATP
- _____ 15. the recycling of NAD⁺ under anaerobic conditions
- _____ 16. unit of energy

Cellular Respiration – Use Chapter 7 of the textbook to answer. In the space provided, write the letter of the description that best matches the term or phrase.

- | | |
|-----------------------------------|---|
| _____ 1. lactic acid fermentation | a. occurs in the inner membrane of the mitochondrion |
| _____ 2. alcoholic fermentation | b. recycled during fermentation |
| _____ 3. electron transport chain | c. sore muscles |
| _____ 4. Krebs cycle | d. rising bread dough |
| _____ 5. NAD ⁺ | e. results in the formation of NADH and FADH ₂ |

Cellular Respiration – Use Chapter 7 of the textbook to answer. In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- _____ 6. Glucose is converted into pyruvic acid during

a. glycolysis.	c. fermentation.
b. the Krebs cycle.	d. carbon fixation.
- _____ 7. Some of the glucose required for cellular respiration in humans is obtained by

a. making food.	c. eating food.
b. taking vitamins.	d. All of the above
- _____ 8. If oxygen is NOT available to accept electrons during aerobic respiration,

a. aerobic processes stop.	c. only small amounts of ATP can be produced.
b. fermentation proceeds.	d. All of the above
- _____ 9. During the second stage of cellular respiration,

a. there is a net gain of two ATP.
b. the electron transport chain and chemiosmosis use the energy in NADH and FADH ₂ to produce up to 34 ATP.
c. energy is transferred from glucose and pyruvic acid to NADH and FADH ₂ .
d. Both (b) and (c)

Photosynthesis - Use Chapter 6 of the textbook to answer. In the space provided, write the letter of the description that best matches the term or phrase.

- | | | |
|-------|--------------------------|--|
| _____ | 1. organic compounds | a. site of Calvin cycle |
| _____ | 2. light reactions | b. consume food to get energy |
| _____ | 3. thylakoids | c. accessory pigment |
| _____ | 4. stroma | d. site of light reactions |
| _____ | 5. chlorophyll <i>b</i> | e. relies on a concentration gradient of protons |
| _____ | 6. sun | f. first stage of photosynthesis |
| _____ | 7. heterotrophs | g. contain chemical energy |
| _____ | 8. chemiosmosis | h. pigment directly involved in light reactions |
| _____ | 9. autotrophs | i. use energy from light or inorganic substances to make organic compounds |
| _____ | 10. chlorophyll <i>a</i> | j. source of energy for living systems |
| _____ | 11. CAM pathway | k. adaptation to hot, dry climate |

Cellular Respiration - Use Chapter 7 of the textbook to answer. In the space provided, write the letter of the description that best matches the term or phrase.

- | | | |
|-------|-----------------------------|---|
| _____ | 1. organic compounds | a. first stage in cellular respiration |
| _____ | 2. fermentation | b. citric acid is involved |
| _____ | 3. ATP | c. produces up to 38 ATP |
| _____ | 4. glycolysis | d. produced by cellular respiration |
| _____ | 5. aerobic respiration | e. electrons are transferred from molecule to molecule |
| _____ | 6. Krebs cycle | f. regenerates NAD^+ so cell can continue producing ATP in the absence of oxygen |
| _____ | 7. electron transport chain | g. used by organisms to store chemical energy |
| _____ | 8. chemiosmosis | h. involved in glycolysis |
| _____ | 9. G3P | i. involves a concentration gradient |

