Name Period 1 / 2 / 4 / 5

Lesson 3.3 Photosynthesis Flipbook

Engage

Watch the video clip and answer the questions below while the video is playing. (3 minutes & 45 seconds)
http://player.discoveryeducation.com/index.cfm?guidAssetId=C9C5381D-0312-44C3-AA31-07BEF69B80E0

1. What is the difference between an autotroph and a heterotroph?

2. What is the overall equation used to represent a photosynthesis reaction?

3. List the structures found in plant cells that make photosynthesis possible.

Explore: *Use a classroom text book (the one with the macaw parrot on the cover) to answer the questions that follow in complete sentences. Begin reading on page 230.*

1. How do photosynthetic organisms capture light energy from the sun?

2. What is chlorophyll?

3. What are thylakoids?

4. What is the stroma?

You are now going to set up your foldable. It will include information for photosynthesis, aerobic and anaerobic respiration.
*Follow your instructor's directions on how to set it up. You will then turn to page **233** in the Parrot book to help complete the Photosynthesis pages. **Notice the arrows in the book are going the opposite direction as your foldable. Anywhere an arrow points in is a REACTANT. Anywhere an arrow comes out is a PRODUCT. Sometimes something can be a REACTANT and PRODUCT depending on the stage.*

Explain: Please answer the following questions after you did the photosynthesis portion of your foldable

5. What other names are used to refer to the Light-Independent reaction?

6. Which of the following is a product of the Calvin cycle (light-independent/dark reactions)?
a. carbon dioxide b. $NADP^+$ c. oxygen d. $FADH_2$

7. How do the light-dependent reactions of photosynthesis relate to the Calvin cycle?

8. What might happen to Earth's atmosphere if photosynthesis suddenly stopped? Explain in your own words.

Lesson 3.5 Aerobic Respiration Flipbook

Explore I *Cellular Respiration Overview*

Cellular respiration is the process by which food is broken down by the body's cells to produce energy, in the form of ATP molecules. Adenosine triphosphate (ATP) is considered by biologists to be the energy currency of life. It is the high-energy molecule present in the cytoplasm of every cell that stores the energy we need to do just about everything we do like moving our muscles. As food in the cells is gradually broken down, the released energy is used to make ATP so that the cell always maintains a supply of this essential molecule. In animal systems, ATP is synthesized in the tiny energy factories called mitochondria.

Cellular respiration is carried out by every cell in both plants and animals and is essential for daily living. Cellular respiration is an exothermic reaction, which means it produces energy. It is also a catabolic process - it breaks down polymers into smaller, more manageable pieces.

Engage

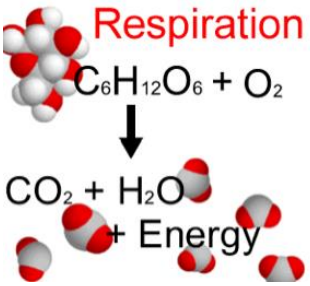
1. Think back to the marathon runner video. Where was the runner getting her energy?

2. Would you eat your marathon snack before a race? Explain.

3. Turn to your neighbor and listen to what their marathon snack is; would you eat their marathon snack? Why or why not?

The ultimate goal of cellular respiration is to take molecules like lipids, proteins, and carbohydrates and break them down into glucose molecules, then use this glucose to produce energy-rich ATP molecules. The general equation for cellular respiration is:

$$C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O + ATP\ (energy)$$



4. What is the process by which food is broken down to release energy?

5. Where does cellular respiration occur?

6. Does cellular respiration absorb or produce energy?

7. What is the ultimate goal of cellular respiration?

8. How many molecules of ATP are produced from cellular respiration?

Explore: Using p.95 in the Bat book, fill in the picture and table of cellular respiration on page 4 and 5 of your foldable

Explain: Please answer the following questions after you did the cellular respiration portion of your foldable.

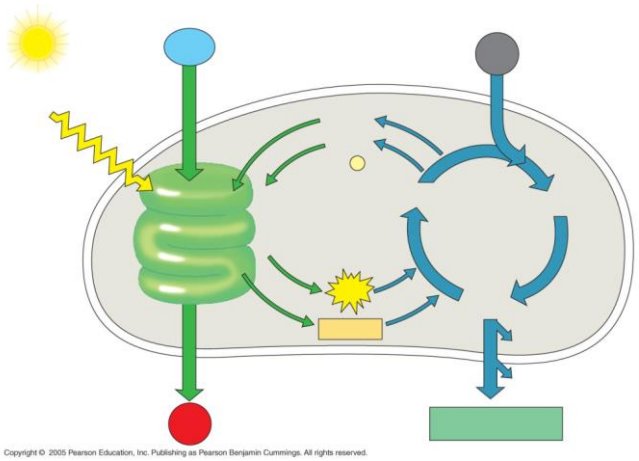
9. What is the difference between active and passive transport? (Bat book p. 81 - 84)

10. Overall, what is the purpose of cellular respiration?

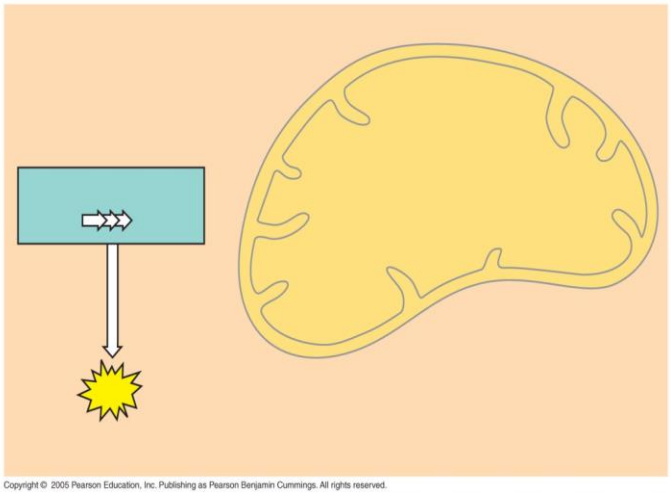
Engage - You will construct a foldable to organize the key concepts for this unit. Your instructor will model this process. The title page will be page 1

Directions: 1) Cut out each picture and chart and 2) glue to your foldable being sure to pay attention to the labeled page numbers. Once glued, your instructor will help you 3) write the overall equation on the chart, 4) label the key stages on the chart including the reactants and products, 5) label the location of stages and 6) purpose of each stage where indicated. Finally, 7) show how the information on the chart fits on the image.

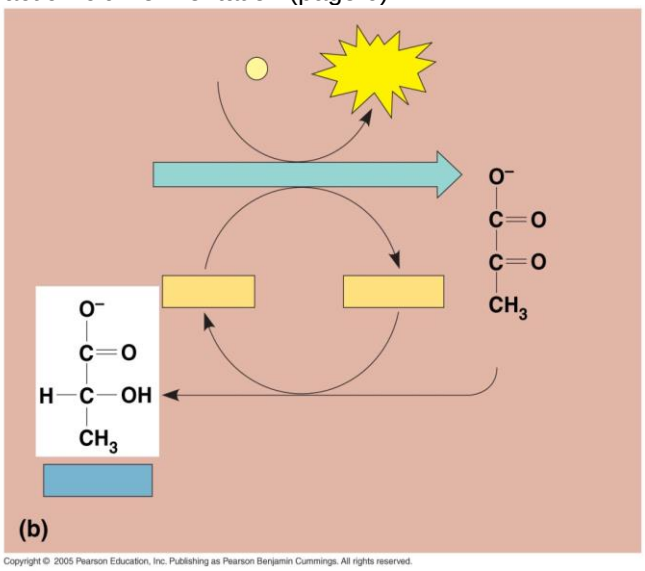
Photosynthesis (page 2)



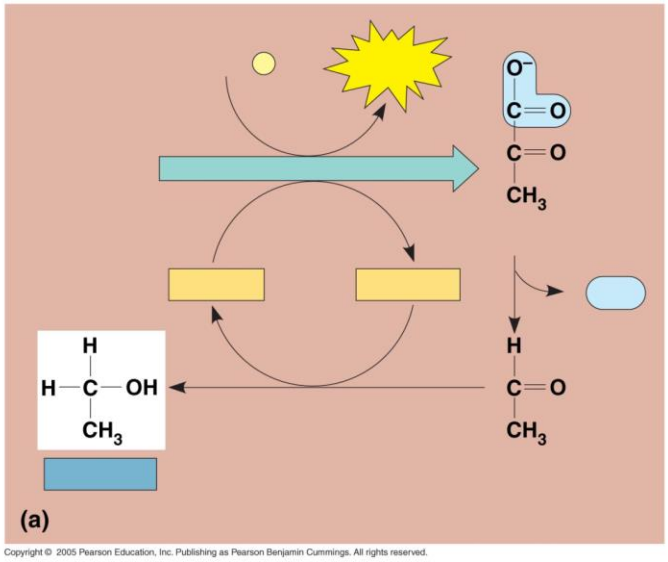
Cellular Respiration (page 4)



Lactic Acid Fermentation (page 6)



Alcoholic Acid Fermentation (page 8)



Photosynthesis
Equation:

Stage	Reactants	Products	Location	Purpose

Page 3

Cellular Respiration
Equation:

Stage	Reactants	Products	Location	Purpose

Page 5

Lactic Acid Fermentation
Equation:

Stage	Reactants	Products	Location	Purpose

Page 7

Alcoholic Fermentation
Equation:

Stage	Reactants	Products	Location	Purpose

Page 9