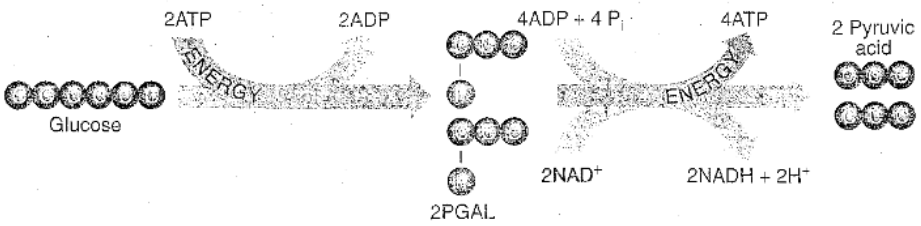
Name Date Class

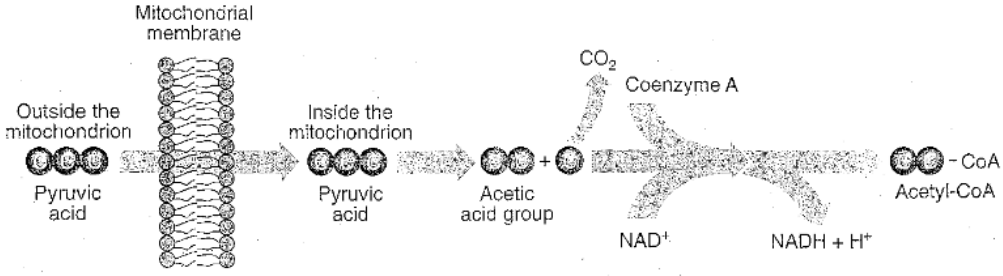
Transparency Master

BASIC CONCEPTS 12 CELLULAR RESPIRATION

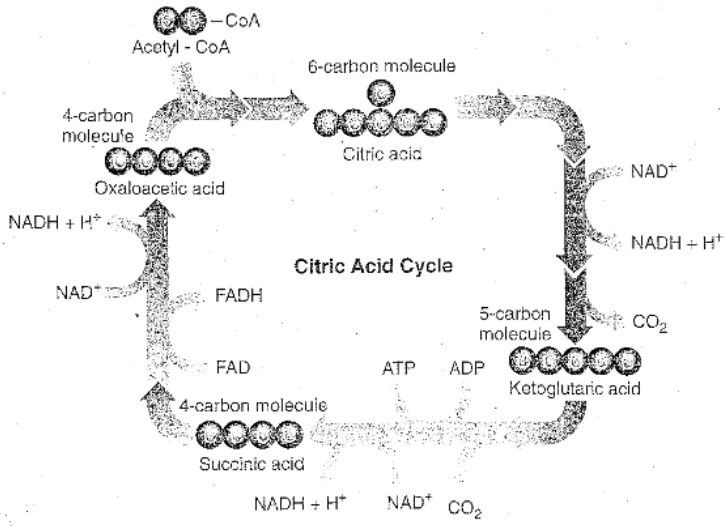
Glycolysis



Pyruvic Acid



Citric Acid Cycle



Name Date Class

Transparency Worksheet 7

BASIC CONCEPTS 12 CELLULAR RESPIRATION

USE WITH CHAPTER 10, SECTION 10.3

1. What is the source of energy for the first step of glycolysis? 2ATP

2. In glycolysis, what substance is broken down? What substance is the end product? glucose 2 pyruvate

3. In glycolysis, what is the ratio of glucose molecules to the net number of ATP molecules found at the end of the process? Explain your response. net 1 glucose : 2 ATP
makes 1 glucose : 4 ATP

4. Which of the processes shown in the transparency is anaerobic? Which of the processes is aerobic? anaero: glycolysis ferment aerob: Kreb ETC

5. Where does the breakdown of pyruvic acid occur? mitochondria

6. What is the end product of the breakdown of pyruvic acid? anaero: alcohol + CO_2 lactic acid aero: CO_2, ATP, H_2O

7. How is the pyruvic acid breakdown related to the citric acid cycle? C in pyruvate are used in cycle
* break C's to release H

8. As citric acid breaks down, what substance is released? CO_2

9. What is the part of aerobic respiration that follows the citric acid cycle? ETC = electron transport chain

Name _____ Date _____

CHAPTER REVIEW

CHAPTER 6

Understand the Concepts

Answer the following questions in one or two sentences.

1. What is the role of oxygen in aerobic respiration?
final H acceptor → H+O → H_2O

2. What happens to the energy released during cellular respiration?
(ATP made) → work to run life functions
e released

3. Explain the ADP-ATP cycle.
ATP → ADP + P
stored

4. Compare the energy release of aerobic respiration with that of anaerobic respiration.
lots more ATP little ATP

5. What is the role of enzymes in cellular respiration?
control all reactions
break glucose, Krebs
channel proteins (ETC)

6. Explain the importance of phosphorylation in biochemical reactions.
making ATP? life functions req. ATP

7. Explain the function of FAD and NAD^+ in aerobic respiration.
transport H to ETC

8. What role does the Krebs cycle play in cellular respiration?
break C bond to collect H
make a bit of ATP

9. Compare the efficiencies of aerobic and anaerobic respiration.
more efficient much less efficient
net 36 ATP 2 ATP

Name _____ Date _____ Class _____

Reinforcement and Study Guide

CHAPTER 10 ENERGY IN A CELL

Section 10.1 ATP: Energy in a Molecule

In your textbook, read about cell energy.

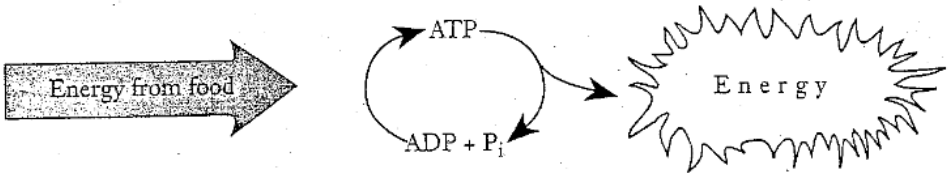
Use each of the terms below just once to complete the passage.

nutrient	store	reactions	releasing	adenosine triphosphate (ATP)
demand	supply	food	bloodstream	energy

In order to do biological work, the cells of organisms need a steady supply of (1) _____. All the energy needed for life processes is obtained from (2) _____. By the time ingested food reaches your (3) _____, it has been broken down into (4) _____ molecules that can enter your cells. Cell (5) _____ then break down the food molecules, (6) _____ energy. All the available energy cannot be used immediately. To balance energy (7) _____ and (8) _____, cells (9) _____ energy in the bonds of (10) _____. These molecules can be called the cell's energy currency.

In your textbook, read about forming and breaking down ATP and the uses of cell energy.

Examine the diagram below. Then answer the questions.



11. Structurally, how are ADP and ATP similar? How are they different? _____

_____

_____

12. How does a cell release energy? _____

_____

_____