

## Cellular Respiration and Fermentation

### Background Concepts

\*Define Cellular Respiration.

---the transfer of energy in \_\_\_\_\_

\*Which biological molecules can be used as fuel for cellular respiration?

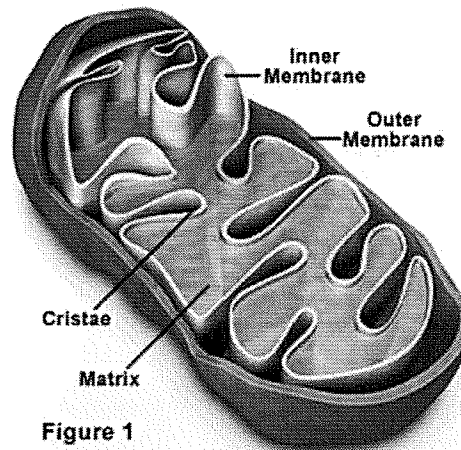
---\_\_\_\_\_ fats, and proteins

\*What organelle is used to carry out cellular respiration?

---\_\_\_\_\_

\*Students should be familiar with the following Mitochondrial Structures.

**Mitochondria Inner Structure**



\*Define an aerobic process.

---a metabolic process that requires \_\_\_\_\_

\*How much energy in glucose can be converted to ATP under aerobic conditions?

---if oxygen is available, \_\_\_\_\_ of the energy in glucose can be converted to \_\_\_\_\_

\*Define an anaerobic process.

---a metabolic process that does \_\_\_\_\_

\*How much energy in glucose can be converted to ATP under anaerobic conditions?

---if oxygen is unavailable, \_\_\_\_\_ of the energy in glucose can be converted to \_\_\_\_\_

## Equations

\*Write the word equation for cellular respiration. Identify the reactants and products.

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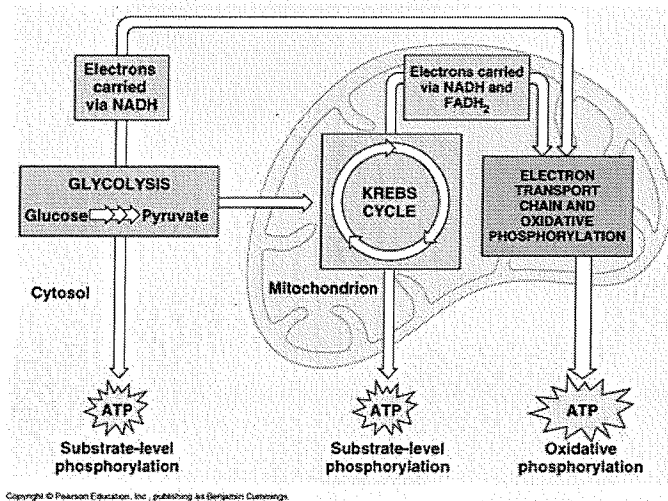
\*Write the chemical equation for cellular respiration. Identify the reactants and products.

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## Stages of Cellular Respiration

\*List the four stages of cellular respiration, in the proper order.

- 1.
- 2.
- 3.
- 4.



\*Use the following chart to help organize the details of cellular respiration.

	Glycolysis	Transition Reaction	Krebs Cycle	Electron Transport Chain
Where does the process occur?				
How many ATP are produced?				
Where are the 6 CO <sub>2</sub> produced?				
Where are the 6 O <sub>2</sub> used?				
Where are the 6 H <sub>2</sub> O produced?				

### Fermentation

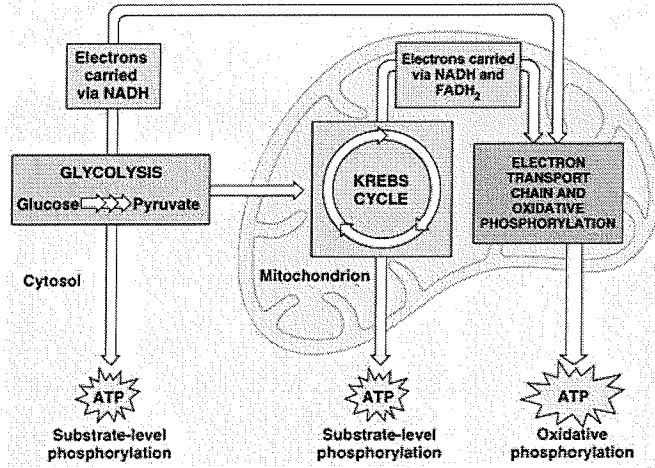
\*Use the following chart to help organize the details of fermentation.

	Alcohol Fermentation	Lactic Acid Fermentation
What are the products of the process?		
How many ATP are produced?		
Is the process aerobic or anaerobic?		
Which organisms carry out the process?		
How is the process important to humans?		

### Purpose of Cellular Respiration and Fermentation

\*Why do organisms need to carry out cellular respiration and / or fermentation?

---both processes produce \_\_\_\_\_



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