

## **Chapter 6: Vocabulary**

### **Glycolysis – the first stage in cellular respiration**

- Glucose – the starting reactant in glycolysis; it is a 6 carbon sugar
- Pyruvate – the ending product in glycolysis; 2 molecules of pyruvate are formed in glycolysis; it is a 3 carbon sugar
- Cytosol – another word for cytoplasm; this is the place where glycolysis occurs
- ATP – adenosine triphosphate; a stored form of energy; 2 molecules of ATP are formed in glycolysis
- NADH – an electron and hydrogen carrier; 2 molecules of NADH are formed in glycolysis; NADH carries electrons and hydrogen ions to the electron transport chain where it helps form ATP
- Substrate-level phosphorylation – the transfer of a phosphate group to a substrate to form ADP

**Acetyl CoA** – a molecule formed from pyruvic acid; 2 molecules of NADH are produced by this process

### **Krebs cycle – also called the citric acid cycle; the second stage of cellular respiration**

- NADH – an electron carrier; 6 molecules of NADH are formed in glycolysis; NADH carries electrons and hydrogen ions to the electron transport chain where it helps form ATP
- FADH<sub>2</sub> – an electron and hydrogen carrier; 2 molecules of FADH<sub>2</sub> are formed in the Krebs cycle; FADH<sub>2</sub> carries electrons and hydrogen ions to the electron transport chain where it helps form ATP
- ATP – adenosine triphosphate; a stored form of energy; 2 molecules of ATP are formed in the Krebs cycle
- Carbon Dioxide – a molecule released in the Krebs cycle
- Substrate-level phosphorylation – the transfer of a phosphate group to a substrate to form ADP
- Mitochondria – where the Krebs cycle occurs

### **Electron transport chain – the third stage of cellular respiration**

- Electrons – are moved between different protein carriers in the electron transport chain; this movement generates energy used to form ATP
- Hydrogen – moved across the mitochondria membrane during the electron transport chain; this movement helps form ATP
- Water – an end product of the electron transport chain
- Oxygen – a starting molecule of the electron transport chain
- ATP – adenosine triphosphate; a stored form of energy; about 34 molecules of ATP are formed in the electron transport chain
- Oxidative phosphorylation – the process by which the movement of hydrogen ions and electrons in the electron transport chains results in the formation of ATP
- Mitochondria – where the electron transport chain occurs

**Oxidation** – the loss of electrons

**Reduction** – the gain of electrons

**Aerobic respiration** – the process whereby glucose and oxygen is broken down to form carbon dioxide and water; this process involves the three stages of glycolysis, Krebs cycle and the electron transport chain; aerobic respiration requires oxygen

**Anaerobic Respiration** – the breakdown of glucose in the absence of oxygen; less ATP is formed than in aerobic respiration

**Fermentation** – another name for anaerobic respiration

- Alcoholic – glucose is broken down into carbon dioxide and ethanol; 2 molecules of ATP are formed
- Lactic acid (lactate) – glucose is broken down into lactic acid; 2 molecules of ATP are formed