Unit 3: Matter and Energy

Chapter 4: Photosynthesis and Cellular Respiration

1. **Chemical Energy** (meaning & how it is found in cells)

2. **ATP Cycle** (how ATP forms & breaks down) (also: how ATP releases energy)

3. **Types of Cellular Work** (3) (names & examples of each)

**Photosynthesis**

\[
\text{CO}_2 + 6 \text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{O}_2
\]

1. **Overall Equation** for Photosynthesis

**Cellular Respiration**

\[
\text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{O}_2 + 6 \text{CO}_2 + 6 \text{H}_2\text{O} \rightarrow 38 \text{ATP} + \text{Energy stored in ATP}
\]

1. **Aerobic vs. Anaerobic** (definitions)

2. **Overall Equation** of Cellular Respiration (including how much ATP is made)

3. **Metabolism** (meaning)

**Fermentation**

1. **Fermentation**
   
   a. Types (2)
   
   b. What each type makes