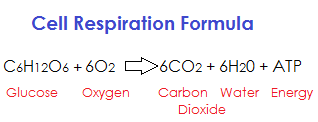
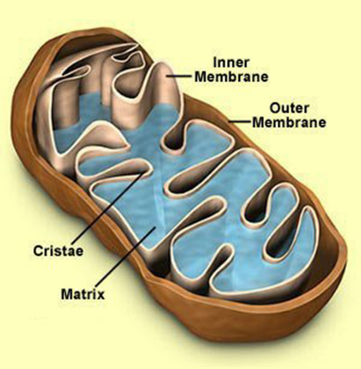
**Cellular Respiration Notes**

* Living things get most of the energy they need from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** make glucose using photosynthesis
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** get glucose from food they eat
* **Cellular Respiration**
  + The process that releases energy by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and other food molecules in the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + Cells require a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** for life processes but keep only a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**on hand.
  + Cells can regenerate ATP as needed by using the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** like glucose.
  + The energy stored in glucose by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is released by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and repackaged into the energy of ATP.
* **Aerobic Respiration:** **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + Occurs in the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the cell
  + Total of **\_\_\_\_\_\_\_\_\_\_\_\_\_** molecules produced
  + General formula for aerobic respiration:



* Three Stages
* The Main form of Energy produced = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Step 1: Glycolysis**

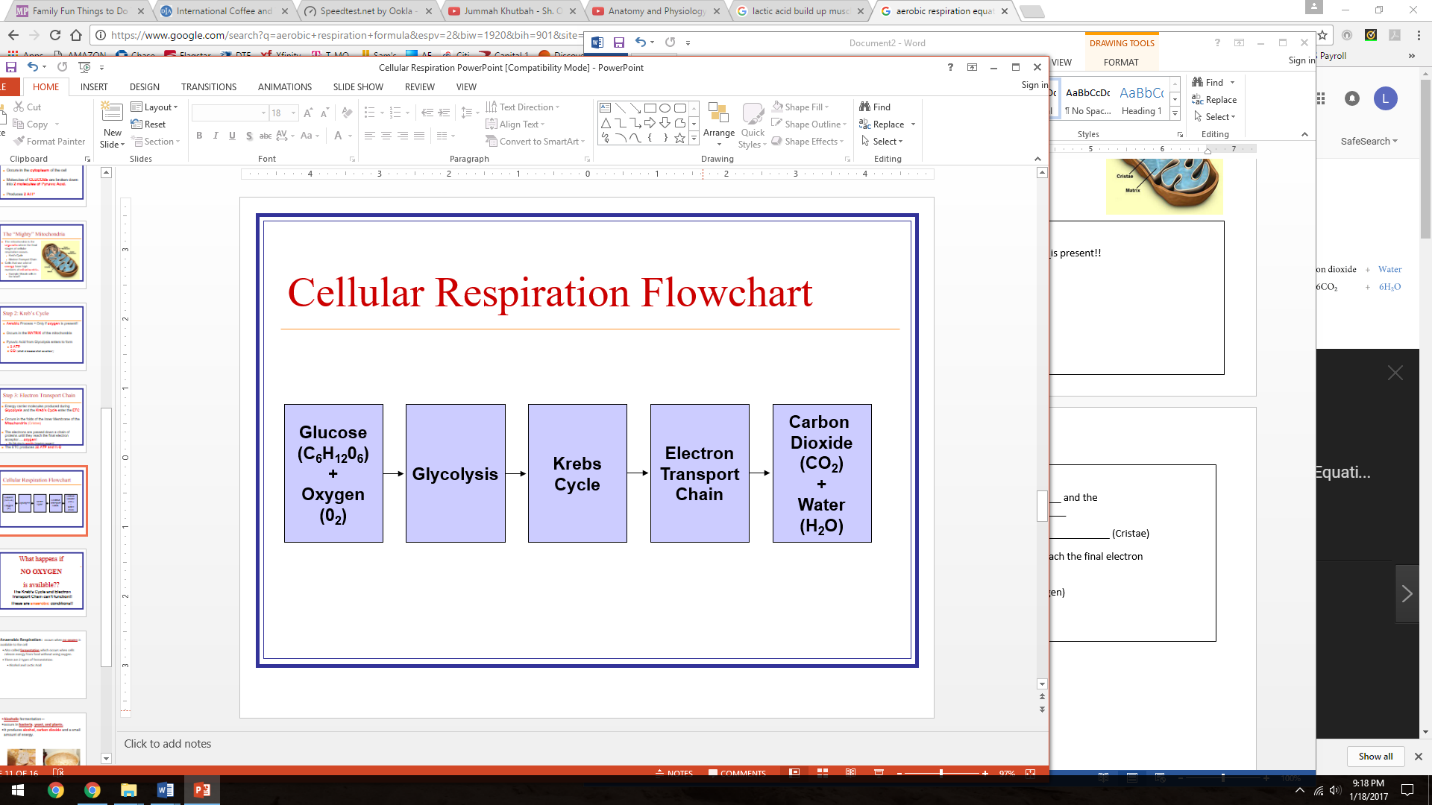
* Glyco = \_\_\_\_\_ lysis = Breakdown
* Occurs in the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the cell
* Molecules of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are broken down into **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Produces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The mitochondria is the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** where the final stages of cellular respiration occurs.
  + Kreb’s Cycle
  + Electron Transport Chain
* Cells that use a lot of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** have high numbers of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + Example: Muscle cells in the heart!!

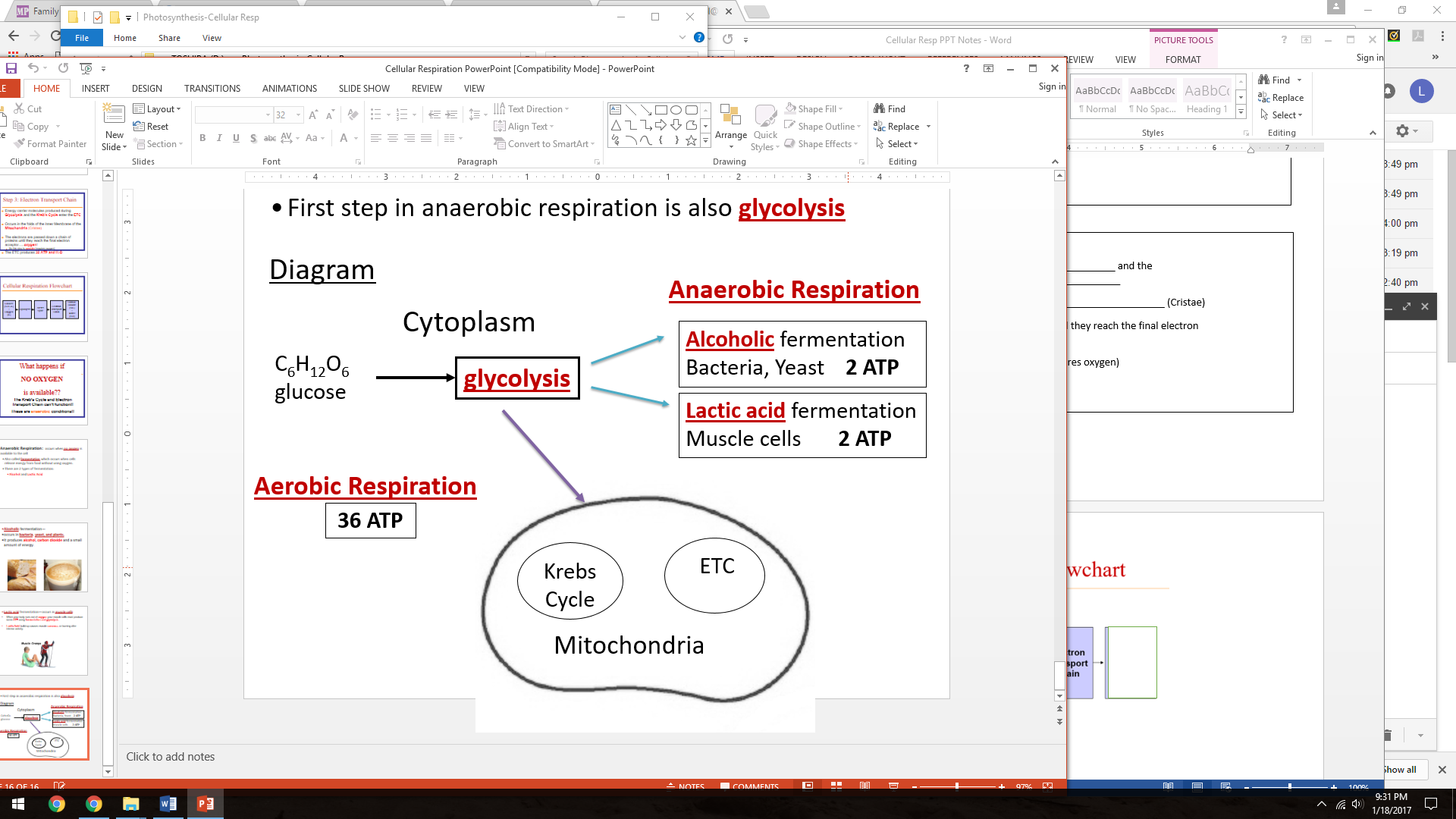
**Step 3: Electron Transport Chain**

* Energy carrier molecules produced during **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** enter the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Occurs in the folds of the Inner Membrane of the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (Cristae)
* The electrons are passed down a chain of proteins until they reach the final electron acceptor…..**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**!
  + So this step is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(requires oxygen)
* The ETC produces **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Step 2: Kreb’s Cycle**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Process = Only if ­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is present!!
* Occurs in the MATRIX of the mitochondria
* Pyruvic Acid from Glycolysis enters to form



* What if no oxygen is present?
  + **Anaerobic Respiration:** occurs when **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is available to the cell
  + Also called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** which occurs when cells release energy from food without using oxygen.
  + There are 2 types of fermentation:
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Lactic Acid Fermentation**

* **Lactic acid** fermentation—occurs in **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* When your body runs out of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** your muscle cells must produce some **\_\_\_\_\_\_\_\_\_\_\_\_** using **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **Lactic Acid** build-up causes muscle **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**or burning after intense activity.

**Alcohol Fermentation**

* **Alcoholic** fermentation—
* occurs in **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* It produces **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and a small amount of energy.