

## **Cellular Respiration**

#### Summary Reaction:

(enzymes)  $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + energy (ATP)$ 

# 2 Stages of Cellular Respiration

Stage 1: Glucose is converted to pyruvate, producing a small amount of ATP and NADH.

Stage 2: When oxygen is present, pyruvate and NADH are used to make a large amount of ATP.

# Stage One: Breakdown of Glucose

- The primary fuel for cell respiration is glucose.
- Glucose is broken down in the cytoplasm during a process called glycolysis.
- ♦ Glucose ( a 6-carbon molecule)  $\rightarrow$  2 pyruvate (a 3-carbon molecule)

### Stage Two: Production of ATP

 Happens in the mitochondrion
Pyruvate is converted to a 2-carbon molecule finally forming acetyl-CoA
Acetyl-CoA enters a series of enzyme assisted reactions called the Krebs Cycle.