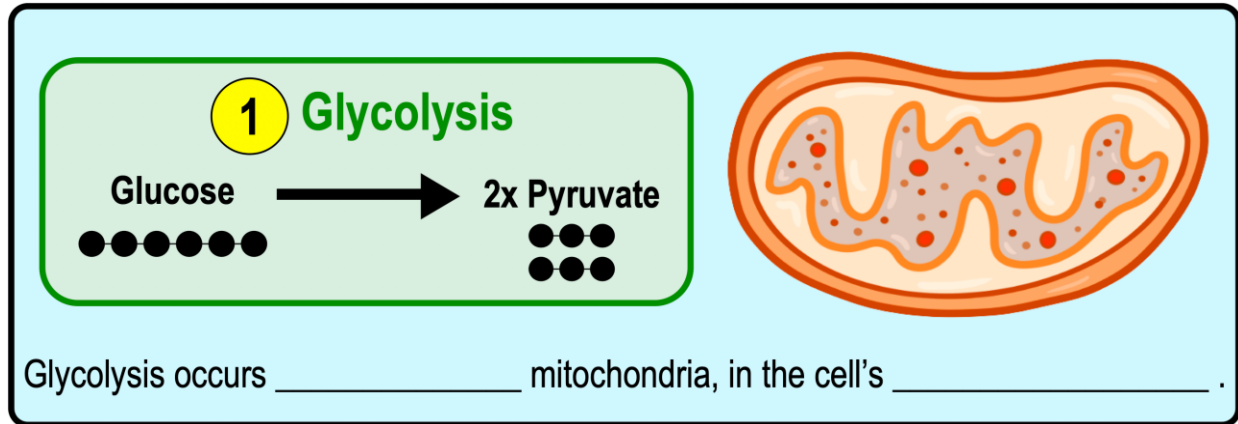


CONCEPT: GLYCOLYSIS

- **Glycolysis:** 1st step of cellular respiration that *breaks down* _____ into 2 _____ molecules.
 - “Glyco” = _____.
 - “Lysis” = to _____.
 - Glucose has _____ **carbon atoms**, all which end up being converted to **CO₂** in the 2nd & 3rd steps of respiration.
 - ONLY step that occurs *outside* mitochondria (in the cell’s _____) & does _____ require Oxygen.



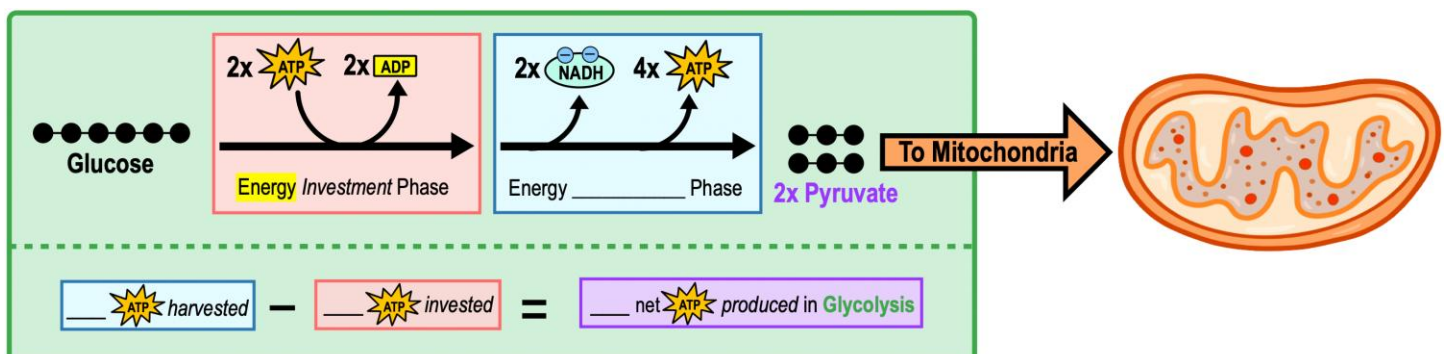
PRACTICE: Where does the first stage of aerobic cellular respiration take place within a cell?

- a) Mitochondrial matrix.
- b) Inner mitochondrial membrane.
- c) Intermembrane space.
- d) Cytoplasm.

Phases of Glycolysis

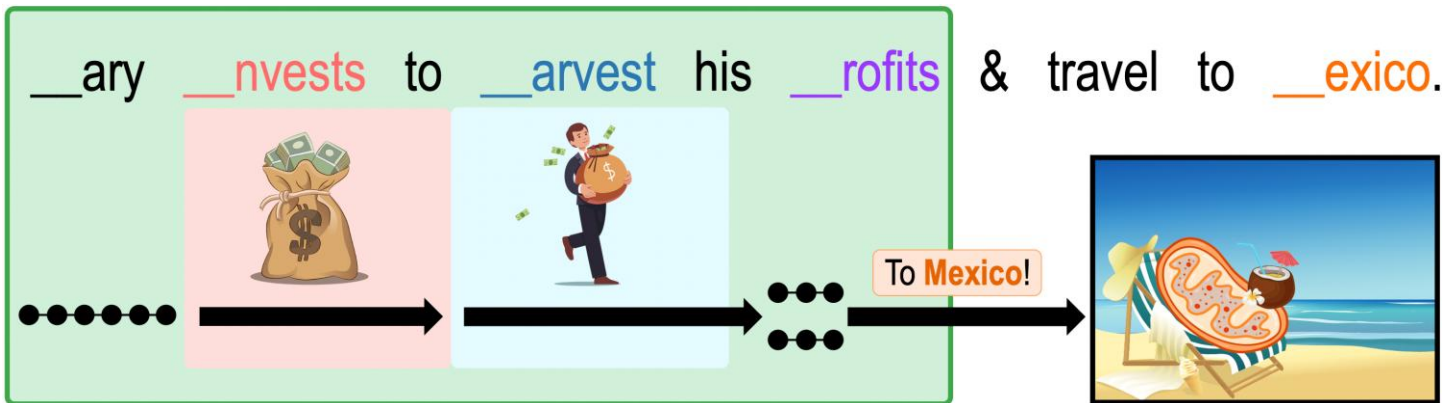
- Glycolysis consists of a series _____ reactions, which can be grouped into _____ phases:
 - 1) **Energy Investment Phase:** requires an _____ of energy by using _____ ATP molecules.
 - 2) **Energy Harvest Phase:** _____ energy by forming _____ NADH & _____ ATP molecules.
 - Net products from 1 single glucose molecule = _____ pyruvate, _____ NADH, & _____ ATP molecules.
 - 2 pyruvates transported to the _____ matrix for the next step of *cellular respiration*.

EXAMPLE: Phases of Glycolysis.



CONCEPT: GLYCOLYSIS

Remembering Phases of Glycolysis



EXAMPLE: There is an energy investment step needed to get glycolysis started, requiring the use of _____ ATPs.

- a) Two. b) Four. c) Three. d) One. E) Five.

PRACTICE: Starting with one molecule of glucose, glycolysis results in the net production of which of the following sets of energy-containing products?

- a) 2 NAD⁺, 2 pyruvate, and 2 ATP. c) 4 NADH, 2 pyruvate, and 4 ATP.
b) 2 NADH, 2 pyruvate, and 2 ATP. d) 6 CO₂, 2 pyruvate, and 2 ATP.

PRACTICE: Which of the following is a result of glycolysis?

- a) A net gain of four ATP per one glucose molecule.
b) Conversion of FAD to FADH₂.
c) Conversion of one glucose molecule to two pyruvate molecules.
d) Conversion of NADH to NAD⁺.