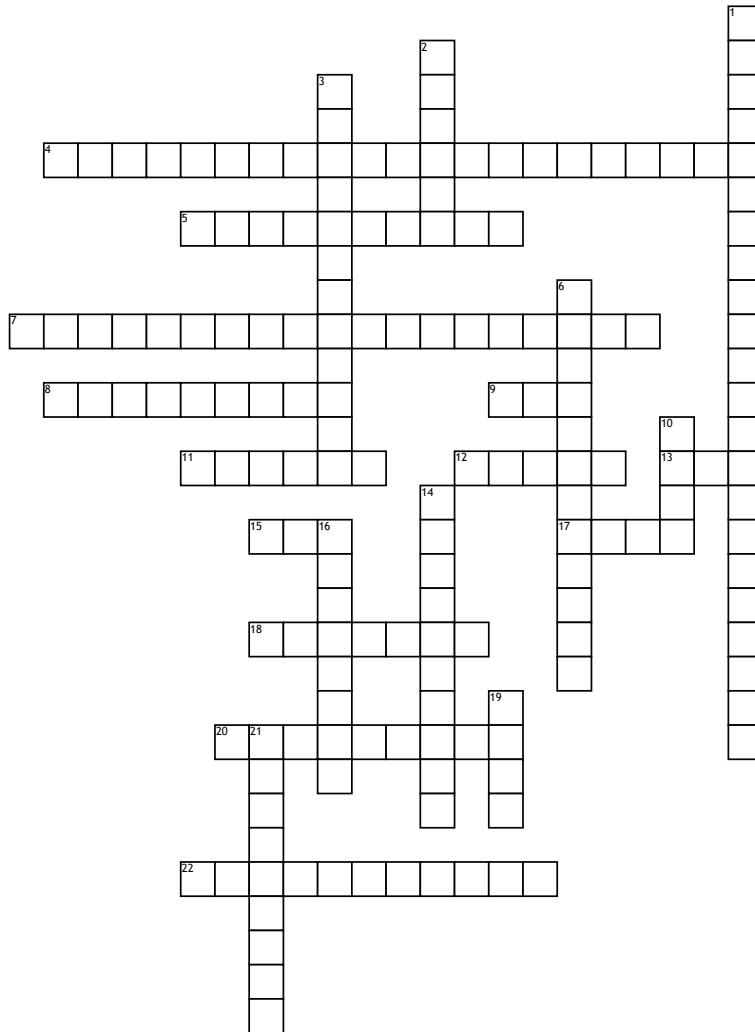


Name: _____

Date: _____

Cellular Respiration Major Players



Across

4. When there is more of a substance on one side of the cell than the other, allowing the substance to more easily flow to where it is needed is known as the _____.

5. A series of metabolic reactions that breaks down glucose into pyruvate and produces ATP.

7. The process through which ATP is produced from glucose oxidation via glycolysis, the Krebs cycle, and oxidative phosphorylation.

8. An oxidative decarboxylation reaction that converts the three-carbon pyruvate into a two-carbon _____ molecule.

9. The most critical nutrient to the human body.

11. A key component of the chemical reactions that keep the human body alive, including reactions that produce ATP.

12. _____ is a high-energy molecule needed for glycolysis.

13. Approximately 40 percent of energy yielded from catabolic reactions is directly transferred to this high-energy molecule that consist of an adenine, a ribose, and three phosphate groups.

15. Three letter product of the chemical bond between the second and third phosphate group of ATP are broken down when cells require energy to work.

17. A coenzyme that serves as an electron acceptor in a glycolysis reaction.

18. A monosaccharide of carbohydrates that easily broken down and used for cellular energy.

20. Starting molecule of the Krebs cycle

22. A protein pore complex that creates ATP.

Down

1. The _____ uses the NADH and FADH₂ produced by the Krebs cycle to generate ATP

2. Ion that is gained or lost in oxidation-reduction reactions to form ATP.

3. The Krebs cycle converts pyruvate through a cycle of reactions. In the process, ATP, oxygen and _____ are produced

6. Cellular structure that is a membranous, bean-shaped organelle that is the "energy transformer" of the cell.

10. A coenzyme used to produce FADH₂.

14. Process that is also called the citric acid cycle or the tricarboxylic acid cycle, converts pyruvate into CO₂ and high-energy FADH₂, NADH, and ATP molecules.

16. The last step in glycolysis produces the product _____. It is also used in the Krebs Cycle to produce ATP, oxygen and oxaloacetate.

19. Energy containing, electron carrying molecules that are a product of glycolysis.

21. The organelles and cytosol, taken together, compose the cell's _____.

Word Bank

ATP Synthase

Acetyl CoA

oxaloacetate

Krebs Cycle

Concentration gradient

H⁺ Ions

ATP

Oxygen

FADH₂

Cellular respiration

FAD⁺

Mitochondria

NADH

H₂O

NAD⁺

Glucose

Cytoplasm

Pyruvate

Coenzyme A

ADP

Glycolysis

Electron Transport Chain