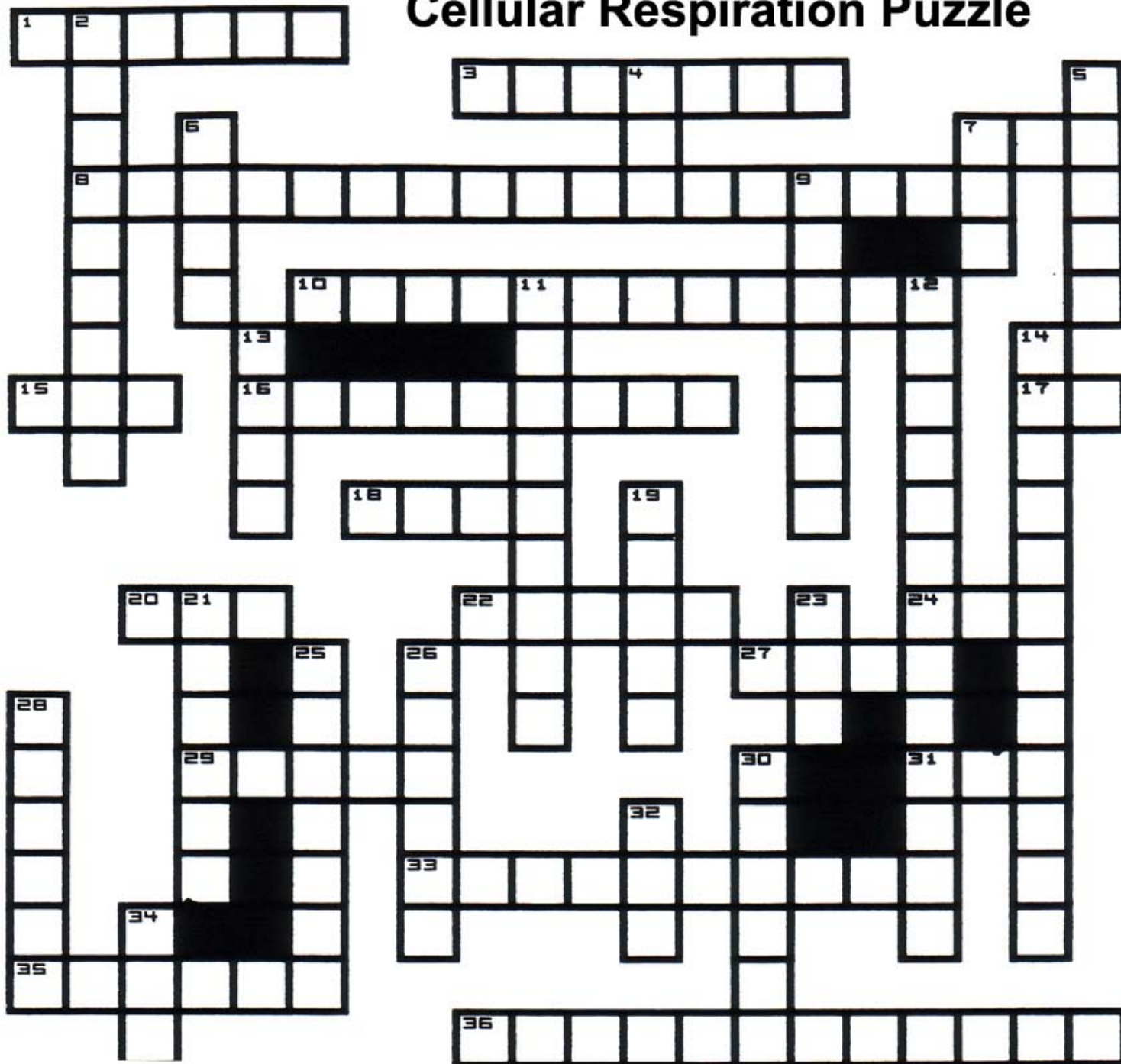


# Cellular Respiration Puzzle



ACETYL  
 ADP  
 AEROBIC  
 ANAEROBIC  
 ATP  
 ATPSYNTHETASE  
 CHEMIOSMOSIS  
 CITRIC  
 COA  
 CO2  
 CYTOPLASM  
 DEBT  
 ELECTRONTRANSPORT

ENERGY  
 ETC  
 FAD  
 FERMENTATION  
 FOOD  
 GLUCOSE  
 GLYCOLYSIS  
 H+  
 KREBS  
 LACTIC  
 MATRIX  
 MITOCHONDRIA

NADH  
 NAD  
 OXIDATION  
 OXYGEN  
 PUMP  
 PYRUVIC  
 SIX  
 SPACE  
 THREE  
 TWO  
 TWO  
 WATER

# Cellular Respiration Puzzle

## ACROSS CLUES

1. The location of the Krebs cycle inside the mitochondria.
3. The 6-C compound that is the main energy source for cellular respiration.
7. \_\_\_\_\_ converts to ATP by capturing energy and a phosphate.
8. The cytochromes on the mitochondrial inner membrane is called the \_\_\_\_\_ chain.
10. The "powerhouse" of the cell where ATP is made by chemiosmosis.
15. The number of CO<sub>2</sub> formed from the complete oxidation of one glucose.
16. The removal of H<sup>+</sup> ions or e<sup>-</sup> is called \_\_\_\_\_. Also the opposite of reduction.
17. The ion that is a single proton.
18. The proton \_\_\_\_\_ actively transports H<sup>+</sup> across the inner membrane creating a gradient.
20. A vitamin coenzyme (riboflavin) that is H-carrier in the Krebs cycle.
22. At the end of the electron transport chain  $2e^- + 2H^+ +$  oxygen unite to form \_\_\_\_\_.
24. The number of net ATP made during glycolysis.
27. Reduced NAD<sup>+</sup>.
29. Each NADH + H<sup>+</sup> yields \_\_\_\_\_ ATP being made during chemiosmosis.
31. Each FADH<sub>2</sub> results in \_\_\_\_\_ ATP being made during chemiosmosis.
33. Phase that converts a 6-C glucose to two 3-C pyruvic acids.
35. First compound of the Krebs cycle formed by combining acetylCoA and oxaloacetic acid is \_\_\_\_\_ acid.
36. \_\_\_\_\_ produces ATP anaerobically and results in the production of lactic acid or alcohol.

## DOWN CLUES

2. Type of cellular respiration that occurs in the cytoplasm.
4. Abbr. for the Coenzyme that joins with an acetyl group to carry cell respiration to Krebs cycle.
5. The intermembrane \_\_\_\_\_ in the mitochondria is where H<sup>+</sup> are pumped to dam up energy.
6. As lactic acid accumulates, a person develops an oxygen \_\_\_\_\_ that has to be repaid later.
7. The main objective of cellular respiration to produce \_\_\_\_\_.
9. A 3-C compound formed at the end of glycolysis.
11. The location of glycolysis and fermentation in the cell.
12. The enzyme at the end of the electron transport system that catalyzes the production of ATP.
13. The \_\_\_\_\_ we take in daily provides the energy for oxidative phosphorylation.
14. The chemical formation of ATP coupled to a diffusion process of H<sup>+</sup> similar to osmosis is \_\_\_\_\_.
19. The phase of cell respiration where the most NAD<sup>+</sup> and FAD<sup>+</sup> are reduced to FADH<sub>2</sub> and NADH + H<sup>+</sup>.
21. The 2-C compound formed between glycolysis and the Krebs cycle.
23. A vitamin (niacin) coenzyme that is a H-carrier.
25. The type of cellular respiration that requires oxygen and produces that greatest amount of ATP's.
26. As chemical bonds are broken \_\_\_\_\_ is released in various forms.
28. Muscle cells deprived of sufficient oxygen produce \_\_\_\_\_ acid and regenerate NAD<sup>+</sup>.
30. The final e<sup>-</sup>/H<sup>+</sup> acceptor at the end of the electron transport chain.
32. The gas released as C-O-O complexes are broken off during the chemical reactions.
34. Abbr. for electron transport chain.