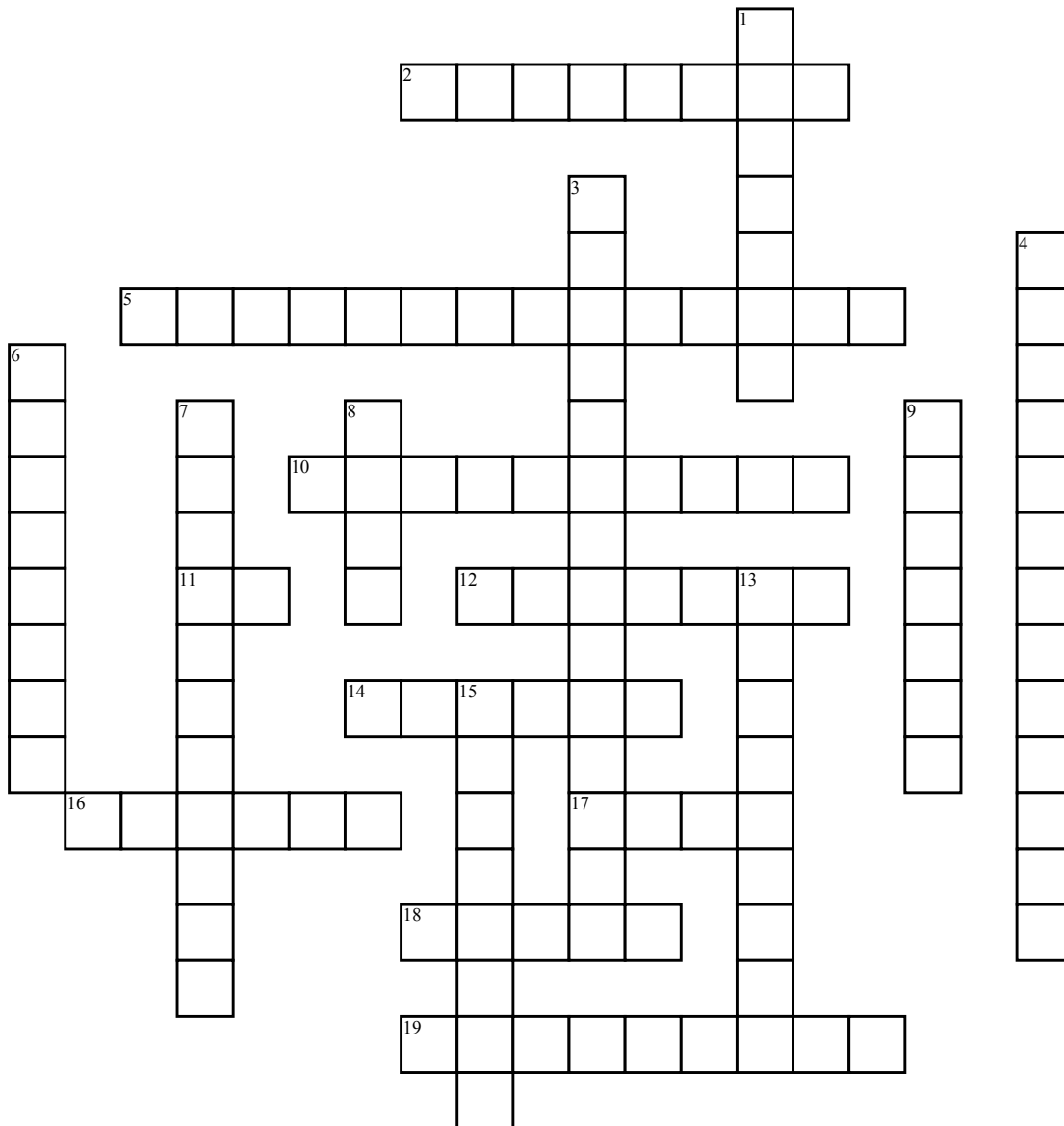


Name: _____

Metabolism and Thermodynamics



Across

2. pathway that consumes energy to build complex molecules from simpler ones
5. study of energy transformations
10. totality of an organism's chemical reactions
11. Does the evolution of complex organisms violate the second law of thermodynamics?
12. measure of molecular disorder, or randomness
14. Law of thermodynamics that states every energy transfer or transformation increases the entropy of the universe

16. capacity to cause change

17. system that energy and matter can be transferred between the system and its surroundings
18. Law of thermodynamics that states energy can be transferred and transformed, but cannot be created or destroyed
19. pathway that releases energy by breaking down complex molecules into simpler compounds

Down

1. energy associated with motion
3. process that requires energy input, decreases the entropy of the universe

4. study of how energy flows through living organisms

6. system that is unable to exchange energy or matter with its surroundings
7. process that occurs without energy input, increases entropy of the universe
8. thermal energy in transfer between objects
9. kinetic energy associated with random movement of atoms or molecules
13. energy that matter possesses because of its location or structure
15. energy available for release in a chemical reaction