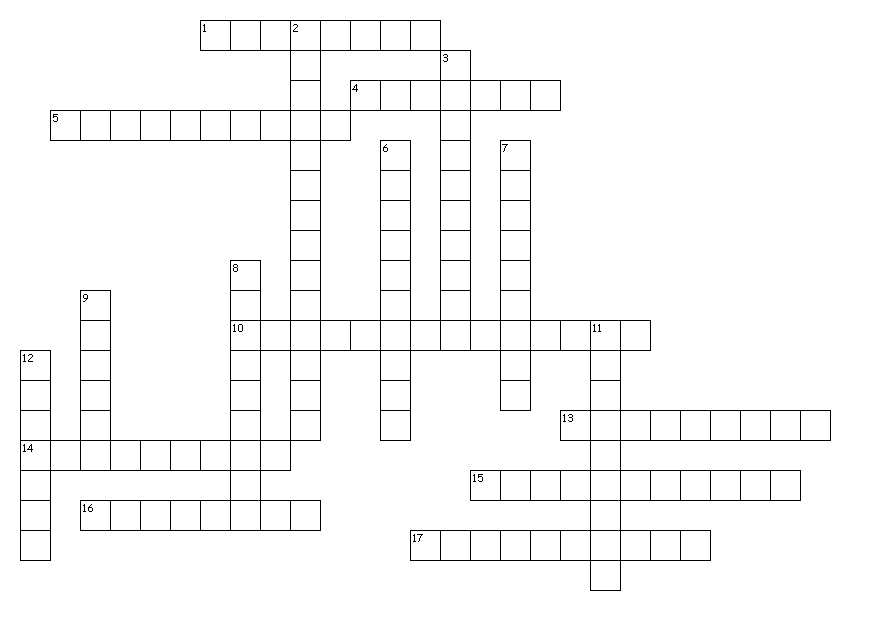
Chapter 8 Brain Freshener ☺

Name:

**Across**

1. organic molecule, helper for catalytic activity

4. is increased as spontaneous processes occur in the universe

5. totality of an organism's chemical reactions

10. study of energy transformations in a collection of matter

13. produce energy by breakdown pathways

14. energy outward

15. heat energy absorbed

16. consume energy to build molecules

17. heat energy is given off

**Down**

2. a process that cannot occur on its own

3. portion of a system's energy that can be used to do work

6. energy inward

7. a biological catalyst acts on

8. energy possessed by a motionless object

9. macromolecule that acts as a biological catalyst

11. nonprotein inorganic helper for catalytic activity

12. energy associated with motion of atoms, directly proportional to thermal energy

Answers:

anabolic consume energy to build molecules

catabolic produce energy by breakdown pathways

metabolism totality of an organism's chemical reactions

kinetic energy associated with motion of atoms, directly proportional to thermal energy

potential energy possessed by a motionless object

thermodynamics study of energy transformations in a collection of matter

nonspontaneous a process that cannot occur on its own

entropy is increased as spontaneous processes occur in the universe

freeenergy portion of a system's energy that can be used to do work

exergonic energy outward

endergonic energy inward

endothermic heat energy absorbed

exothermic heat energy is given off

Enzyme macromolecule that acts as a biological catalyst

Substrate a biological catalyst acts on

cofactors nonprotein inorganic helper for catalytic activity

coenzyme organic molecule, helper for catalytic activity