



Name \_\_\_\_\_

# Ecosystems and the Biosphere: Energy Flow and the Recycling of Matter

A crossword puzzle grid with 42 numbered starting points for words. The grid consists of black and white squares. The numbers are placed in the top-left corner of the starting square for each word.

- 1: 1 square (vertical)
- 2: 10 squares (horizontal)
- 3: 2 squares (vertical)
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- 40: 10 squares (horizontal)
- 41: 10 squares (horizontal)
- 42: 10 squares (horizontal)



# Clues



- Across
- 2 The first organism in every food chain.
  - 6 The series of steps in which organisms transfer energy from one organism to another by eating and by being eaten. (2 Words)
  - 7 The steps in a food chain. (2 Words)
  - 10 Animals that obtain their energy by eating other animals.
  - 11 This process returns the chemicals locked in the bodies of dead plants and animals to the ecosystem so they may be used again.
  - 13 The amount of organic material in an ecosystem.
  - 15 Water leaves the atmosphere and returns to the Earth in this process.
  - 17 The amount of energy (percentage) passed from one trophic level to the next. (2 Words)
  - 19 Animals that obtain their energy by consuming only plants.
  - 21 Term that describes an organism that cannot make its own food.
  - 23 This process creates organic compounds using the energy from inorganic chemical reactions.
  - 31 The movement of water through various reservoirs. (2 Words)
  - 32 All of the living organisms in an area as well as the abiotic factors with which they interact.
  - 34 The burning of \_\_\_\_\_ returns carbon dioxide to the atmosphere. (2 Words)
  - 35 The process in which elements and chemical compounds are passed from one organism to another and from one part of the biosphere to another. (2 Words)
  - 36 The nitrogen cycle is made possible by soil dwelling \_\_\_\_\_.
  - 37 The incorporation of nitrogen compounds into plant and animal tissues.
  - 38 Another name for a heterotroph.
  - 39 The conversion of nitrates to nitrogen gas.
  - 40 This process occurs in the clouds when water vapor is converted into a liquid.
  - 41 The production of ammonia by bacteria during the decay of nitrogen containing organic matter.
  - 42 The amount of light energy converted to chemical energy by photosynthesis per unit time. (3 Words)

- Down
- 1 Term that describes an organism that can make its own food.
  - 2 This element is required for the building of molecules of ATP and DNA.
  - 3 An energy-releasing process in cells that returns carbon dioxide to the atmosphere.
  - 4 Many food chains woven together. (2 Words)
  - 5 Using the energy from the sun to convert carbon dioxide and water into molecules of glucose.
  - 8 This ecosystem is responsible for the greatest amount of net productivity. (2 Words)
  - 9 The production of nitrates from ammonia.
  - 12 Animals that obtain their energy by eating a mixture of plants and animals.
  - 14 This key element is needed for the building of proteins and nucleic acids.
  - 16 Converting the energy stored in molecules of glucose into a form of energy the cell can use. (2 Words)
  - 18 In this process, the sun's energy is trapped in the atmosphere, warming the Earth. (2 Words)
  - 20 The second trophic level is occupied by these organisms. (2 Words)
  - 22 The amount of chemical energy (glucose) available to the consumers in an ecosystem. (3 Words)
  - 24 The process of converting nitrogen gas into ammonia and nitrates. (2 Words)
  - 25 This process removes carbon dioxide from the atmosphere.
  - 26 This term describes an organism that feeds on plant and animal remains, animal wastes, and other dead matter.
  - 27 What is the trophic level of a snake that feeds upon a mouse? (2 Words)
  - 28 The loss of water from the leaves of plants.
  - 29 The main autotrophs in aquatic ecosystems.
  - 30 The graphical representation of the amount of energy or matter in an ecosystem. (2 Words)
  - 33 In this step of the water cycle, water molecules are added to the atmosphere in the form of water vapor.