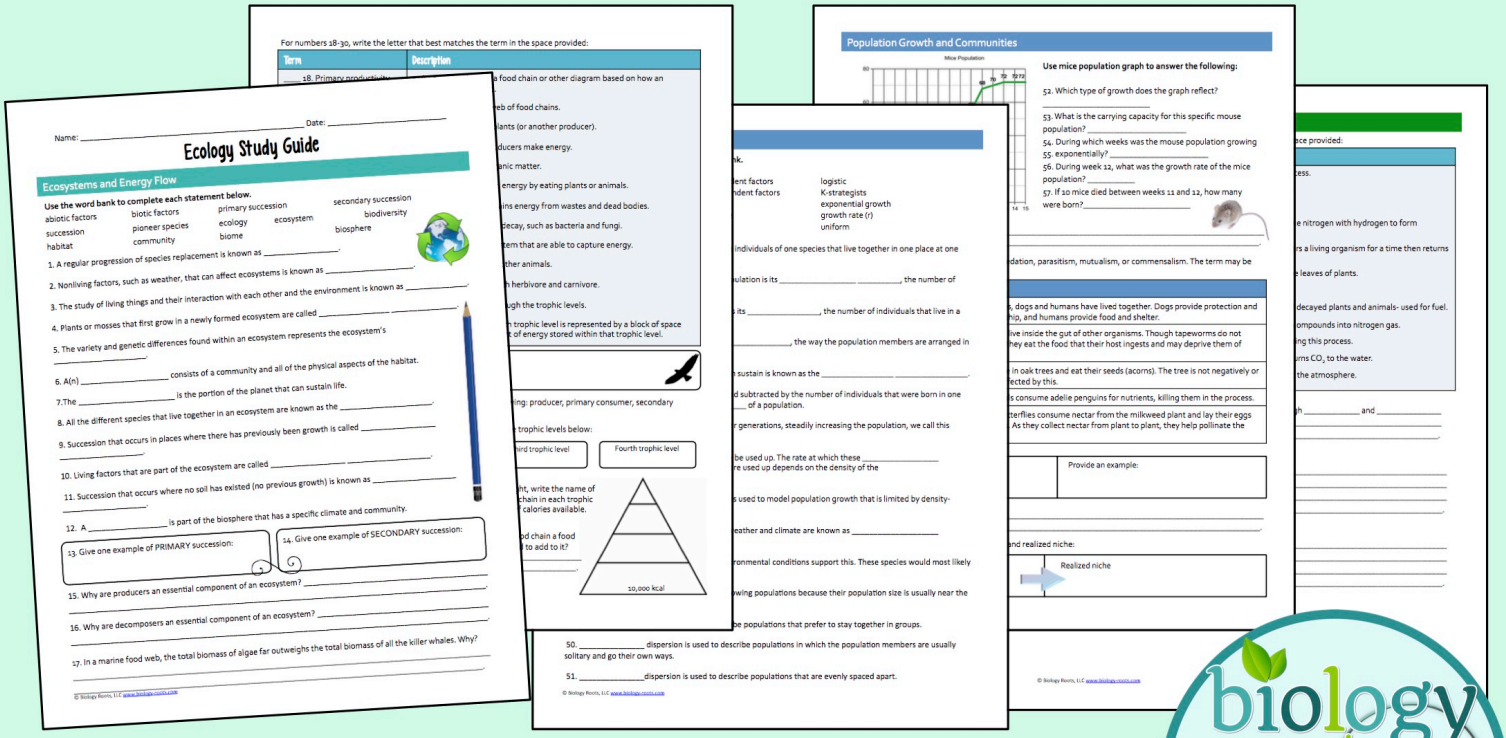
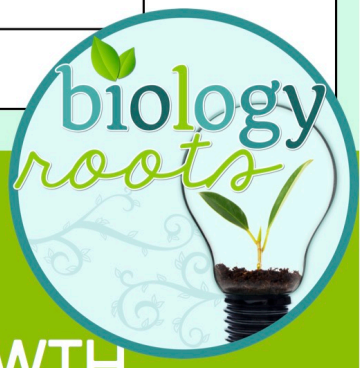
ecology

Study Guide



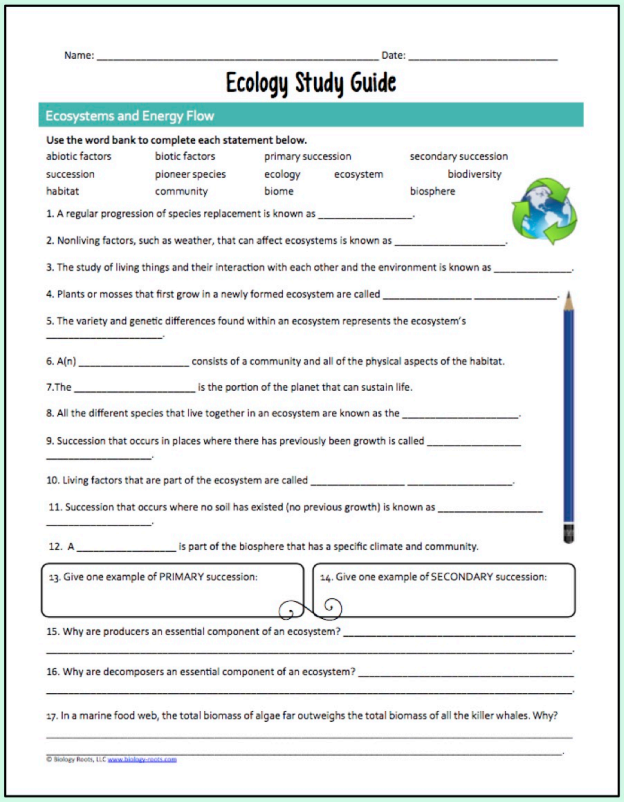


EDITABLE STUDY GUIDE- ECOSYSTEMS ENERGY FLOW, BIOGEOCHEMICAL CYCLES, SYMBIOSIS, POPULATION GROWTH

Completely editable.

Sectioned by category: Ecosystems and Energy Flow, Population Growth and Communities, and Biogeochemical Cycles. Use some or all to help your students organize information before an exam.

EDITABLE STUDY GUIDE- ECOSYSTEMS AND ENERGY FLOW



Name: _____ Date: _____

Ecology Study Guide

Ecosystems and Energy Flow

Use the word bank to complete each statement below.

abiotic factors	biotic factors	primary succession		secondary succession
succession	pioneer species	ecology	ecosystem	biodiversity
habitat	community	biome		biosphere

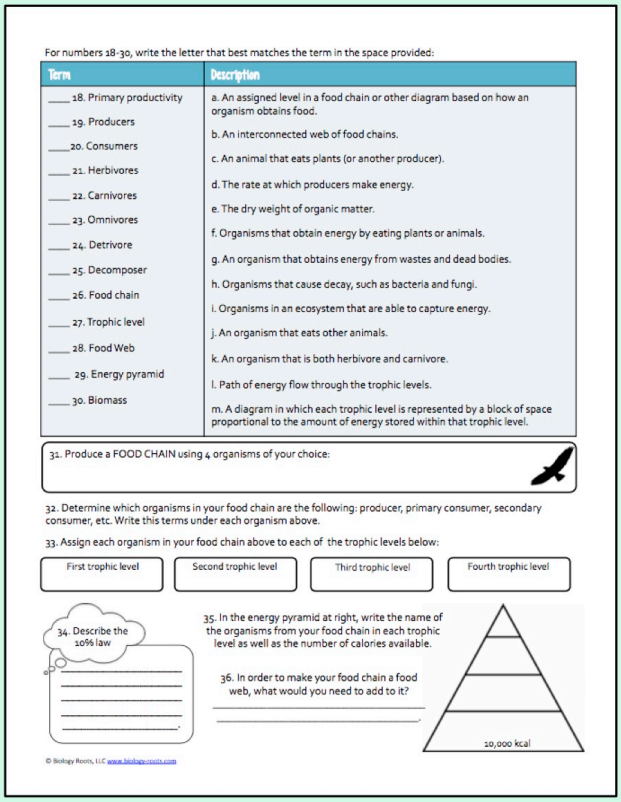
1. A regular progression of species replacement is known as _____.
2. Nonliving factors, such as weather, that can affect ecosystems is known as _____.
3. The study of living things and their interaction with each other and the environment is known as _____.
4. Plants or mosses that first grow in a newly formed ecosystem are called _____ _____.
5. The variety and genetic differences found within an ecosystem represents the ecosystem's _____.
6. A(n) _____ consists of a community and all of the physical aspects of the habitat.
7. The _____ is the portion of the planet that can sustain life.
8. All the different species that live together in an ecosystem are known as the _____.
9. Succession that occurs in places where there has previously been growth is called _____ _____.
10. Living factors that are part of the ecosystem are called _____ _____.
11. Succession that occurs where no soil has existed (no previous growth) is known as _____ _____.
12. A _____ is part of the biosphere that has a specific climate and community.

13. Give one example of PRIMARY succession:

14. Give one example of SECONDARY succession:

15. Why are producers an essential component of an ecosystem? _____ _____.
16. Why are decomposers an essential component of an ecosystem? _____ _____.
17. In a marine food web, the total biomass of algae far outweighs the total biomass of all the killer whales. Why? _____ _____.

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For numbers 18-30, write the letter that best matches the term in the space provided:

Term	Description
____ 18. Primary productivity	a. An assigned level in a food chain or other diagram based on how an organism obtains food.
____ 19. Producers	b. An interconnected web of food chains.
____ 20. Consumers	c. An animal that eats plants (or another producer).
____ 21. Herbivores	d. The rate at which producers make energy.
____ 22. Carnivores	e. The dry weight of organic matter.
____ 23. Omnivores	f. Organisms that obtain energy by eating plants or animals.
____ 24. Detrivore	g. An organism that obtains energy from wastes and dead bodies.
____ 25. Decomposer	h. Organisms that cause decay, such as bacteria and fungi.
____ 26. Food chain	i. Organisms in an ecosystem that are able to capture energy.
____ 27. Trophic level	j. An organism that eats other animals.
____ 28. Food Web	k. An organism that is both herbivore and carnivore.
____ 29. Energy pyramid	l. Path of energy flow through the trophic levels.
____ 30. Biomass	m. A diagram in which each trophic level is represented by a block of space proportional to the amount of energy stored within that trophic level.

31. Produce a FOOD CHAIN using 4 organisms of your choice:

32. Determine which organisms in your food chain are the following: producer, primary consumer, secondary consumer, etc. Write this terms under each organism above.

33. Assign each organism in your food chain above to each of the trophic levels below:

First trophic level	Second trophic level	Third trophic level	Fourth trophic level

34. Describe the 10% law

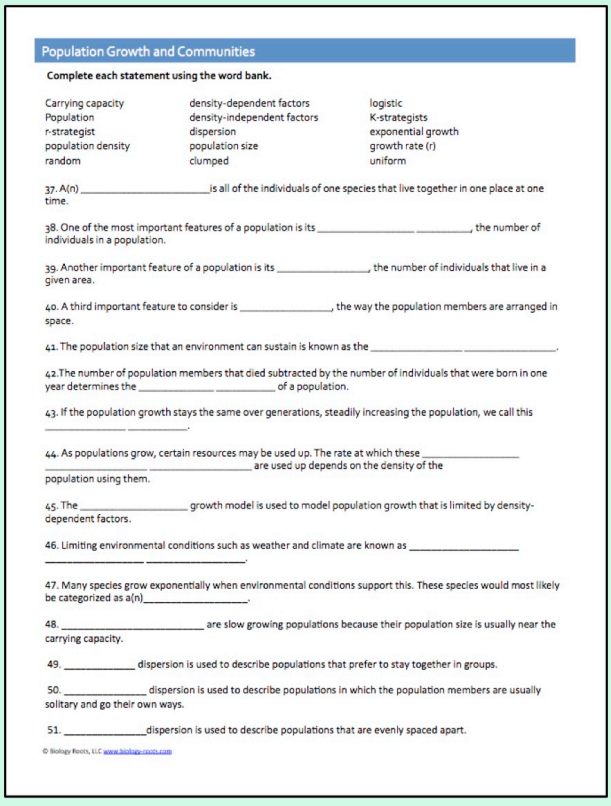
35. In the energy pyramid at right, write the name of the organisms from your food chain in each trophic level as well as the number of calories available.

36. In order to make your food chain a food web, what would you need to add to it?

10,000 kcal

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EDITABLE STUDY GUIDE- COMMUNITIES AND POPULATION GROWTH



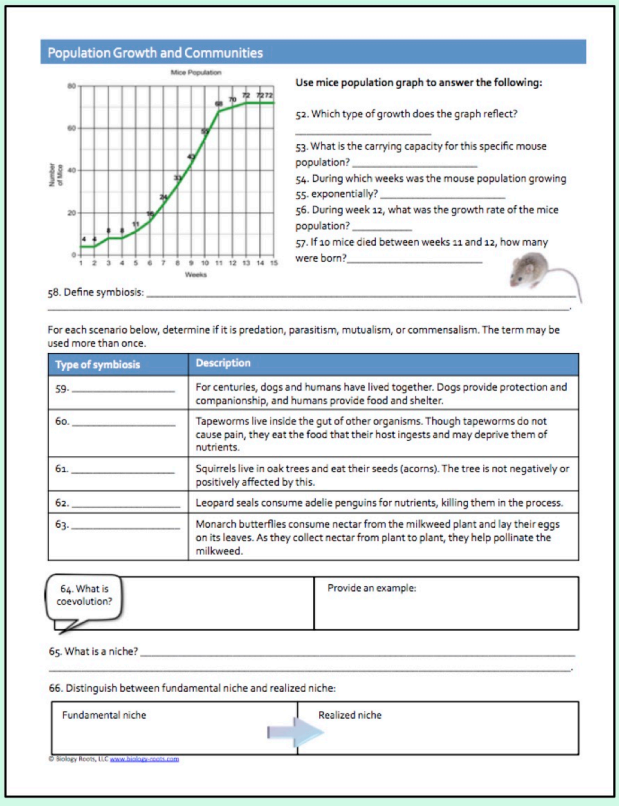
Population Growth and Communities

Complete each statement using the word bank.

Carrying capacity	density-dependent factors	logistic
Population	density-independent factors	K-strategists
r-strategist	dispersion	exponential growth
population density	population size	growth rate (r)
random	clumped	uniform

37. A(n) _____ is all of the individuals of one species that live together in one place at one time.
38. One of the most important features of a population is its _____ _____, the number of individuals in a population.
39. Another important feature of a population is its _____, the number of individuals that live in a given area.
40. A third important feature to consider is _____, the way the population members are arranged in space.
41. The population size that an environment can sustain is known as the _____ _____.
42. The number of population members that died subtracted by the number of individuals that were born in one year determines the _____ _____ of a population.
43. If the population growth stays the same over generations, steadily increasing the population, we call this _____ _____.
44. As populations grow, certain resources may be used up. The rate at which these _____ _____ are used up depends on the density of the population using them.
45. The _____ growth model is used to model population growth that is limited by density-dependent factors.
46. Limiting environmental conditions such as weather and climate are known as _____ _____.
47. Many species grow exponentially when environmental conditions support this. These species would most likely be categorized as a(n)_____.
48. _____ are slow growing populations because their population size is usually near the carrying capacity.
49. _____ dispersion is used to describe populations that prefer to stay together in groups.
50. _____ dispersion is used to describe populations in which the population members are usually solitary and go their own ways.
51. _____dispersion is used to describe populations that are evenly spaced apart.

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Population Growth and Communities

Use mice population graph to answer the following:

52. Which type of growth does the graph reflect? _____
53. What is the carrying capacity for this specific mouse population? _____
54. During which weeks was the mouse population growing exponentially? _____
55. _____
56. During week 12, what was the growth rate of the mice population? _____
57. If 10 mice died between weeks 11 and 12, how many were born? _____

58. Define symbiosis: _____ _____.

For each scenario below, determine if it is predation, parasitism, mutualism, or commensalism. The term may be used more than once.

Type of symbiosis	Description
59. _____	For centuries, dogs and humans have lived together. Dogs provide protection and companionship, and humans provide food and shelter.
60. _____	Tapeworms live inside the gut of other organisms. Though tapeworms do not cause pain, they eat the food that their host ingests and may deprive them of nutrients.
61. _____	Squirrels live in oak trees and eat their seeds (acorns). The tree is not negatively or positively affected by this.
62. _____	Leopard seals consume adelie penguins for nutrients, killing them in the process.
63. _____	Monarch butterflies consume nectar from the milkweed plant and lay their eggs on its leaves. As they collect nectar from plant to plant, they help pollinate the milkweed.

64. What is coevolution?	Provide an example:

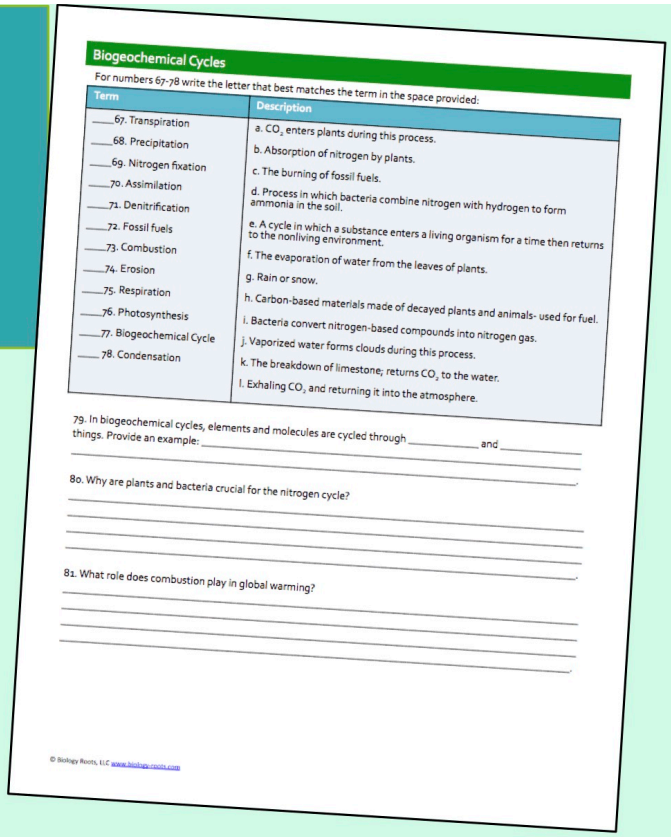
65. What is a niche? _____ _____.

66. Distinguish between fundamental niche and realized niche:

Fundamental niche	Realized niche

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EDITABLE STUDY GUIDE- BIOGEOCHEMICAL CYCLES



Biogeochemical Cycles

For numbers 67-78 write the letter that best matches the term in the space provided:

Term	Description
____67. Transpiration	a. CO_2 enters plants during this process.
____68. Precipitation	b. Absorption of nitrogen by plants.
____69. Nitrogen fixation	c. The burning of fossil fuels.
____70. Assimilation	d. Process in which bacteria combine nitrogen with hydrogen to form ammonia in the soil.
____71. Denitrification	e. A cycle in which a substance enters a living organism for a time then returns to the nonliving environment.
____72. Fossil fuels	f. The evaporation of water from the leaves of plants.
____73. Combustion	g. Rain or snow.
____74. Erosion	h. Carbon-based materials made of decayed plants and animals- used for fuel.
____75. Respiration	i. Bacteria convert nitrogen-based compounds into nitrogen gas.
____76. Photosynthesis	j. Vaporized water forms clouds during this process.
____77. Biogeochemical Cycle	k. The breakdown of limestone; returns CO_2 to the water.
____78. Condensation	l. Exhaling CO_2 and returning it into the atmosphere.

79. In biogeochemical cycles, elements and molecules are cycled through _____ and _____ things. Provide an example: _____.

80. Why are plants and bacteria crucial for the nitrogen cycle?

81. What role does combustion play in global warming?

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81 questions total that include fill-in, matching, short answer, and labeling. Easily adaptable so you can give to the students in chunks based on their level.

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