

Name: Answer Key

Ecosystems of Cape Cod

Answer the questions, using the chart to help you brainstorm the answers. When you are finished, compare your answers with another group.

1. What is an ecosystem?

An ecosystem includes all of the organisms (biotic factors) as well as the climate, soil, water, rocks, and other nonliving things (abiotic factors) in a given area. They can vary in size.

An ecosystem is a complex web of connected biotic and abiotic factors.

2. How do you classify ecosystems? What features must an ecosystem have?

Based on the factors listed above, often plants and soil are major descriptors.

An ecosystem must have both abiotic and biotic factors; it must have producers and consumers; it must have a water source, and almost always a light source.

3. How many different ecosystems exist on Cape Cod?

Ecosystem	Features
Woodland (forest)	Deciduous and evergreen trees, lichens, mosses, ferns; deep organic soil and bedrock; light changes seasonally (leaf cover)
Upland edges	Reeds, tall grasses, shrubs, sedges; softer soil; lots of light
Meadow	Grasses, bushes, and shrubs, wildflowers; lots of light
Salt marsh	Grasses and small plants; peat soil; lots of light
Sand dunes	Poison ivy, beach plums, beach roses, lichens; dry, lots of light
Mudflats	Eel grass, seaweeds, algae; tidal water cover; lots of light
Tidal pools	Seaweeds and algae;
Open ocean	Seaweeds and algae;
Ponds/lakes	Algae, grasses
Rivers/streams	Algae, grasses

For one of the ecosystems you described on the previous page, use field guides or other reputable resources to research and describe what types of abiotic and biotic factors you would expect to find there.

Abiotic Factors	Biotic Factors	Other Notes
Climate, wind, light exposure, soil conditions, water (tides, temperature, salinity)	Plants, insects, birds, animals, fish...	Any interesting observations about these ecosystems?

4. What would make an organism well-suited to this environment?

Students should discuss adaptations to the specific environment and consider the following: food sources, predation, camouflage, reproduction, etc.

5. Do humans live here? How might we change the ecosystem?

Humans often reduce biodiversity, which can be detrimental to an ecosystem. The more species in an ecosystem, the more efficient and stable that ecosystem will be.

Though humans do not live in each of these ecosystems, we strongly affect all of them with pollution, overharvesting, and development among other things.

Consider that humans, over time, have had positive impacts in conservation, etc.

After brainstorming, students should check their work with another group, and discuss differing answers.

As a class, review the different ecosystems of Cape Cod. How many did you come up with?

Break the class into pairs or small groups, assigning each one of the ecosystems. Students should design a poster or **brief** presentation outlining the most important biotic and abiotic factors of the ecosystem. This assignment lends itself well to a large poster with labeled illustrations, or a **short** presentation or pictures on the computer.