

1. An ecosystem is a community of living and non-living things that interact and work together.
2. Biodiversity is a measure of the numbers of different types of organisms in an area.
3. A sustainable ecosystem is an environment where populations of plants, animals, and other organisms are able to survive, interact, and reproduce indefinitely, or where levels of biodiversity are maintained.
4. Biomes contain ecosystems, because biomes are large regions made up of similar ecosystems.
5. Ecology is the study of how systems of organisms interact with each other and their environment.
6. Biotic components are living things, such as plants, animals, fungi, and bacteria. Abiotic components are non-living things that are part of the ecosystem. These include physical elements, such as rocks, air, and water, and measurable quantities, such as temperature, hours of daylight, and salt concentration in water.
7. The water in marine biomes has a high salt concentration, and the water in freshwater biomes has a very low salt concentration. Many students will probably say that freshwater biomes do not contain any salt, which is a common misconception.
8. A population is a group of members of the same species that live in the same area.
9. The lithosphere, atmosphere, and hydrosphere are three components that support the biosphere.
10. **(a)** water, temperature, rocks, air, daylight, salt concentration, levels of oxygen or carbon dioxide, soil fertilizer levels, space, wind, or natural disturbances.
(b) trees, flowers, weeds, pests, insects, bacteria, pets, squirrels, birds, spiders, and humans.
11. amount of precipitation, forest fires, seasonal amounts of daylight, temperature fluctuations, levels of specific gases in the atmosphere, and pollution in soil or air.
12. Southern Ontario has deciduous forests of maple and oak trees. As you move further north, the vegetation would change to boreal forests that have pine and fir trees. Travelling even further north to Hudson Bay, the trees would disappear entirely. As the vegetation turned to tundra, only small shrubs, grasses, mosses, and lichens would grow.
13. A stream contains water and biotic and abiotic elements that interact as a unit. So it is an aquatic ecosystem. If the stream passes through a forest, and plants and animals that live in the forest interact with the stream, it is also part of the forest ecosystem.
14. A spaceship is a self-contained environment of finite space that must hold all the components necessary for survival. Abiotic and biotic factors must be regulated within certain levels to support life. The same applies to Earth.
15. **(a)** precipitation, pollutants, changes in salt level of the water, temperatures, and sunlight.
(b) turtles, floating grasses, bacteria, small insects, birds, amphibians, and small mammals.