

Grade 8 Natural Science Worksheet

Ecosystems

Part One: How an ecosystem is organised

Read the information box and then answer the questions.

An ecosystem is a complex interaction of living organisms and non-living matter. This diagram explains how an ecosystem is organised. **Organisms** which belong to a single species and which live in one particular area are called **populations**. In this example, the sunflower is the organism. Many sunflowers growing in a field is called a population of sunflowers. If you take many different populations, such as the population of sunflowers, the population of ducks and the population of a certain species of tree, all living in one area, you have a **community**. Many different communities, together with the non-living, or abiotic factors, in one area, is called an **ecosystem**. In this example, the sunflowers, the ducks, the trees and the grass, together with the river, the clouds, the sun, the slope of the land – these all make up the ecosystem. Many different ecosystems form **biomes** and all the biomes on the planet make up the **biosphere** – the part of the planet that sustains life.

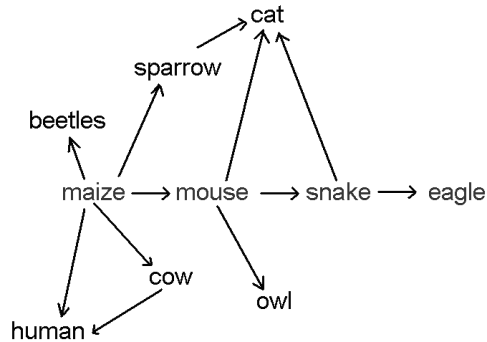
Read these statements and decide which are TRUE and which are FALSE. If a statement is FALSE, correct it to make it TRUE.

1. A herd of zebra living on a game farm is a population.
2. An ecosystem is made up of living organisms.
3. Ecosystems can differ in size.
4. The cats and the dogs living in your suburb form a population.
5. Temperature is an abiotic factor.
6. When we talk about a community, it is incorrect to say that soil and acid rain are part of the community.
7. The oceans are not part of the biosphere.
8. A forest is an example of an ecosystem.
9. A beach and the tidal zone is an ecosystem.
10. Populations interact with other in an ecosystem.

[13 marks]

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Part Two: A food web



1. This is an example of a food web. How does it differ from a food chain?
2. What inter-relationships does this food web show that a food chain does not?
3. What would happen if all the snakes were killed in this ecosystem?
4. What happens to this ecosystem when the farmer harvests his crops?
5. Which animals are directly reliant on the mouse for food?
6. Which animals are indirectly reliant on the mouse for food?

[9 marks]

Part Three: What is meant by “ecotourism”

Find out what is meant by “ecotourism”. Write a paragraph explaining this important concept.

[8 marks]

[Total: 30 marks]

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Suggested Solutions

Question number	Possible marks	Solution
1	13	<ol style="list-style-type: none"> 1. True ✓ 2. False ✓ – An ecosystem is made up of living organisms <i>and non-living factors in an area.</i> ✓ 3. True ✓ 4. False ✓ – The cats and the dogs living in your suburb form a <i>community (cats and dogs belong to different species therefore cannot form a single population).</i> ✓ 5. True ✓ 6. True ✓ 7. False ✓ – The oceans <i>are</i> part of the biosphere – <i>the atmosphere, lithosphere (solid ground) and the oceans, rivers and lakes etc (hydrosphere) are all parts of the biosphere.</i> ✓ 8. True ✓ 9. True ✓ 10. True ✓
2	9	<ol style="list-style-type: none"> 1. A food chain only shows a linear or two dimensional representation of feeding relationships in an ecosystem. ✓ A food web shows multi-dimensional relationships in an ecosystem. It is a far more realistic representation of the feeding relationships in an ecosystem. ✓ 2. All the organisms that are not in a single food chain, are now included in the food web – it is more complex and more realistic. ✓ 3. The eagles would either move away or they would need to find another food source. ✓ 4. The animals that fed on the crops would need to move away to find an alternate food source. ✓ 5. The cat, ✓ the snake ✓ and the owl. ✓ 6. The eagle. ✓
3	8 – any 8 facts	<p>Ecotourism refers to travel to natural areas ✓ to experience rare and beautiful ecosystems. ✓ Very often, the tourist is required to make a contribution to the conservation of ecosystems ✓ at tourist destinations. There has been a long history of travel to natural areas. The establishment of national parks ✓ was based on a policy of education and conservation rather than hunting wildlife. Ecotourism usually refers to recreation activities that are closely linked to natural history ✓ and that may also be related to wildlife, such as bird watching, wildlife watching, nature photography, botanical study, and wildlife treks and safaris. ✓ Very often, the local people benefit in some way from the ecotourism. ✓ Ecotourism is an opportunity to experience natural ecosystems and to contribute something back to the environment. ✓</p>