

Topic 2: Ecosystems and Ecology

Topic 2.1: Species, Population, Communities and Ecosystems



Complete each answer to create your own notes

1. Define the following terms: The first one has been done for you

A. Species: *A group of organisms that can interbreed to produce fertile offspring.*

B. Habitat

C. Population

D. Community

E. Ecosystem

F. Ecology

G. Niche

H. Biodiversity

I. Trophic level

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Topic 2.1 and 2.2 : Species, Population, Communities and Ecosystems

2. Food chains represent the flow of energy and nutrients in a series of feeding relationships.

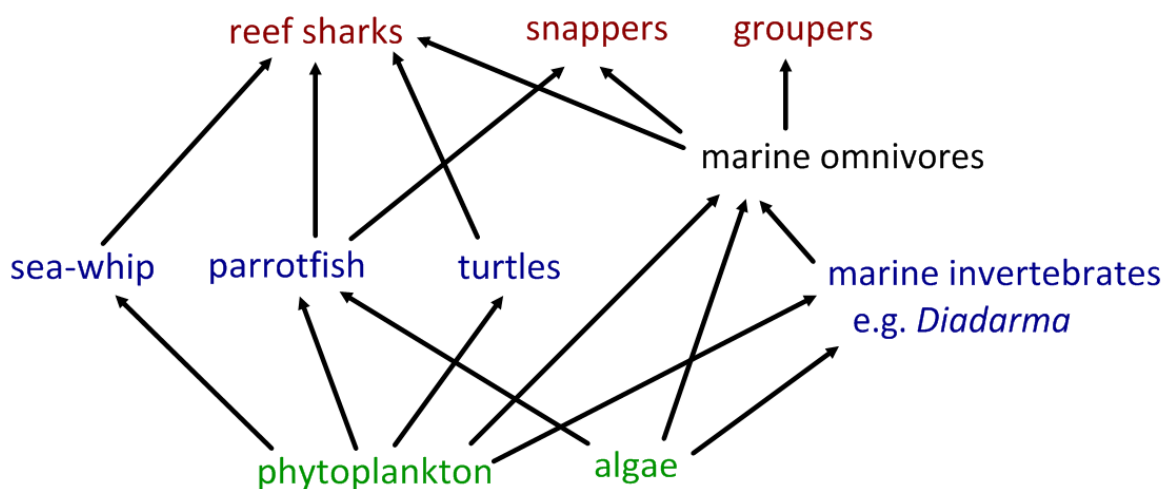
A. Give one example of a marine food chain (min. 4 organisms)

B. Give one example of a terrestrial food chain (min. 4 organisms)

C. Give one other example of a food chain (min. 4 organisms)

3. Describe what is meant by a food web.

4. The food web below shows some coral reef feeding relationships;



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A. Identify species in the following trophic levels:

I. Producers

II. Primary consumers

III. Secondary consumers

5. On a separate sheet, construct a freshwater food web based on the following information:

SEE TABLE ON THE NEXT PAGE

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Organism	Energy sources
Water crowfoot	Sunlight
Cased caddisfly larva	Micro-plants, algae, particles of dead plants and animals
Damselfly nymph	Micro-plants, algae, particles of dead plants and animals
Mayfly nymph	Micro-plants, algae, particles of dead plants and animals
Dragonfly	Other adult insects and small flies
Duck	All nymphs, all plants, snails, tadpoles, young frogs
Freshwater Shrimp	Particles of dead plants and animals
Water vole	Plants
Algae	Sunlight
Otter	Fish, frogs and newts
Water starwort	Sunlight
Pond snail	Microplants, all water plants and algae
Alderfly nymph	Micro-plants, algae, particles of dead plants and animals
Pond skater	Particles of dead plants and animals
Frog	Mayfly, midge larvae, pond skater, caddisfly, small flies
Tadpole	Micro-plants, algae
Micro-plants	Sunlight
Great diving beetle	Water flea, snails, tadpole, all nymphs
Bullhead fish	Diving beetle, tadpole, all nymphs, water flea, snail, midge larvae

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6. For the food web created above:
 - A. Identify organisms in each of the trophic levels.
 - B. Identify organisms that fit more than one trophic level.
 - C. Identify those which could be classed as detritivores

7. Suggest why it is sometimes difficult to classify organisms into trophic levels.

8. Outline why numbers of organisms are smaller at higher trophic levels.

9. State the original source of energy for almost all communities.

10. Explain how energy flows through a community, including why energy transfers are never 100% efficient.

11. State the function of a pyramid of energy.

12. Give an example of a unit of measurement used in a pyramid of energy, giving a description of each component.

13. *“Energy flows through an ecosystem, nutrients are recycled.”*

Explain this statement with the aid of a flow chart. Include the roles of saprotrophic bacteria and fungi.

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Topic 2.1: Species and Population

Population - Worm distribution:



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