Interdependence in Food Webs

KL: How do different food chains interact?

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Explain what happens if there is a change in population of one species in a food web.

Describe the relationships between organisms in a food web.

State what interdependence is.

What is a food web?

- A **food web** is a network of interconnected **food chains** . It shows the energy flow through part of an ecosystem .

What is interdependence?

- In a **food web**, changes in the population of one organism have an effect on the populations of other organisms. This is called **interdependence**.

ANTARCTICA FOOD WEB
Primary producer
Herbivore
Carnivore
1 Sun's Energy
2 Plankton
3 Krill
4 Fish
5 Humpback Whale
6 Squid
7 Crabeater Seal
8 Adelie Penguin
9 Petrel
10 Emperor Penguin
11 Killer Whale
12 Leopard Seal

Look at the food web on your sheet…

Annotate the food web to help you understand what is going on. (You will need to count **carefully!**)

- Answer the following questions on the sheet:
- 1. What is the producer?
- 2. How many secondary consumers?
- 3. How many tertiary consumers?
- 4. What is the highest number of trophic levels?

Plankton are organisms that live in water.

Explain why plankton are so important in the food web that you have just looked at.

- Hint: Think about which organisms would be affected if the plankton population suddenly decreased...

ACTIVITY 2 : ANALYSE A FOOD WEB

Which of these are not herbivores? Moth larvae, stoat, aphid.

Which secondary consumers are also top carnivores?

Name two species that are eaten by owls.

If the ladybirds were removed, what would happen to the population of aphids and spiders?

Aphids _____

_____

_____

_____

Spiders _____

_____

_____

ACTIVITY 2 : ANALYSE A FOOD WEB

Which of these are not herbivores? Moth larvae, stoat, aphid.
stoat

Which secondary consumers are also top carnivores?
Owl & stoat

Name two species that are eaten by owls.
Blue tit, chiffchaff, vole

If the ladybirds were removed, what would happen to the population of aphids and spiders?
Aphids: increase because they don't get eaten by the ladybirds
Spiders: decrease because the blue tit would have to eat the moth larvae, so spiders would have less food (moth larvae)

Interdependence and Food Webs Answers

1. Match the keyword with its correct definition. [2]

consumer	Makes own food using energy from the sun
producer	The number of organisms within a species or community
population	Eats other organisms to gain energy

2. Complete this food chain by drawing the arrows in the correct positions. [1]

3a. What would happen to the population of other organisms if all the grass died? Tick one [1]

☐ increase ☑ decrease ☐ no change

3b. Explain your answer. [2]

Grass is a source of energy for the whole food chain, less grass means less food for caterpillars and then less food for other animals.

3c. What would happen to the population of the hawk if the fox population decreased? Tick one [1]

☑ increase ☐ decrease ☐ no change

3d. Explain your answer. [2]

The fox eats mice, so with fewer foxes there is more food for the hawk, so the hawk population can increase.