

NAME: SOLUTIONS CLASS: _____ Mark: 51

Achievement standards being tested

Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions.

| Mark | ND | NW | C | HC | O |
|------------|------|-------|-------|-------|-------|
| Mark Range | 0-11 | 12-20 | 21-26 | 27-31 | 32-42 |

Multiple Choice Write the answer to each question in the appropriate box at right.

1. Which of these human activities would have a **negative** impact on a natural environment?
 - A Clearing forests and replacing them with exotic trees.
 - B Removing grazing cattle from a natural woodland.
 - C Replanting eucalypt trees.
 - D Reintroducing koalas into eucalypt forests.
2. A habitat is:
 - A a place where an organism lives.
 - B an ecosystem.
 - C a group of competitors.
 - D the way an organism behaves.
3. Which of the following is not an abiotic factor?
 - A Tree
 - B Water
 - C Light
 - D Temperature
4. Which of these human activities has a **positive** effect on food webs?
 - A Opening up an area of bushland for recreational activities.
 - B Removing introduced predators from an area.
 - C Overfishing particular fish species, causing a decline in numbers.
 - D Introducing exotic species, such as rabbits and foxes.
5. All animals are:
 - A producers.
 - B consumers.
 - C carnivores.
 - D decomposers.

| QUESTION | ANSWER |
|----------|--------|
| 1 | A |
| 2 | A |
| 3 | A |
| 4 | B |
| 5 | B |
| 6 | A |
| 7 | D |
| 8 | B |
| 9 | B |
| 10 | C |
| 11 | D |
| 12 | C |
| 13 | A |
| 14 | B |
| 15 | C |
| 16 | D |
| 17 | A |

6. Plants are examples of:

- A producers.
- B consumers.
- C carnivores.
- D decomposers.

7. In the food chain below, which organism is the third-order consumer?

grass → grasshopper → frog → snake

- A Grass
- B Grasshopper
- C Frog
- D Snake

8. Bacteria and fungi belong to an ecosystem group called:

- A composers.
- B decomposers.
- C plants.
- D herbivores.

9. As you move up the food web:

- A the number of organisms increases.
- B the number of organisms decreases.
- C the number of organisms stays the same, but the size of each gets bigger.
- D the number of organisms stays the same, but the size of each gets smaller.

10. As energy flows through a food web:

- A some of it is destroyed.
- B all of it is eventually destroyed.
- C some is lost to the environment.
- D it is divided equally between each type of organism.

11. The ultimate source of energy for all the organisms in a food web is:

- A soil for providing essential minerals.
- B water to prevent dehydration.
- C green plants for photosynthesis.
- D the Sun for providing light.

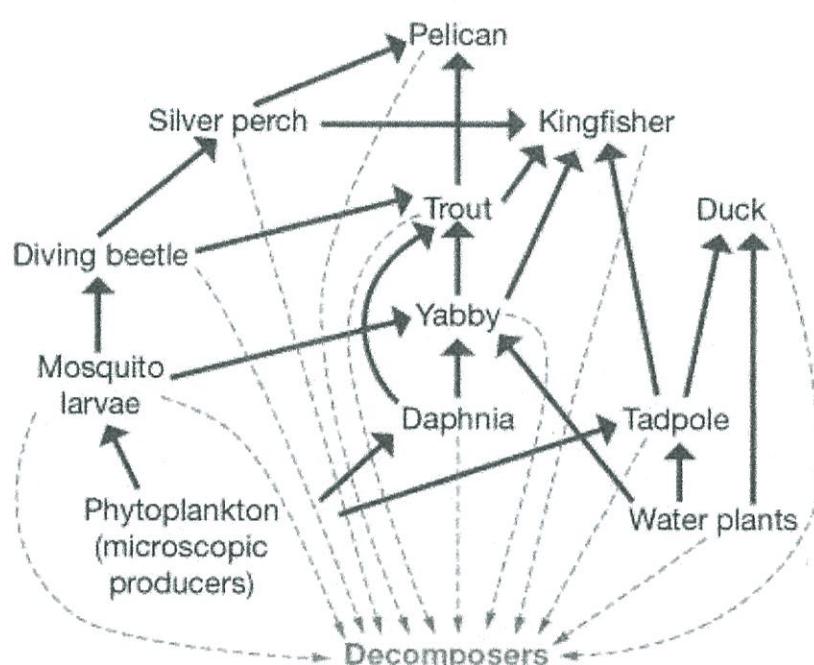
12. Which of the following are not decomposers?

- A Fungi
- B Mould
- C Crustaceans
- D Bacteria

13. Which of the following is not an introduced species?

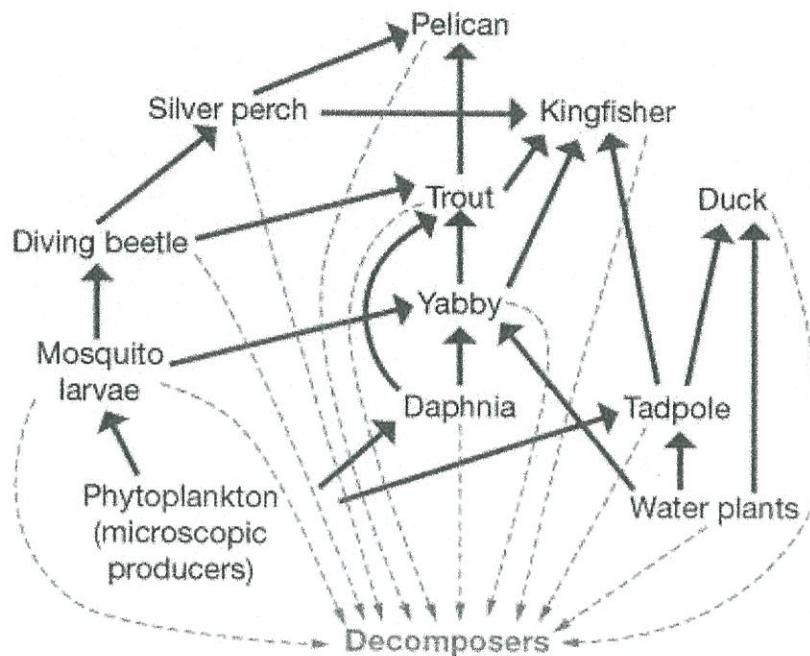
- A Wallaby
- B North Pacific sea star
- C Cane toad
- D Rabbit

14. The breakdown of the remains of dead organisms on and below the Earth's surface is largely the responsibility of:
- consumers.
 - decomposers.
 - producers.
 - scavengers.
15. Which of the following terms is best used to mean 'close to extinction'?
- Rare
 - Vulnerable
 - Endangered
 - Suspect
16. Identify the food chain that is part of this food web.



- Phytoplankton → daphnia → trout → duck → decomposers
- Water plant → tadpole → trout → kingfisher → decomposers
- Phytoplankton → mosquito larvae → yabby → silver perch → pelican → decomposers
- Water plant → yabby → trout → kingfisher → decomposers

17. Interpret the food web then identify the organisms that are *third-order consumers*.



- A Silver perch, trout, pelican
 - B Kingfisher, daphnia, trout
 - C Silver perch, tadpole, duck
 - D Pelican, duck, daphnia

Short Answer

Write the answer to the questions in the spaces provided.

1. (a) Give a *single word* to describe something made up of living and non-living things that interact with each other.

Ecosystem (1)

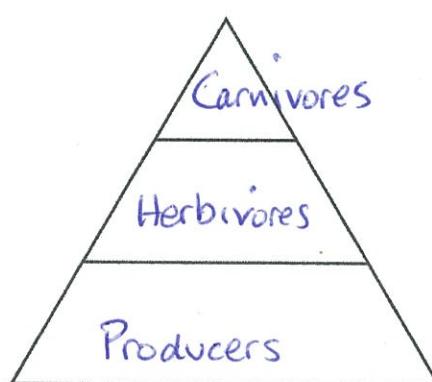
- (b) Give a *single word* to describe organisms that eat the same sort of food as each other.

Competitors (1)

- (2)

2. On the following pyramid, **label each level** using the following words:

carnivores, producers, herbivores



1 mistake - 1 off

2 mistakes - 2 off

(3)

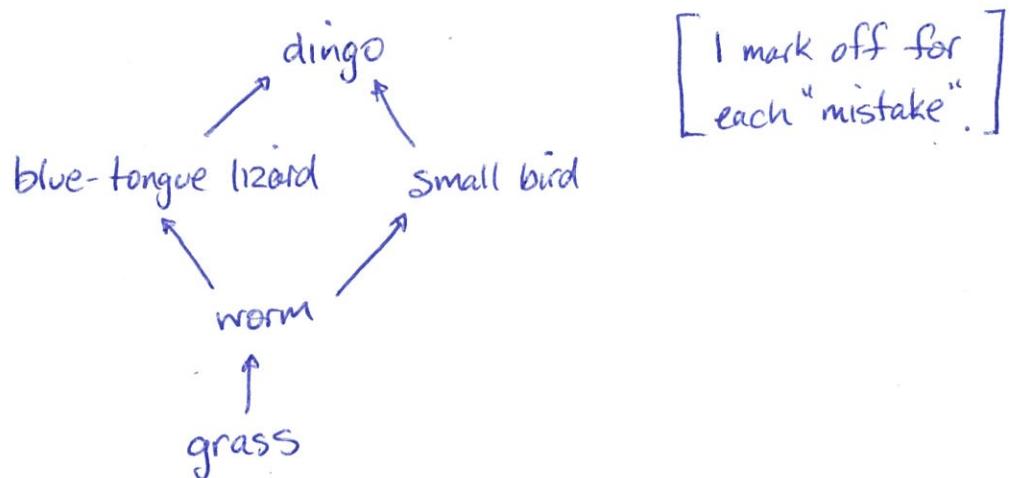
3. Complete the missing part of each of the following words to form three different groups of animals. Explain what each word means.

| WORD | MEANING |
|---------------------------|-----------------------------------|
| H <u>e</u> rbivore (1) | Eats plants. (1) |
| C <u>a</u> rnivore (1) | Eats animals (meat). (1) |
| O <u>m</u> nivore (1) | Eats both plants and animals. (1) |

(6)

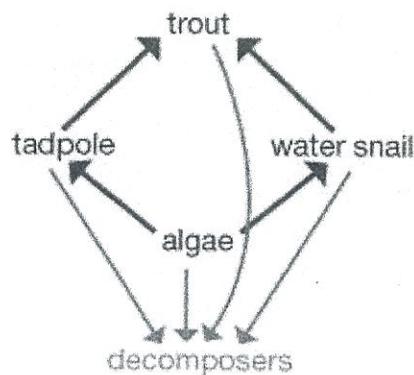
4. Draw a simple **food web** involving the following organisms:

Grass, worm, small bird, blue-tongue lizard, dingo.



(4)

5. The diagram represents a food web in a freshwater lake.



- (a) What would be the effect on the population of water snails if the trout were fished out of the lake by very keen fishermen?

Water snail or tadpole numbers increase.

(1)

- (b) Explain your answer.

There are no predators to eat them. (2)

(2)

6. Describe these terms by matching them with the correct definition:

habitat, biosphere, ecosystem, environment.

- (a) A particular area in which a group of organisms live, interacting with one another and with their non-living surroundings.

Ecosystem (1)

- (b) The place where an animal or plant lives at a particular time.

Habitat (1)

- (c) A combination of all of the living and non-living factors that an organism is subject to in the place where it lives.

Environment (1)

- (d) The place where all life exists. It consists of the Earth and its atmosphere.

Biosphere (1)

(4)

7. The diagram below shows a small part of a forest food web. Which of the organisms in the food web are:

(a) first-order consumers?

grasshoppers, mice, rabbits (1)

(b) third-order consumers?

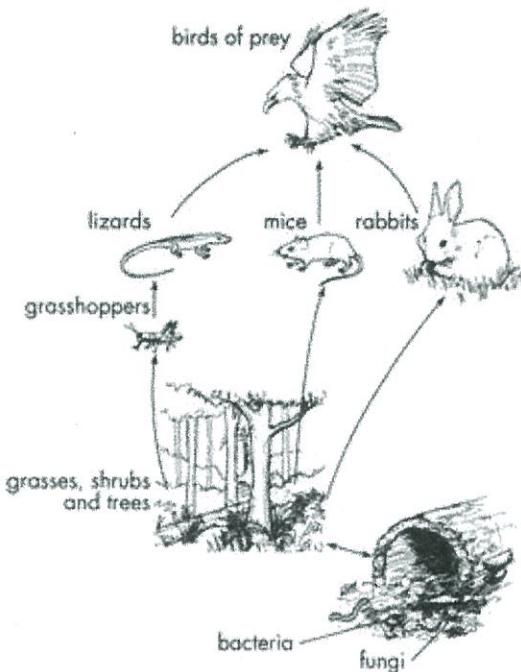
birds of prey (1)

(c) producers?

grass, shrubs and trees (1)

(d) decomposers?

fungi, bacteria (1)



(4)

8. Use your knowledge and the food chain below to answer the following questions.

grass → grasshopper → frog → snake → kookaburra

(a) Classify the organisms in this food chain as producers and consumers.

Producers: grass

Consumers: grasshopper, frog, snake, kookaburra

(1)

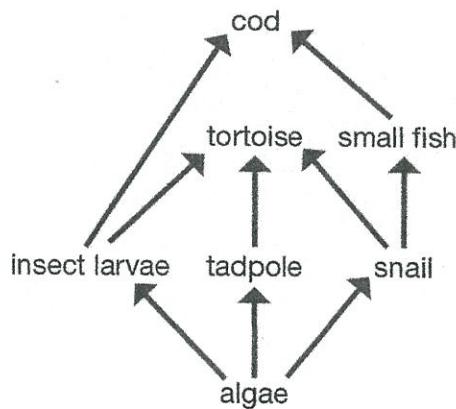
(b) Explain why producers and consumers are so named.

Producers: Make food for themselves and other organisms. (1)

Consumers: Eat other organisms. (1)

(2)

9. Study the diagram shown, which represents a food web in a freshwater creek.



- (a) Explain what the arrow between two organisms means.

Direction of energy flow.

- (b) Identify the very important group of organisms that has *not* been included in this food web.

Decomposers.

- (c) Explain the role of this group of organisms.

They feed on the dead remains of organisms.

- (d) Identify and record two different food chains that include the tortoise.

algae → tadpole → tortoise

algae → insect larvae → tortoise.

[Any 2 - 1 mark]

algae → snail → tortoise

- (e) Explain why this community could not survive without the algae.

Algae is the only producer and everything else relies on it. It starts every food chain.

(5)