

1 In which stages in the water cycle is the water in vapour form?

	absorption by plant roots	movement from sea to clouds	precipitation	transpiration
A	✓	✓	x	x
B	✓	x	✓	x
C	x	✓	x	✓
D	x	x	✓	✓

[1]

[Total: 1]

2 Define the term *population*.

.....
.....
.....
.....

[2]

[Total: 2]

3 Some students observed a number of organisms in a habitat.

They saw that beetles eat plants, snakes eat frogs and frogs eat beetles.

Write out a food chain linking these organisms. Write your answers in the spaces.

..... → → →

[1]

[Total: 1]

4 Define the term *trophic level*.

.....
.....
.....

[1]

[Total: 1]

- 5 The populations of India and China show a similar pattern to each other. Both populations have decreased at one point in time and then increased.

State **two** factors that could cause a human population to **decrease**.

1

2

[2]

[Total: 2]

- 6 Moose, *Alcesamericanus*, shown in the diagram below, are large herbivores that primarily live in northern parts of North America. They have a varied diet that includes young shoots of willow trees and aquatic plants.



Isle Royale is a large island in Lake Superior in the United States where there is a population of moose that has been studied by ecologists for a long time. The animals' only predator is the wolf. The island has a population of wolves that has changed in numbers over the years.

- (a) (i) Draw a food chain for the organisms in the passages above.

[2]

- (ii) Complete the table below by stating the name and identifying the trophic level of each organism in the food chain.

name of organism	trophic level

[3]

[Total: 5]

7 The boxes on the left contain biological terms.

The boxes on the right contain definitions of these biological terms.

Draw one straight line to link each term with its correct definition.

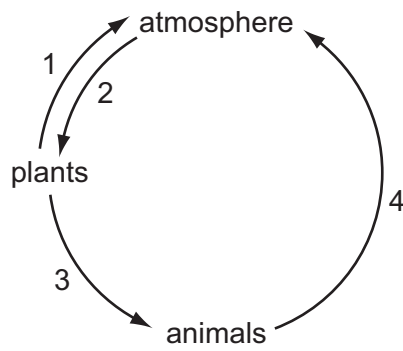
One has been done for you.

term	definition
trophic level	unit containing all of the organisms and their environment, interacting together in a given area
ecosystem	diagram showing the flow of energy from one organism to another
food chain	position of an organism in, for example, a pyramid of numbers
herbivore	organism that gets its energy from eating plants
carnivore	organism that gets its energy from dead or waste organic matter
decomposer	organism that gets its energy from eating other animals

[4]

[Total: 4]

8 The diagram shows part of the carbon cycle.



Which numbers represent excretion?

A 1 and 2

B 1 and 4

C 2 and 3

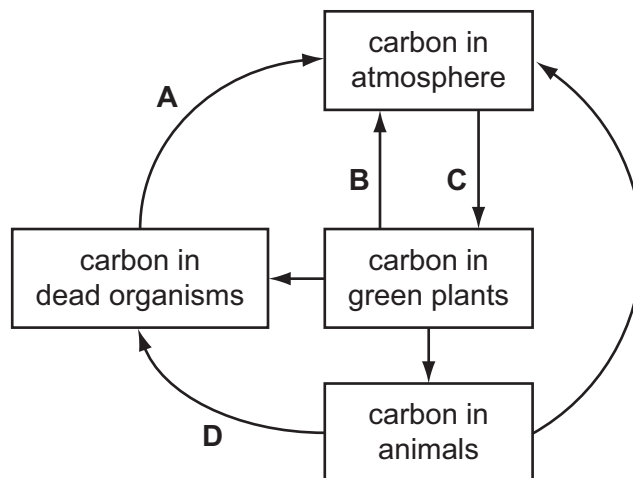
D 3 and 4

[1]

[Total: 1]

9 The diagram shows part of the carbon cycle.

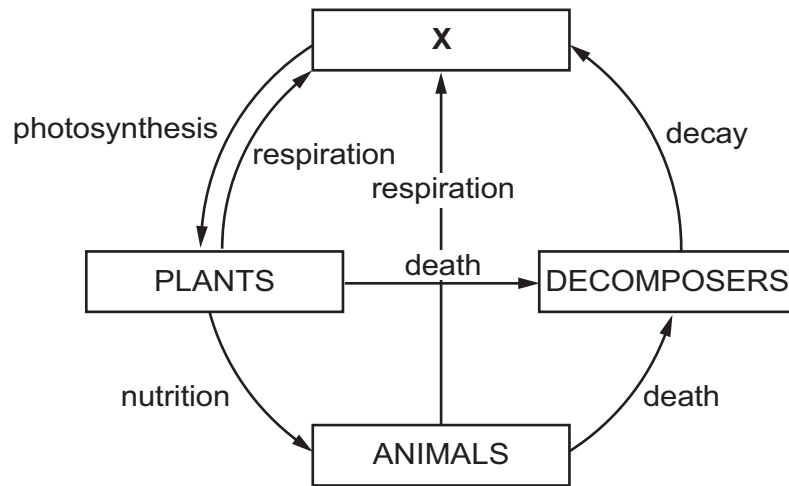
Which arrow shows respiration in decomposers?



[1]

[Total: 1]

10 The diagram shows the carbon cycle.



What is substance X?

- A carbon dioxide
- B oxygen
- C starch
- D water

[1]

[Total: 1]

- 11 The ant-mimic jumping spider, *Myrmarachne formicaria*, is shown in the diagram

The common name of this species describes its behaviour. It is an arachnid that tricks its prey because it looks like the insects that it eats.

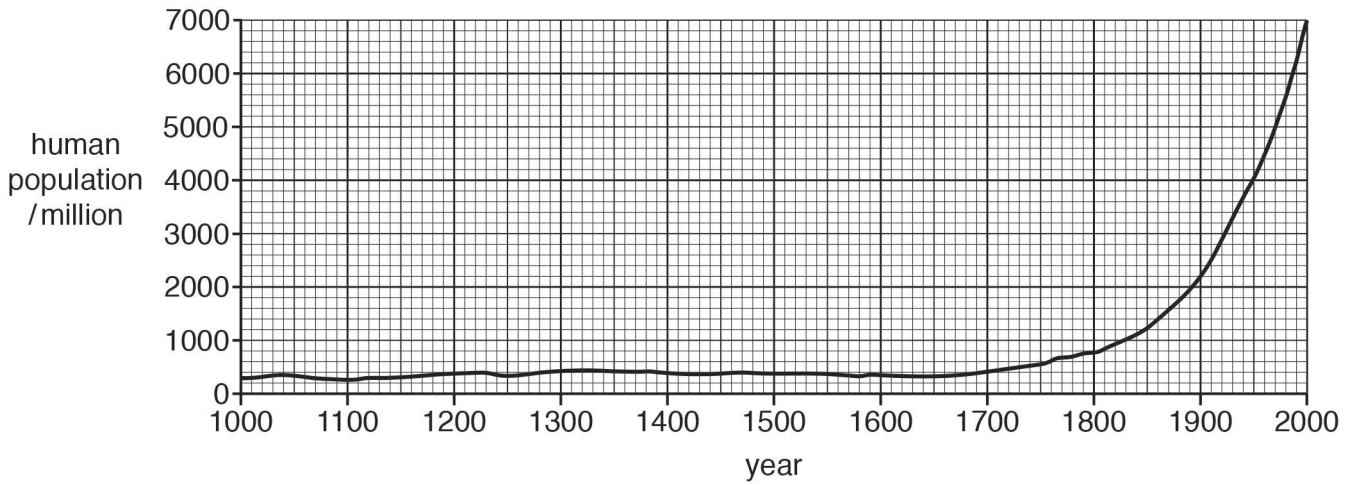


Suggest which trophic level in a food chain *M. formicaria* could belong to.

..... [1]

[Total: 1]

12 The graph shows the world's human population between the years 1000–2000.



Describe the data shown in the graph.

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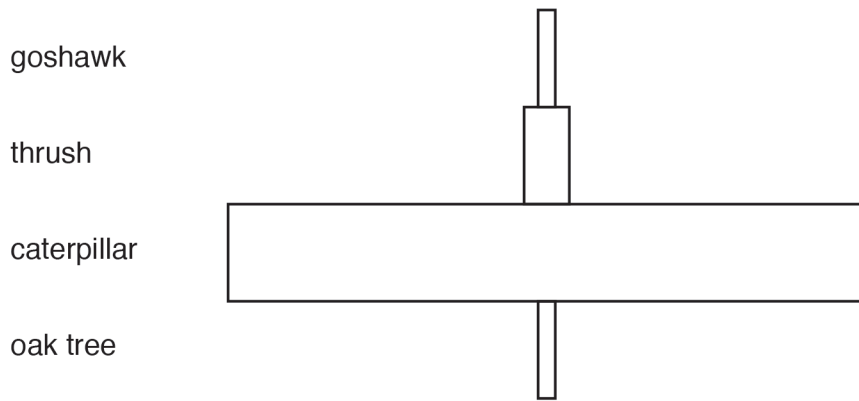
.....

.....

[3]

[Total: 3]

13 The diagram shows the pyramid of numbers for a food chain in a forest.



not to scale

State the name of the secondary consumer in the diagram.

..... [1]

[Total: 1]

14 Since 1800 the population of humans in the world has increased dramatically.

State **three** ways in which this increase in the human population has affected marine ecosystems.

1

.....

2

.....

3

..... [3]

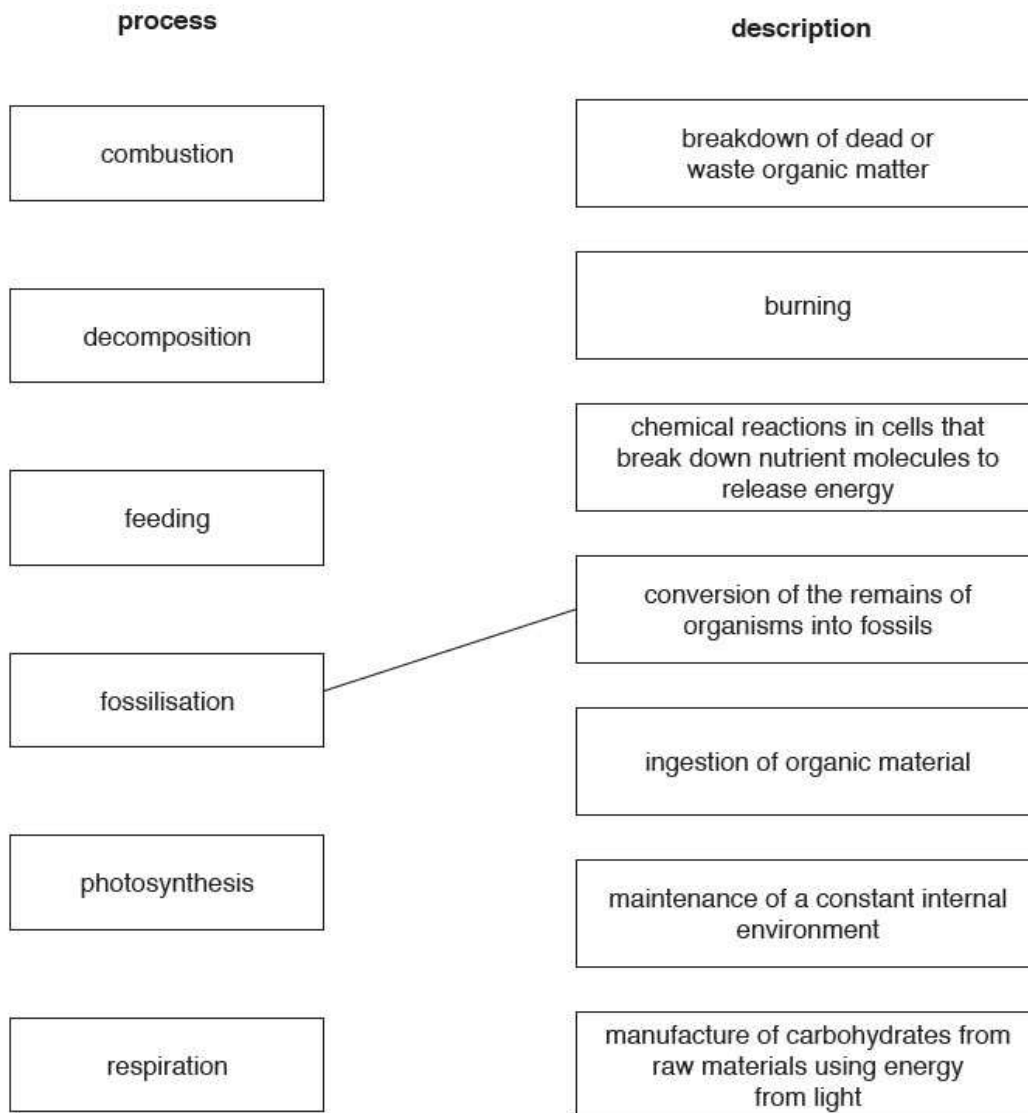
[Total: 3]

17 The boxes on the left contain the names of processes from the carbon cycle.

The boxes on the right contain some descriptions of processes.

Draw **one** straight line from each process to link the process to its description.

An example has been done for you.



[5]

[Total: 5]

18 Define the term *producer*.

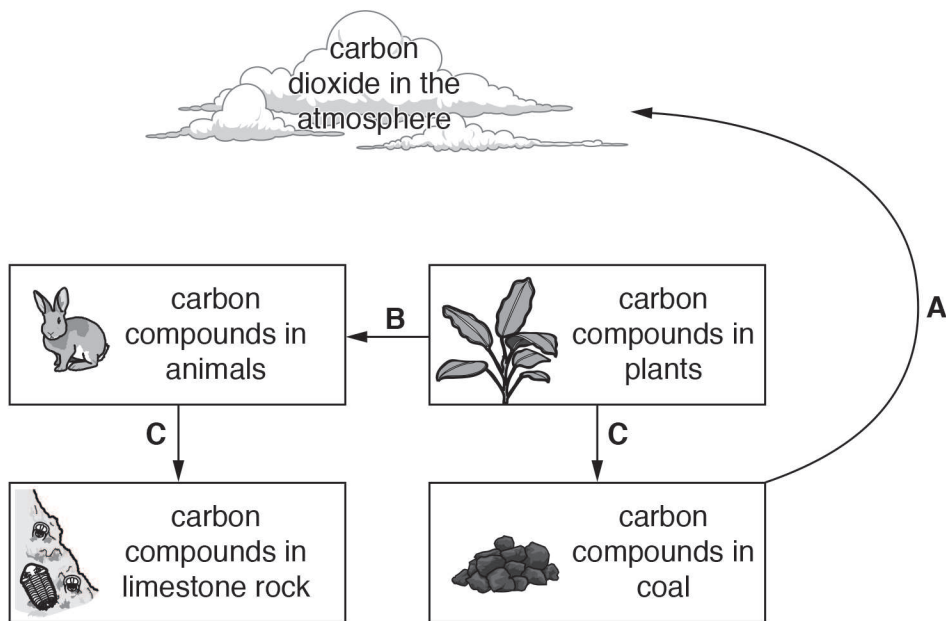
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..... [2]

[Total: 2]

19 The diagram below shows part of the carbon cycle.



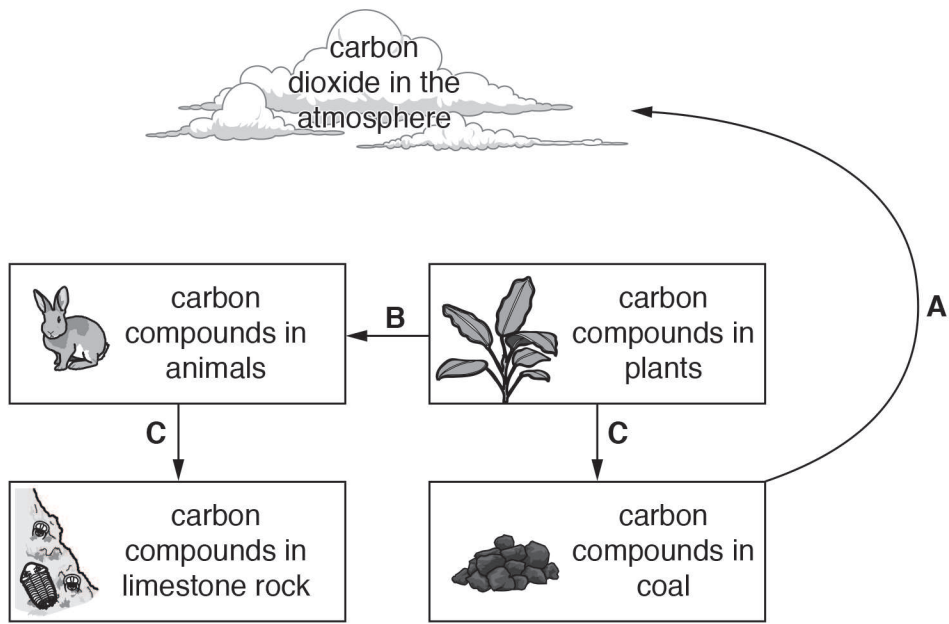
On the diagram draw **one** arrow to represent photosynthesis.

Label this arrow with a letter **D**.

[1]

[Total: 1]

20 The diagram below shows part of the carbon cycle.



Identify the processes shown by arrows **A**, **B** and **C** on the diagram.

Choose words from the list.

- combustion decomposition excretion feeding fossilisation**

process **A**.....

process **B**

process **C** [3]

[Total: 3]