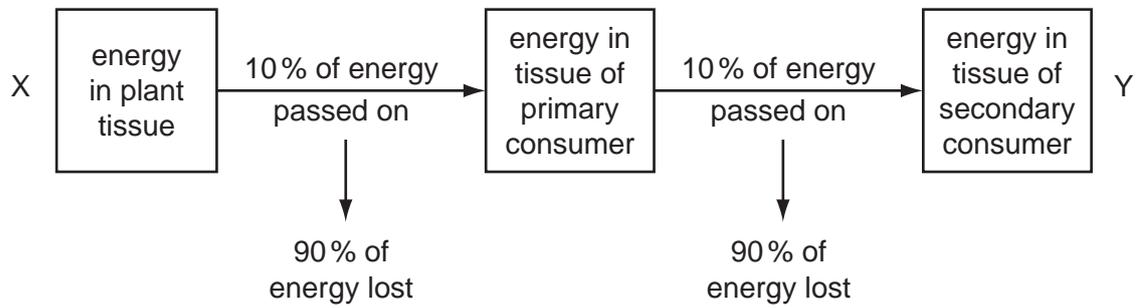


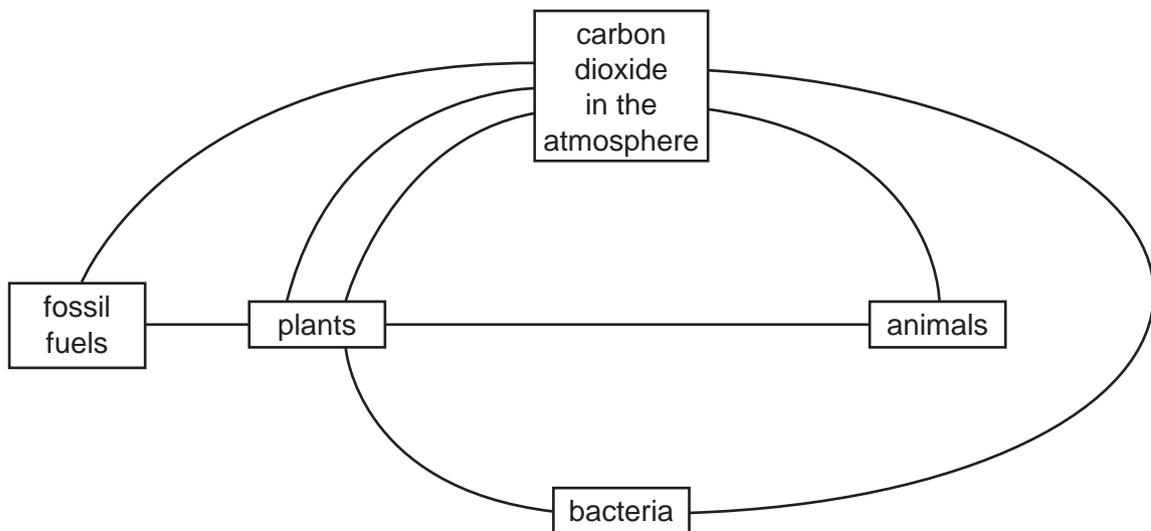
1 The diagram shows energy flow through a food chain from X to Y.



By which processes is energy lost between X and Y?

- A excretion and respiration
- B growth and excretion
- C growth and photosynthesis
- D photosynthesis and respiration

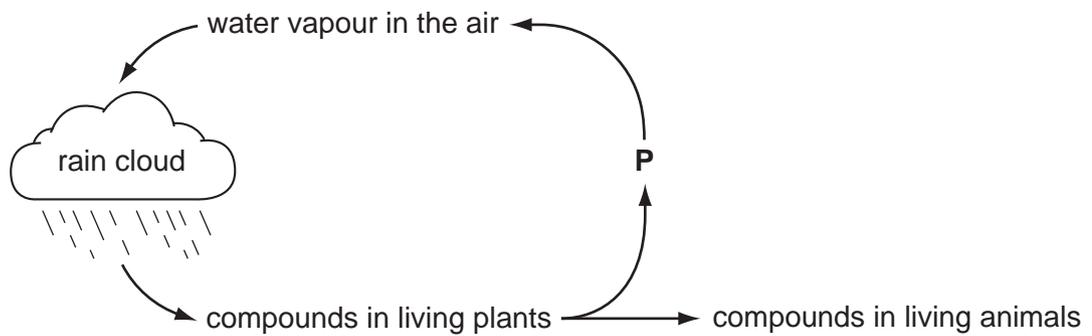
2 The diagram shows the movement of carbon atoms in part of the carbon cycle. The directions of movement are not shown.



How many of the groups of living organisms in the diagram return carbon dioxide to the atmosphere?

- A 1
- B 2
- C 3
- D 4

3 The diagram shows part of the water cycle.

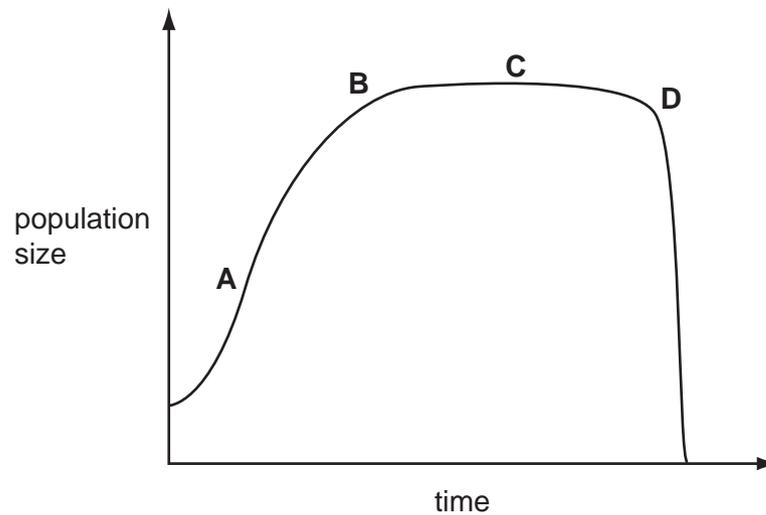


Which process in living plants is responsible for returning water vapour to the air at **P**?

- A** combustion
- B** condensation
- C** evaporation
- D** photosynthesis

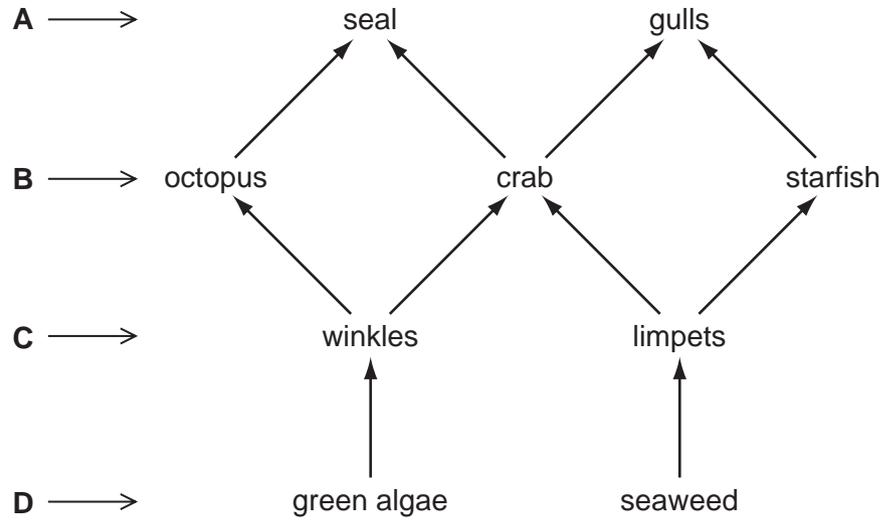
4 The diagram shows how the size of a population may change with time.

At which point is the population growing the fastest?

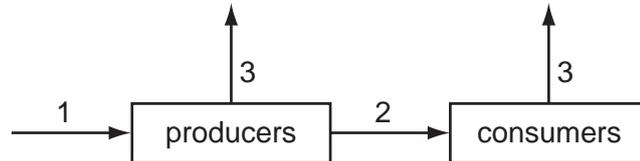


5 The diagram shows a food web.

At which level does energy from the Sun enter the food web?



6 The diagram gives a simplified scheme for energy flow through an ecosystem.

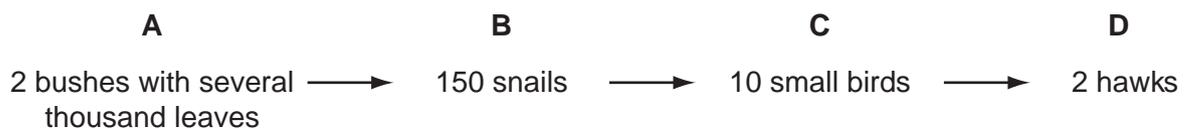


Which processes do the labelled arrows represent?

	1		
A	feeding	photosynthesis	respiration
B	feeding	respiration	photosynthesis
C	photosynthesis	feeding	respiration
D	photosynthesis	respiration	feeding

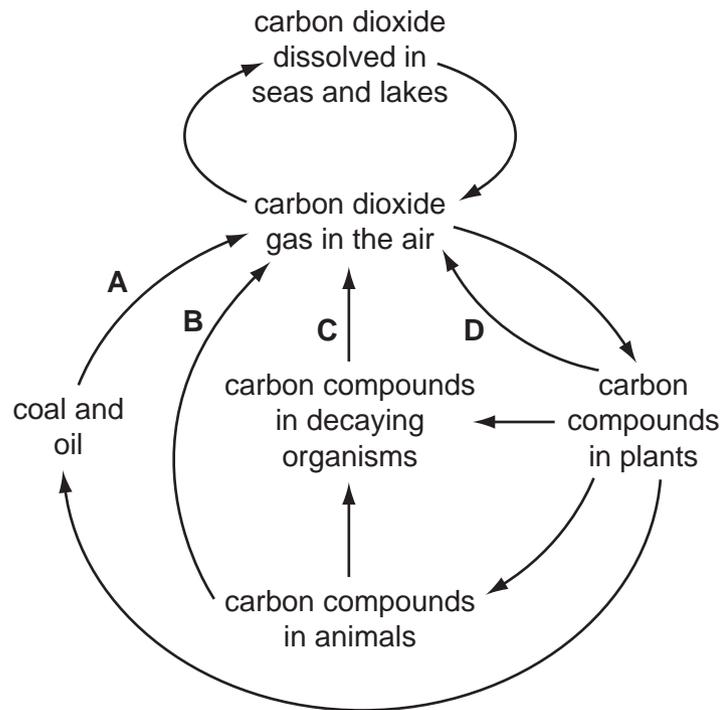
7 The food chain shows the number of animals relying on two bushes for their survival.

At which step in the food chain do the organisms have the greatest amount of energy?

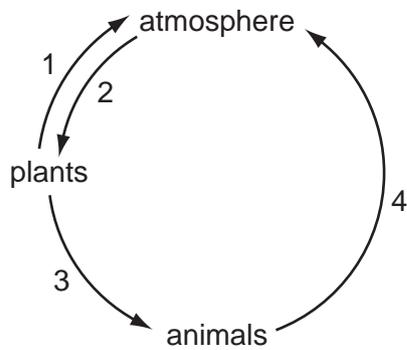


8 The diagram shows the carbon cycle.

Which process produces carbon dioxide from substances made by photosynthesis millions of years ago?



9 The diagram shows part of the carbon cycle.

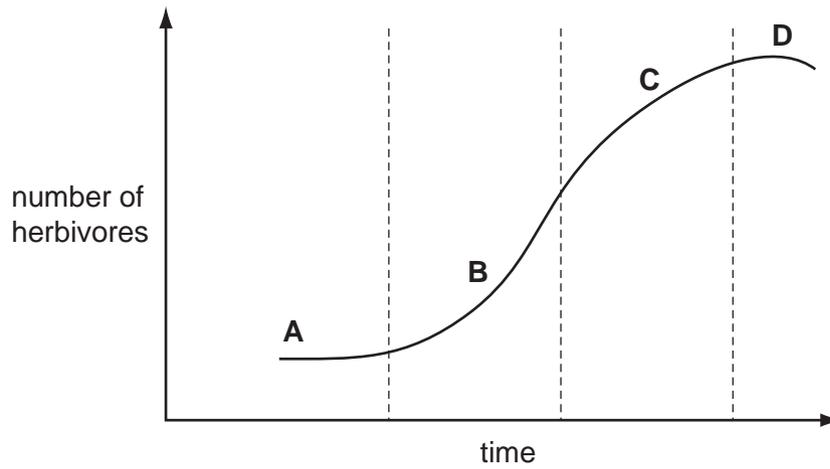


Which numbers represent excretion?

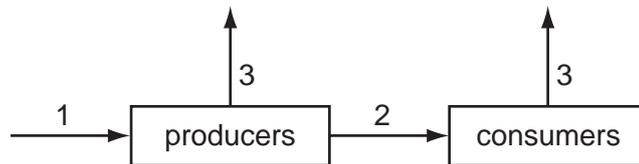
- A** 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 3 and 4

10 The graph shows the rate of growth for a population of herbivores.

Which is the exponential (log) phase in the growth of this population?



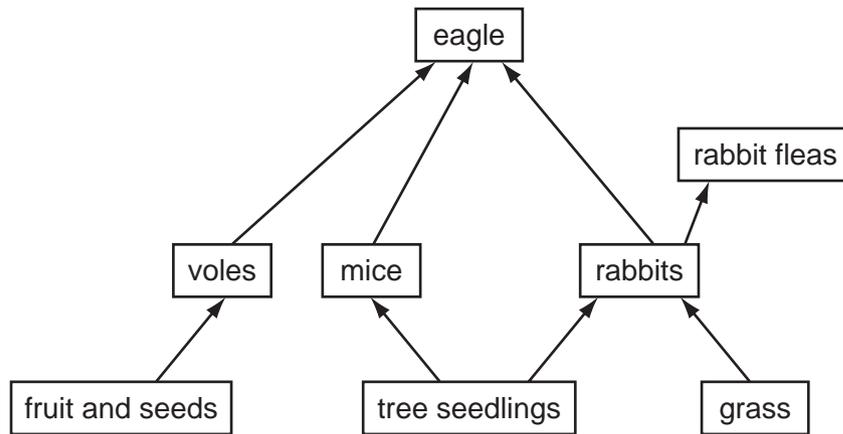
11 The diagram gives a simplified scheme for energy flow through an ecosystem.



Which processes do the labelled arrows represent?

	1	2	3
A	feeding	photosynthesis	respiration
B	feeding	respiration	photosynthesis
C	photosynthesis	feeding	respiration
D	photosynthesis	respiration	feeding

12 The diagram shows a food web.



Which of the following is a food chain in this web?

- A grass → rabbits → eagle
- B grass → voles → eagle
- C rabbit fleas → rabbits → grass
- D seeds → voles → mice

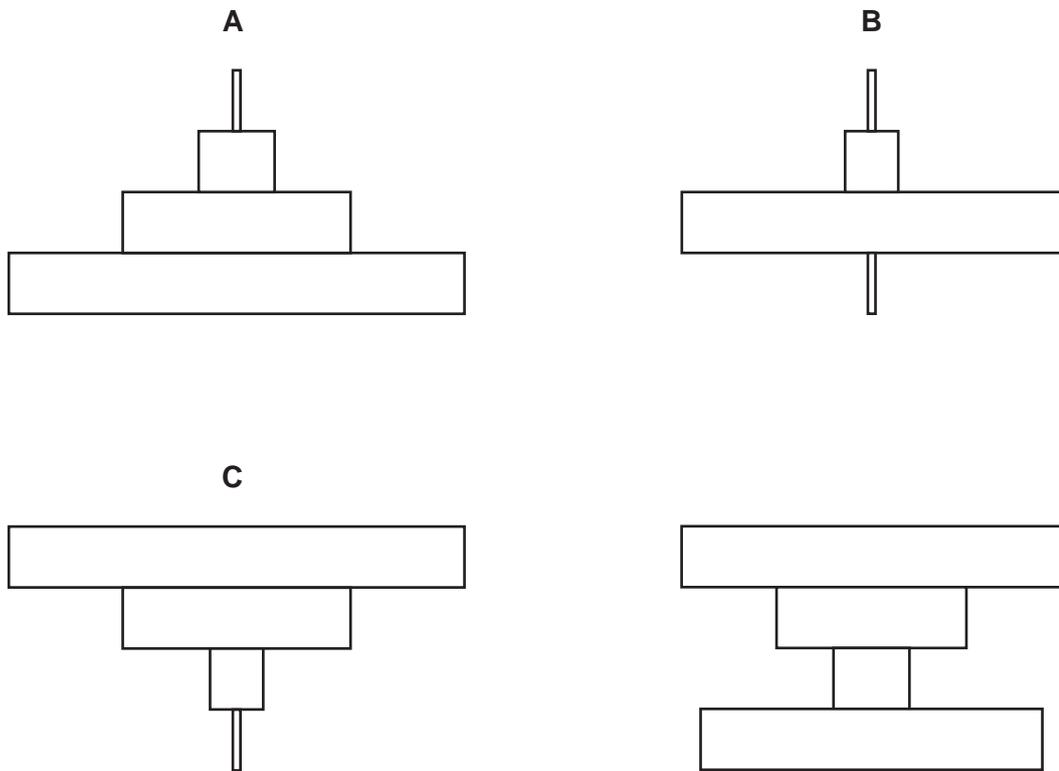
13 In one habitat, hyaenas eat antelopes and antelopes eat grass.

What is the source of energy for the grass?

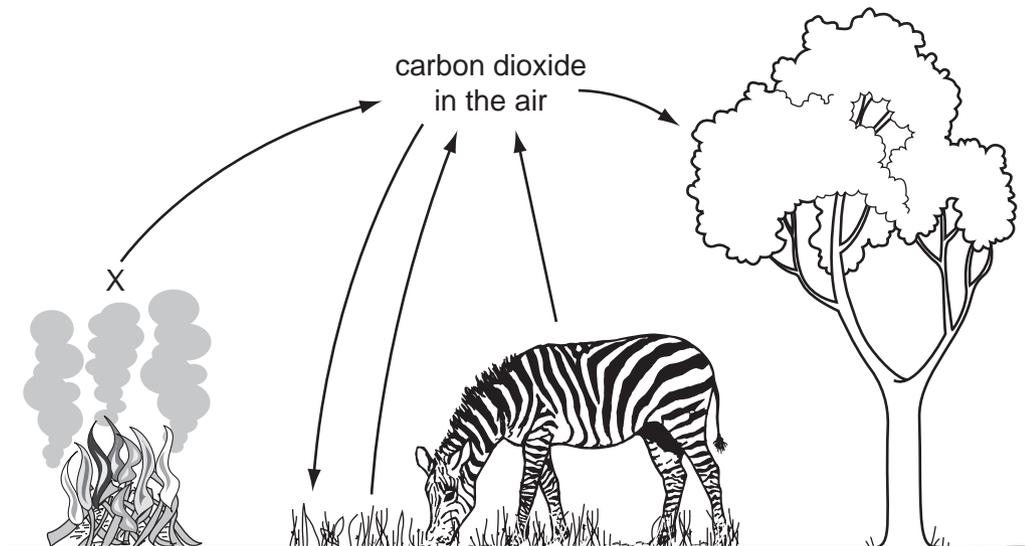
- A antelopes
- B carbon dioxide
- C hyaenas
- D the Sun

- 14 A single tree is food for a large population of caterpillars. Several small birds eat the caterpillars. A bird of prey eats the small birds.

Which diagram shows the pyramid of numbers for this food chain?



- 15 The diagram shows part of the carbon cycle.

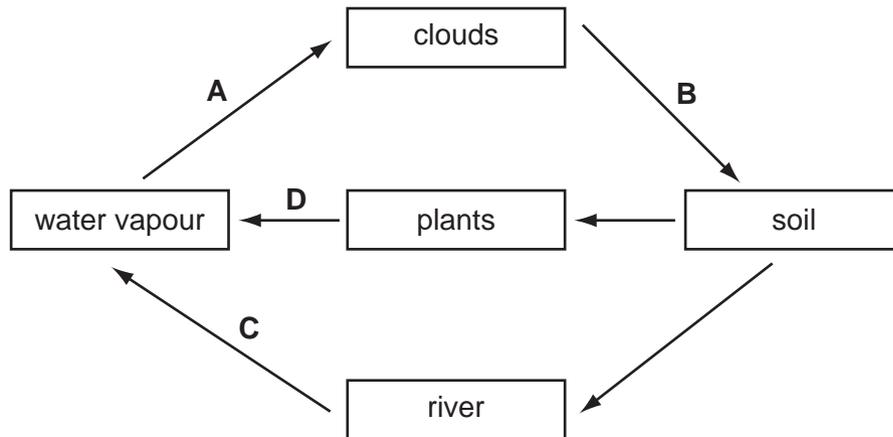


Which process is taking place at X?

- A** combustion
- B** decomposition
- C** photosynthesis
- D** respiration

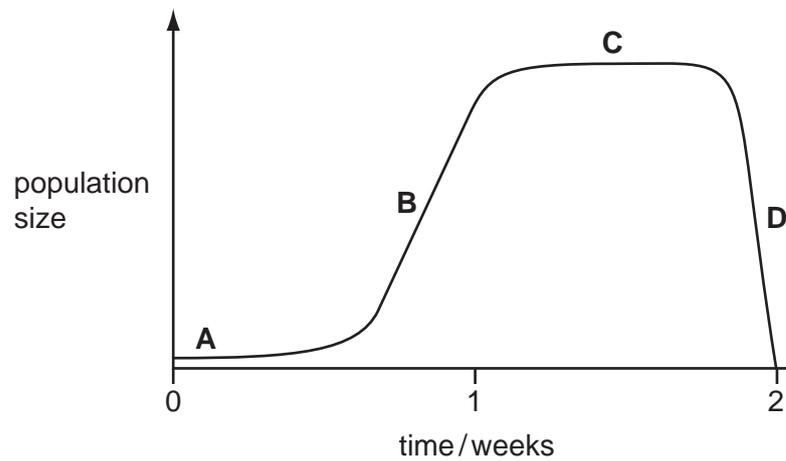
16 The diagram shows part of the water cycle.

Which arrow represents condensation?

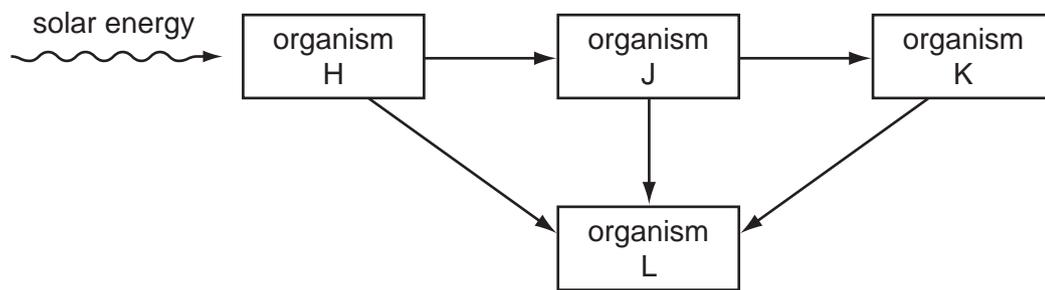


17 Some bacteria were grown in a nutrient solution over a period of two weeks. The graph shows how the population of bacteria changed during this time.

Which is the lag phase in the growth of this population?



18 The diagram shows a simple food web.



What must organism J be?

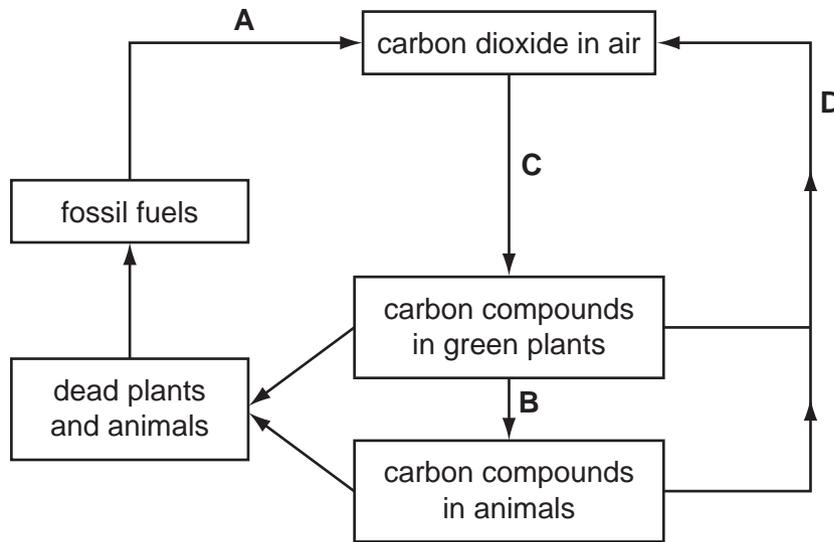
- A a carnivore
- B a decomposer
- C a herbivore
- D a producer

19 At each stage in a food chain, energy is lost.

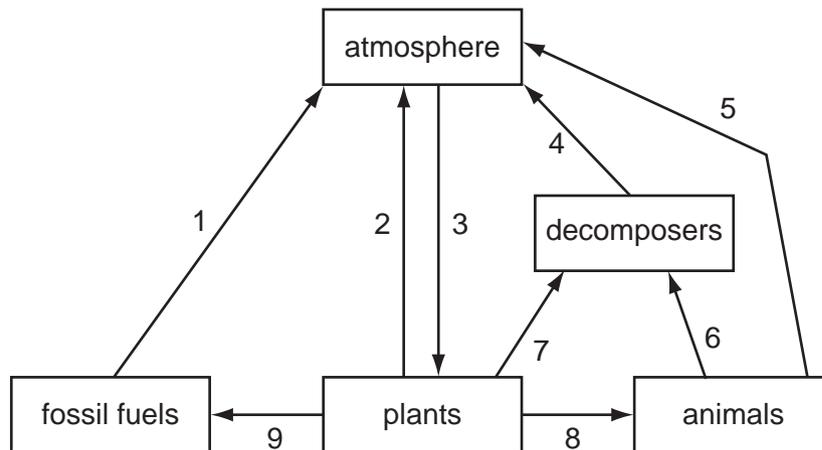
What is a result of this?

- A All living organisms respire.
- B Food chains always begin with green plants.
- C Plants are called producers and animals consumers.
- D There are very few food chains with more than five organisms.

20 Which part of the carbon cycle involves the release of energy from food substances in all living cells?



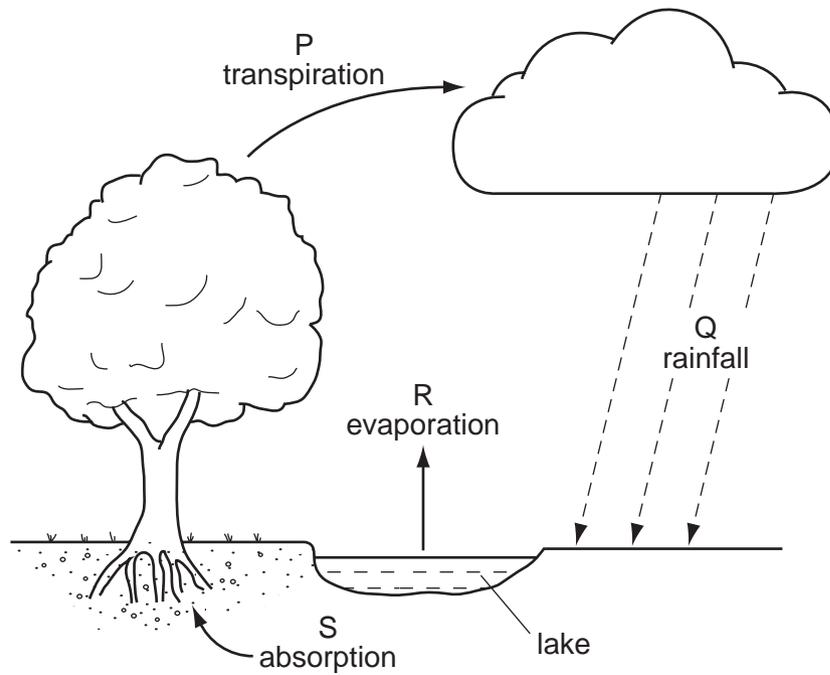
21 The diagram represents the carbon cycle. Processes involved in the circulation of carbon are numbered 1 to 9.



Which processes are parts of a food web?

- A** 1, 2 and 3 **B** 1, 5 and 8 **C** 2, 4 and 9 **D** 6, 7 and 8

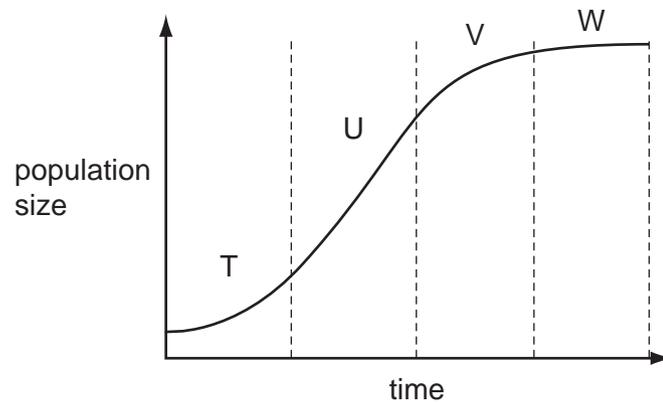
22 The diagram shows part of the water cycle.



Which processes will be slowed down by an increase in humidity?

- A** P and Q **B** P and R **C** Q and R **D** Q and S

23 The graph shows the growth of a population in a suitable environment.



During which two stages is the population affected by lack of resources as a limiting factor?

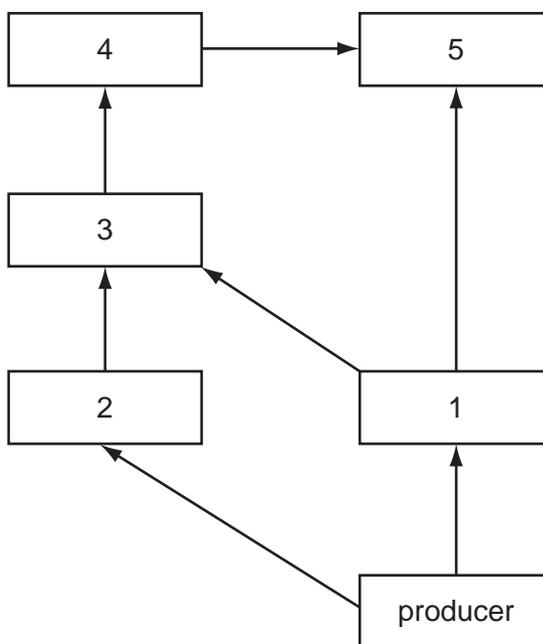
- A** T and U **B** U and V **C** V and W **D** W and T

24 The size of the arrows shows the approximate, relative amounts of energy passing from one stage to the next in a food chain.

Which chain represents the energy losses between trophic levels?

- A** sun \longrightarrow grass \longrightarrow rabbit \longrightarrow fox
- B** sun \longrightarrow grass \longrightarrow rabbit \longrightarrow fox
- C** sun \longrightarrow grass \longrightarrow rabbit \longrightarrow fox
- D** sun \longrightarrow grass \longrightarrow rabbit \longrightarrow fox

25 The diagram shows a food web.

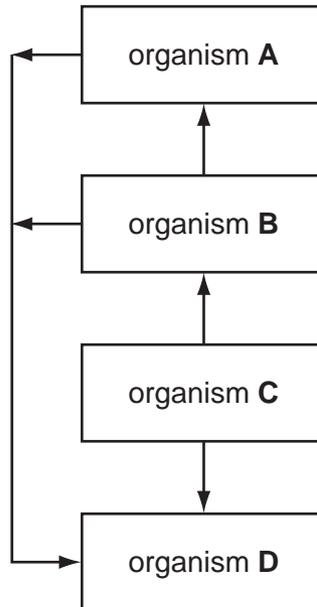


Which organisms occupy the same trophic level?

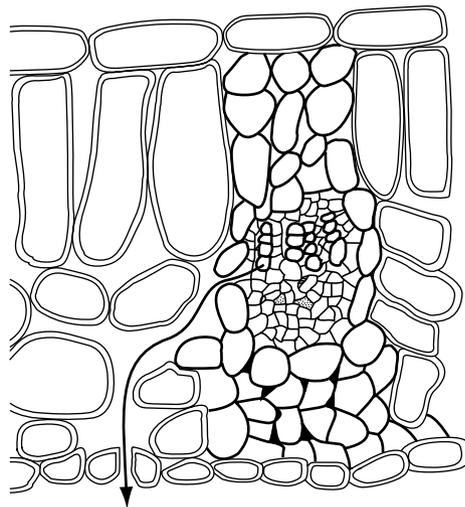
- A** 3 and 2 **B** 4 and 1 **C** 5 and 2 **D** 5 and 3

26 The diagram shows the flow of energy in a food chain.

Which organism is the producer in the food chain?



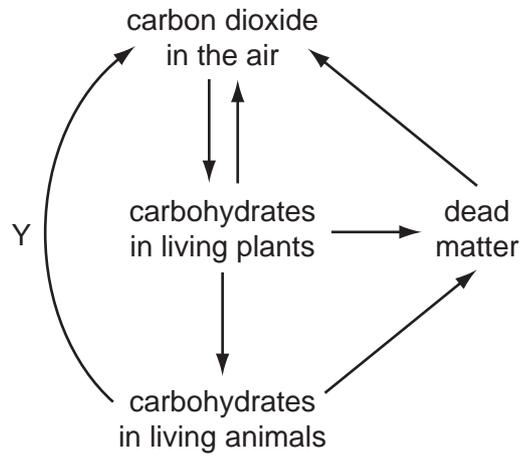
27 The diagram shows part of a section through a leaf.



The arrow represents part of the

- A** carbon cycle only.
- B** flow of energy.
- C** water and carbon cycles.
- D** water cycle only.

28 The diagram shows part of the carbon cycle.

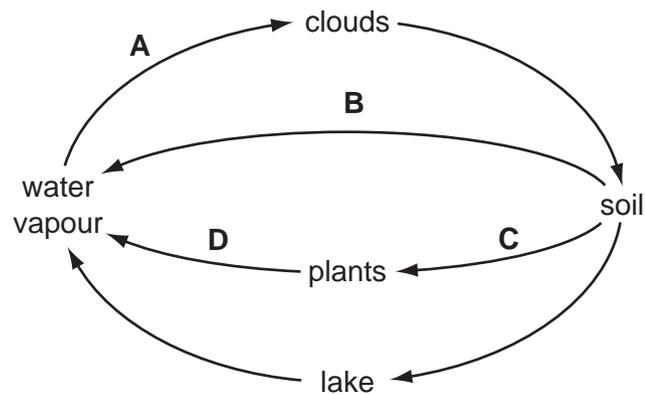


Which process occurs at Y?

- A** combustion
- B** decay
- C** photosynthesis
- D** respiration

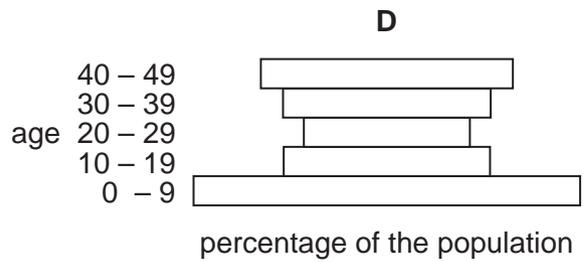
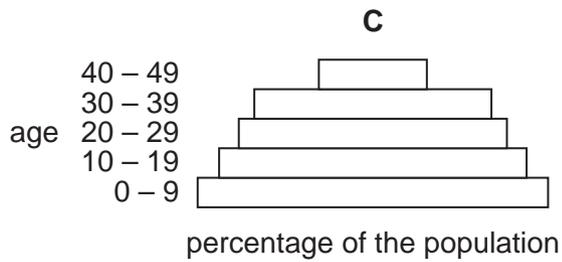
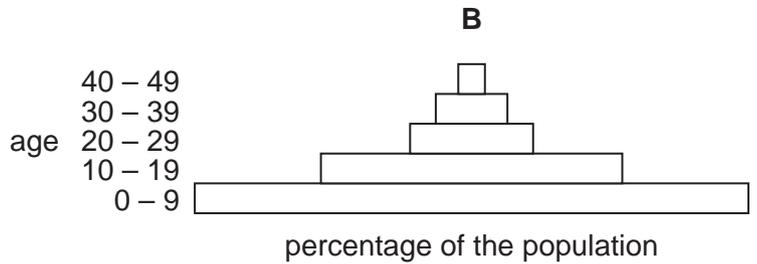
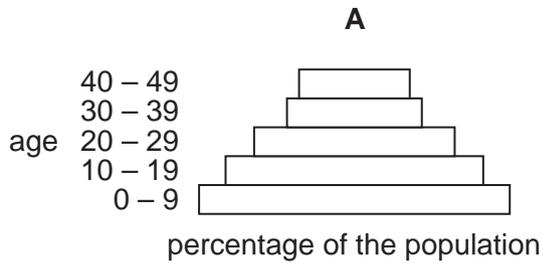
29 The diagram shows part of the water cycle.

Where is osmosis occurring?



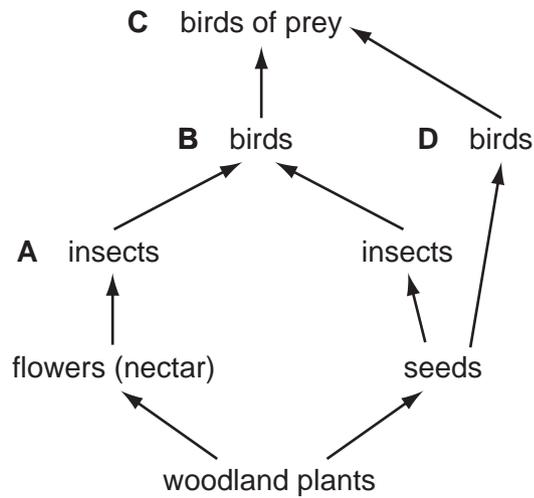
30 The diagrams show the current population sizes for people below 50 years of age in four different countries.

Which country will be likely to have the largest population of people 60 – 70 years of age in 20 years time?

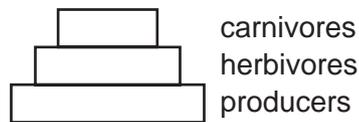


31 The diagram shows some food relationships in a woodland area.

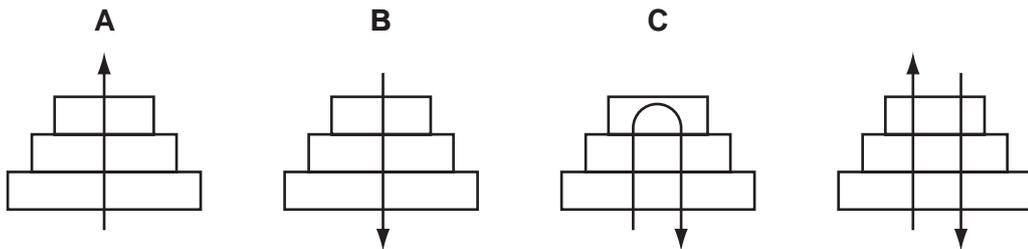
Which of the labelled animals are in competition with seed-eating insects for their food?



32 The diagram represents a pyramid of biomass within an ecosystem.

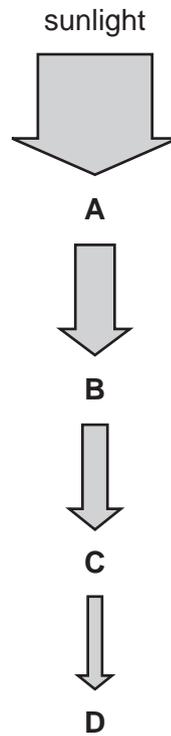


What shows the direction of energy flow through the pyramid?

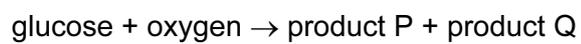


33 The diagram shows the flow of energy through four organisms in a food chain.

Which organism is a producer?



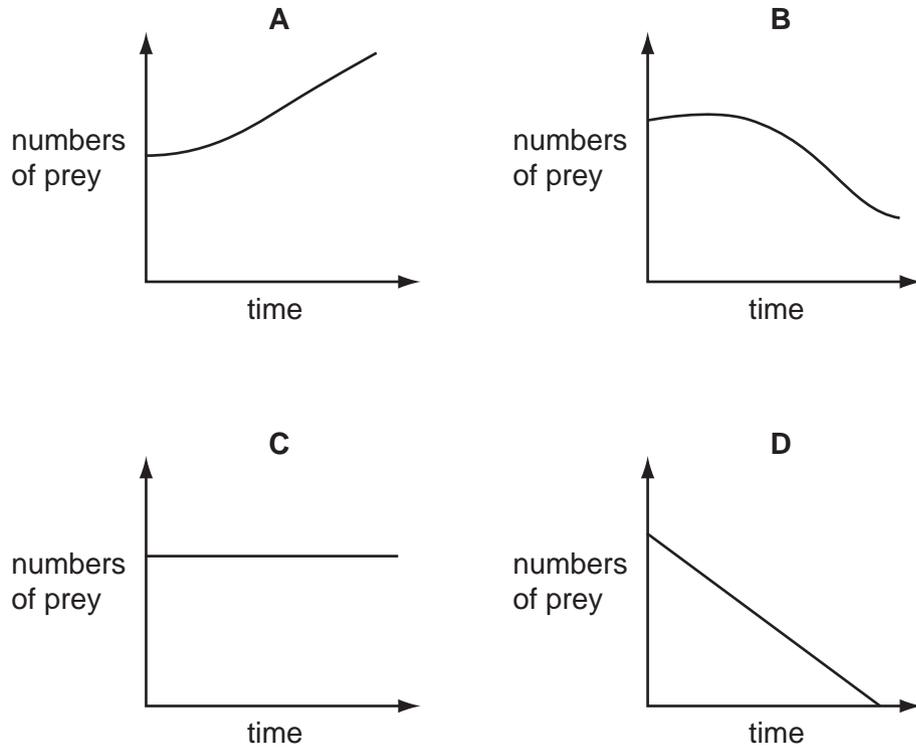
34 The equation shows the breakdown of glucose during aerobic respiration.



This process is a part of

- A the carbon cycle only.
- B the energy cycle only.
- C the carbon and water cycles.
- D the water cycle only.

35 Which graph shows the effect on the numbers of prey when their predators are removed?



36 The diagram shows a food chain.

A person sprays the rose-bush with pesticide.

Which organism does the person want to kill?



37 The diagram shows a food chain.



A disease reduced the number of consumer 2.

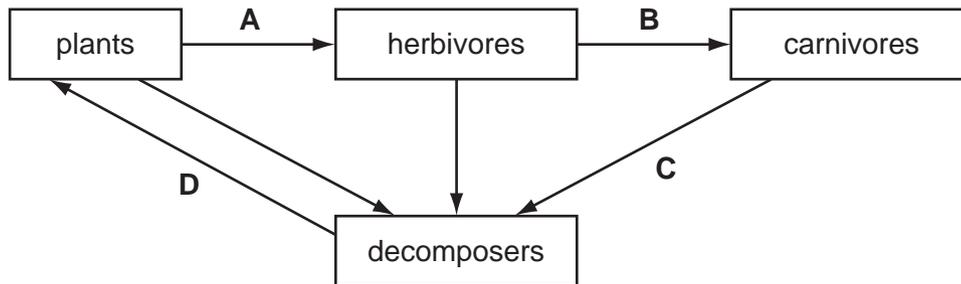
What effect would this be likely to have on the numbers of consumer 1 and consumer 3?

	consumer 1	consumer 3
A	+	+
B	+	-
C	-	+
D	-	-

key
 + = increase in number
 - = decrease in number

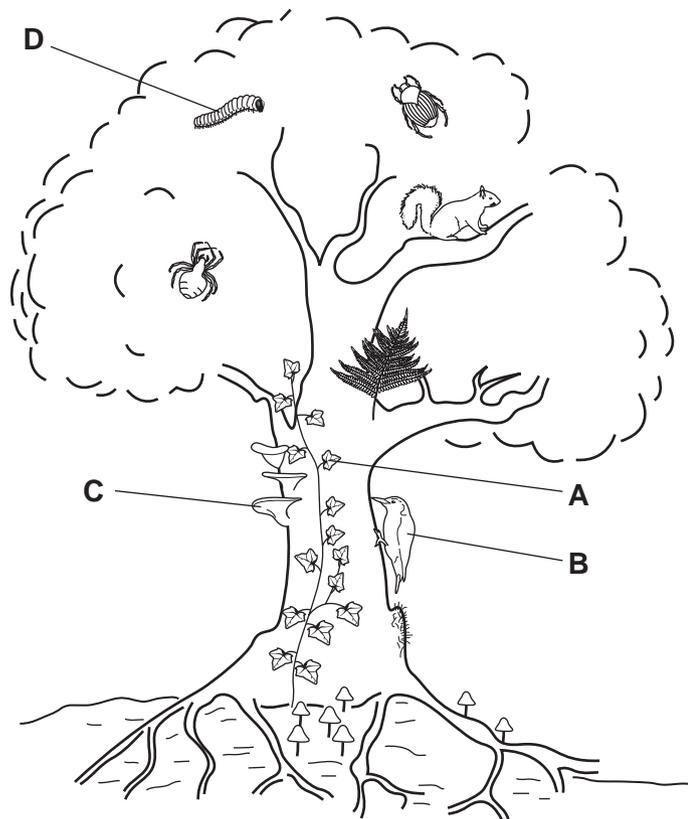
38 The diagram shows a food web.

Which arrow does **not** show the direction of energy flow?

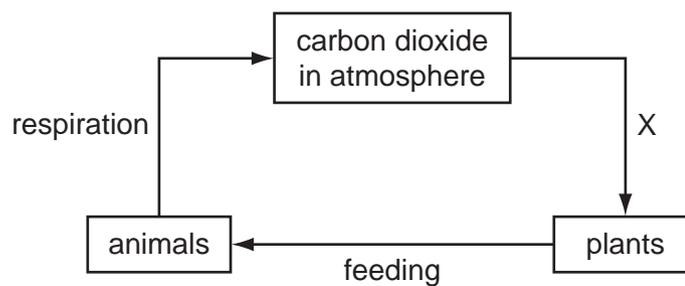


39 The diagram shows a tree and organisms associated with it.

Which labelled organism is a producer?



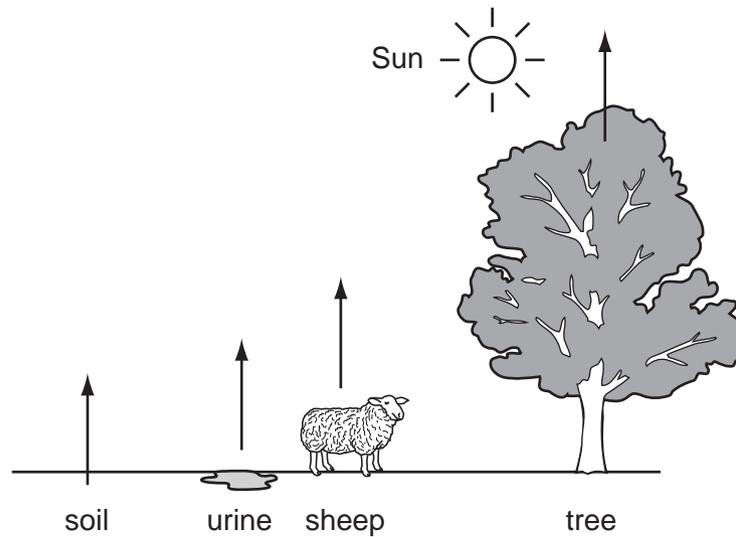
40 The diagram shows a simplified carbon cycle.



What is process X?

- A combustion
- B decay
- C excretion
- D photosynthesis

41 The diagram shows the release of a substance into the atmosphere from different sources.

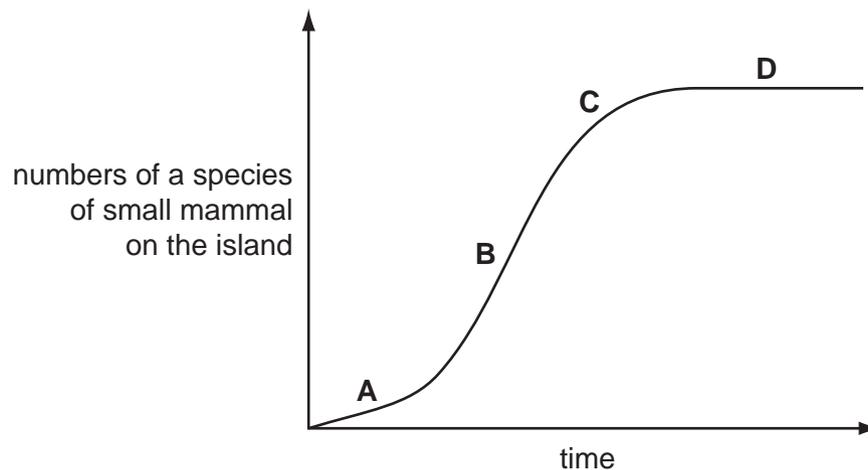


What is this substance?

- A carbon dioxide
- B oxygen
- C urea
- D water vapour

42 The graph shows the change in the numbers of a species of small mammal living on an island.

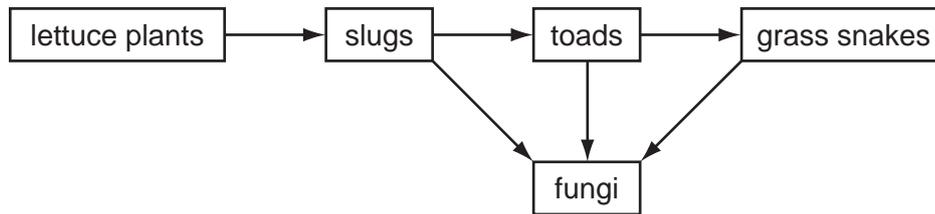
Which letter represents the phase where the population growth is slowing down?



43 What is an advantage of a short food chain?

- A A few producers can support a large number of consumers.
- B It is easier for consumers to find food.
- C Less energy is lost in the food chain.
- D Less food is required by the consumers.

44 Fungi are decomposers.

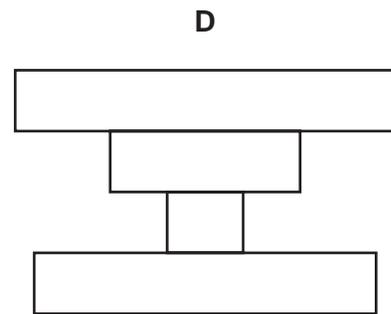
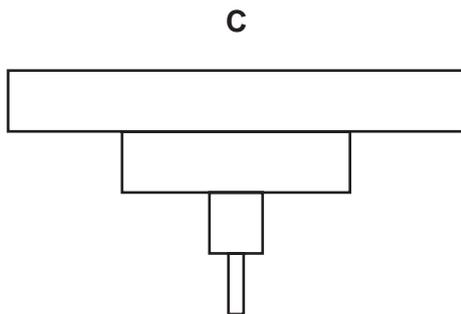
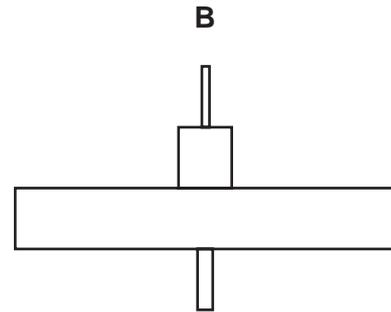
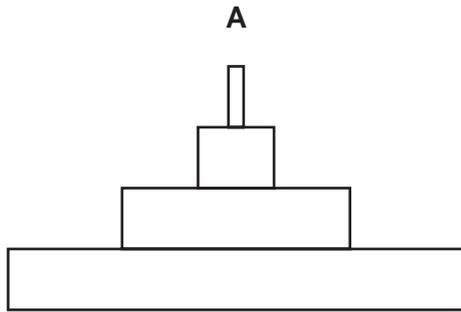


Why are they important in the food web?

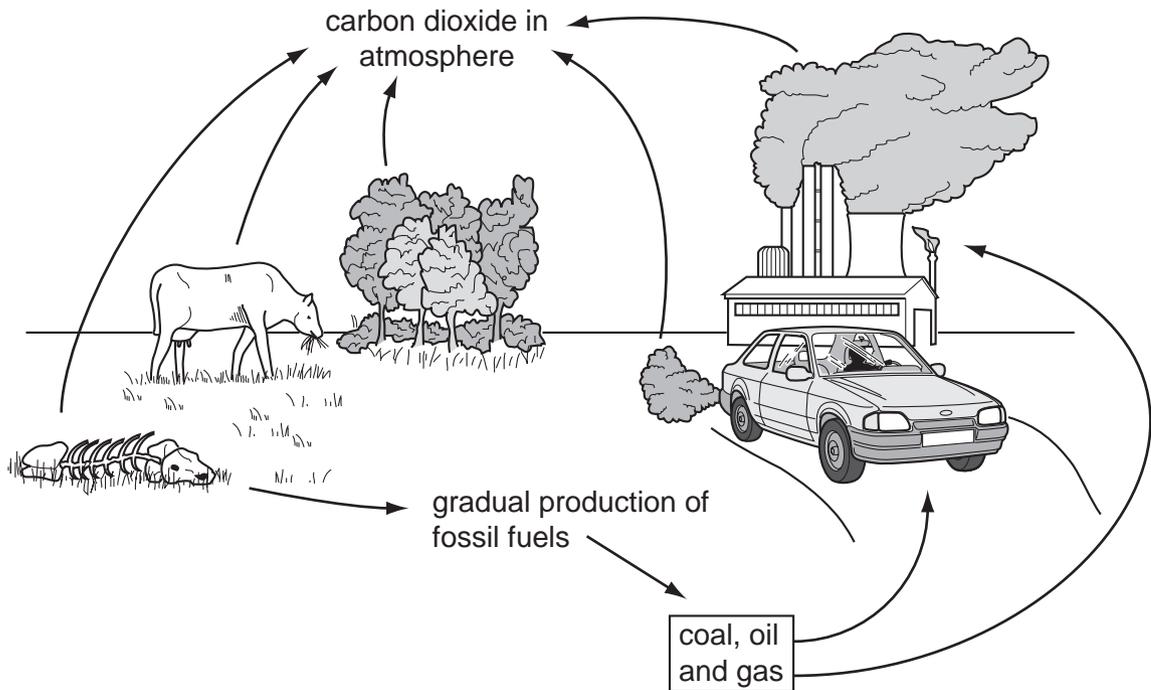
- A They provide food for snakes.
- B They control the numbers of toads.
- C They provide energy for plant growth.
- D They release minerals essential for plant growth.

45 A single tree is food for a large population of caterpillars. Several small birds eat the caterpillars. The small birds are eaten by a bird of prey.

Which is the pyramid of biomass?



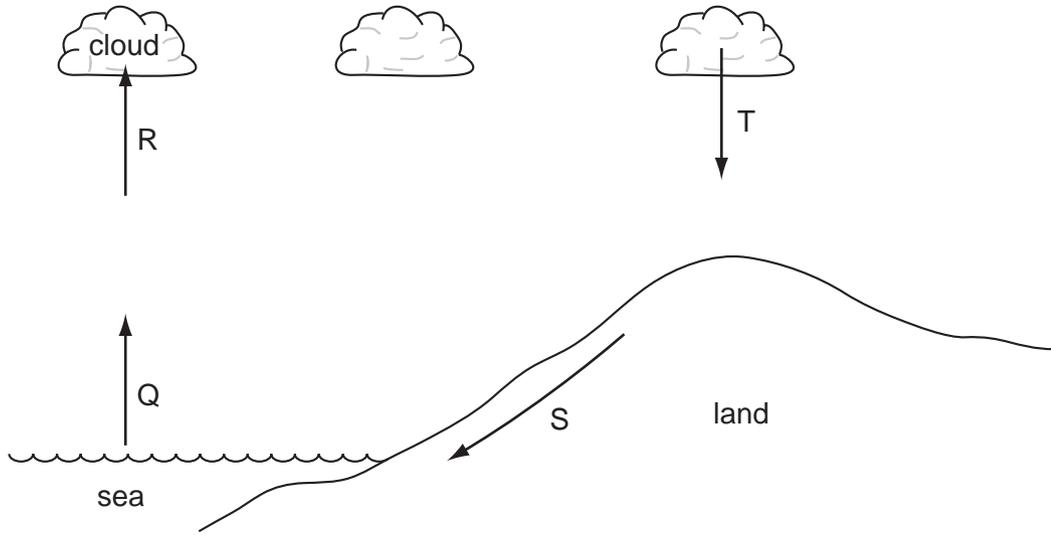
46 The diagram shows part of the carbon cycle.



Which process is missing from the diagram?

- A combustion
- B photosynthesis
- C respiration
- D transpiration

47 The diagram shows the water cycle. The arrows show four processes that take place during this cycle.

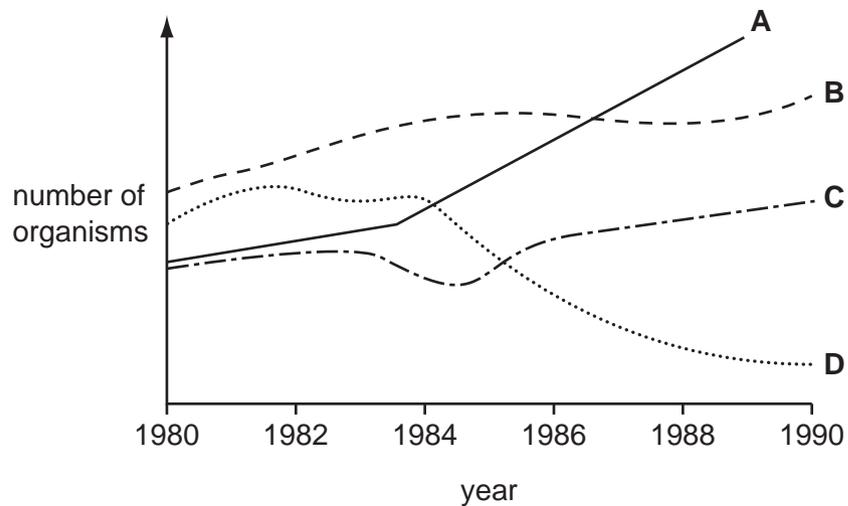


Which combination identifies these processes?

	condensation	evaporation	precipitation
A	Q		T
B	R		T
C	R		T
D	S		R

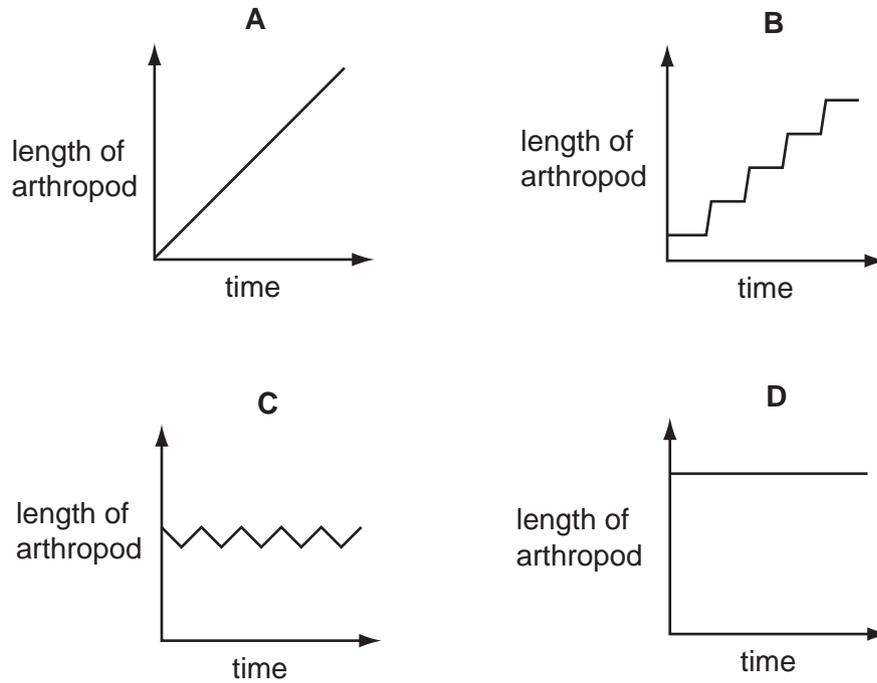
48 The populations of four organisms in a lake were measured between 1908 and 1990.

Which organism was affected by an outbreak of disease in 1984?

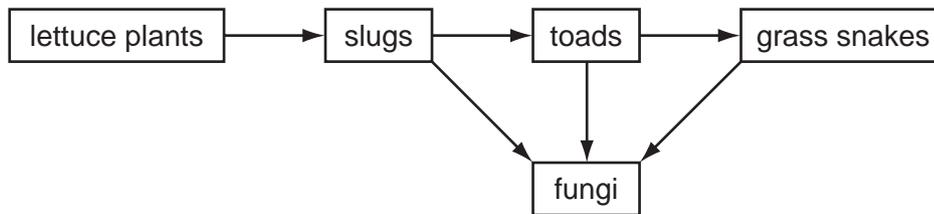


49 In arthropods, growth occurs only after the exoskeleton is shed and before the new one hardens.

Which graph shows a typical growth curve for an arthropod?



50 The diagram shows a food chain.



Which organisms are the producers?

- A grass snakes
- B lettuce plants
- C slugs
- D toads