KayScience Separate Science Tuition (9-1)

GCSE *Separate* Biology

Weeks 9-12

Online Tuition
Exam Question Workbook

KayScience

1. Describe the route taken by urine from the kidney until it leaves the body.

(3)

2. Describe how filtration takes place in the bowman's capsule.

(3)

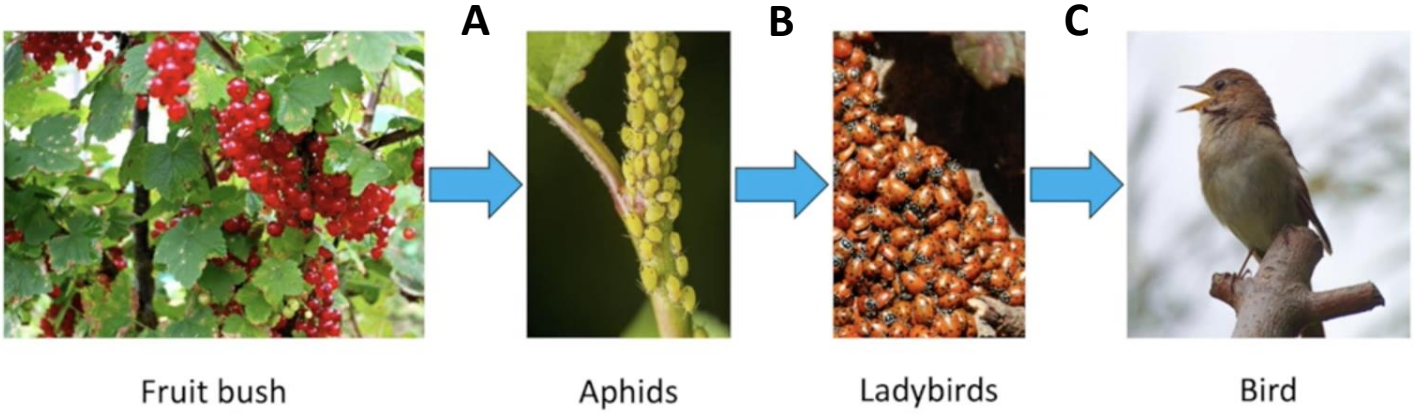
3. Explain what happens in the Loop of Henle

(6)

1. Explain how ADH regulates water reabsorption in the collecting duct. (6)

2. Explain how kidney dialysis removes urea but keeps other named blood components in the blood (6)

The Diagram shows a food chain in a garden.



1. State one consumer in the food chain above.

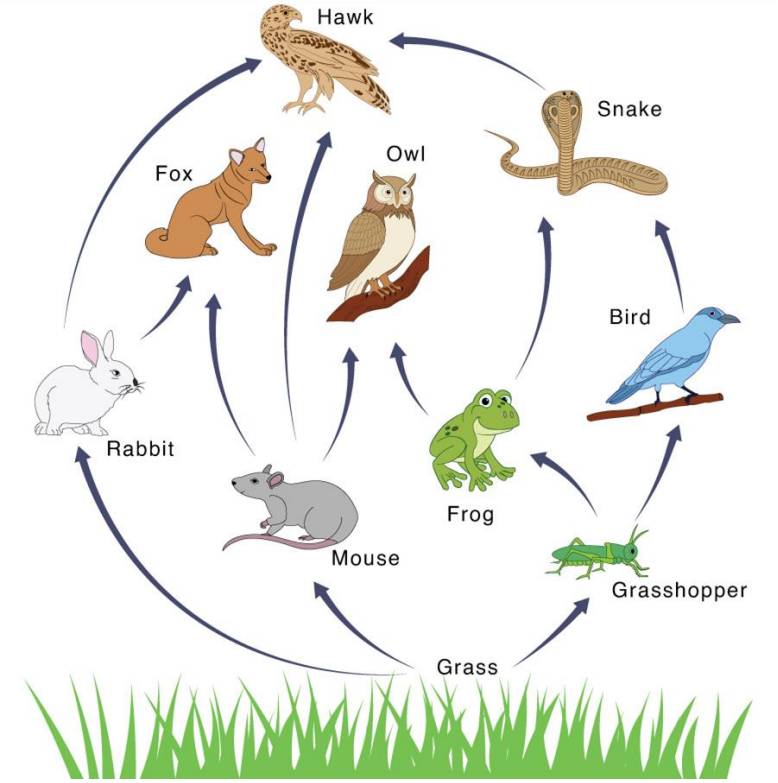
2. State one carnivore in the food chain above.

3. State the name of the primary consumer.

4. State the name of the organism at the second trophic level.=.

5. What do the arrows represent in a food chain?

6. A disease kills most of the ladybirds in the garden. Explain what happens to the numbers of birds and aphids.



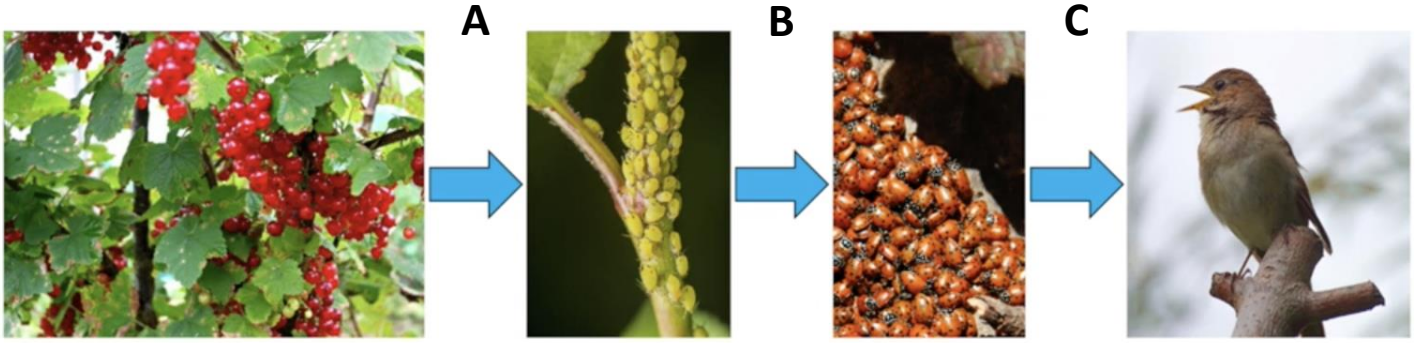
1. State a primary consumer and an organism in the third trophic level

2. State a top predator

3. What will happen to the population of grasshoppers if frog population decreases.

4. Explain how the food web will be affected if the number of snakes increase.

The Diagram shows a food chain in a garden.



1. Calculate the efficiency of energy transfer at A, B & C.

(a) .....

(b) .....

(c) .....

2. Draw a pyramid of biomass for the food chain below.

Grass → Rabbit → Fox

180 kg 60 kg 20 kg

1. Draw a pyramid of biomass for the food chain below.

Sunflower → Snail → Hedgehog
60kg 20kg 5kg

2. Explain why the biomass at each subsequent trophic level decreases along the food chain

1. Explain how temperature affects the rate of decay

(4)

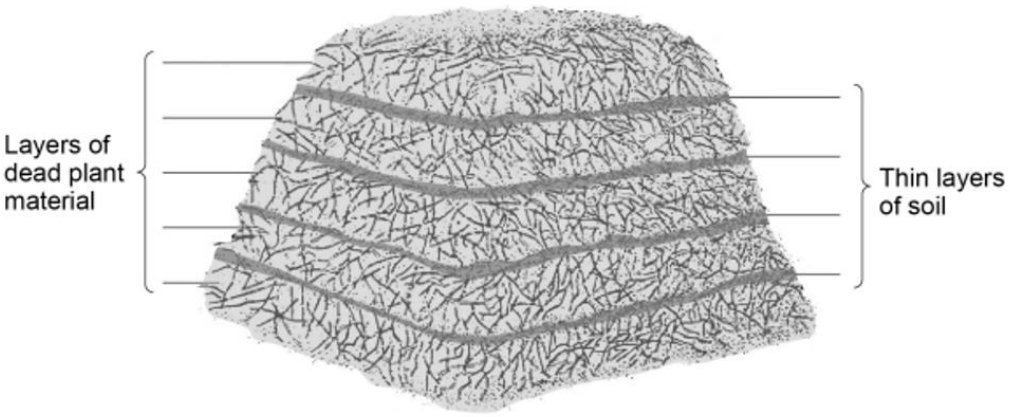
2. Explain how food can be prepared or stored to reduce the rate of decay

(6)

Decay occurs in a compost heap.

Figure 7 shows a compost heap.

Figure 7



Describe:

- how microorganisms in the layers of soil help to recycle chemicals in the dead plants
- how the chemicals are used again by living plants.

[6 marks]

1. A 6 kg organism died and after 4 weeks its biomass was 1 kg. Calculate the rate of decay. (2dp)
2. A 20 kg organism died and after 4 days its biomass was 19 kg. Calculate the rate of decay.
3. A 12 kg organism died and after 4 weeks its biomass was 7 kg. Calculate the rate of decay.
4. A 100 kg organism died and after 1 year its biomass was 45 kg. Calculate the rate of decay.
5. A 40 kg organism died and after 12 weeks its biomass was 20 kg. Calculate the rate of decay. (1dp)

1. Describe how monoclonal antibodies are produced.

(4)

2. Explain how monoclonal antibodies are used in pregnancy tests.

(6)

1. Explain how monoclonal antibodies are used in cancer drugs.

(4)