

## 7D Variation and classification

### Assessment for learning...year 7 (level 3-6)

Answer all questions:

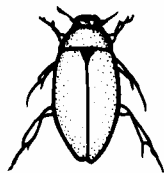
Total marks	29
Time allowed	25 mins.

#### Question 1:

The animals shown below live in different parts of a river.



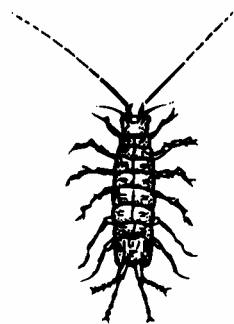
A



B



C

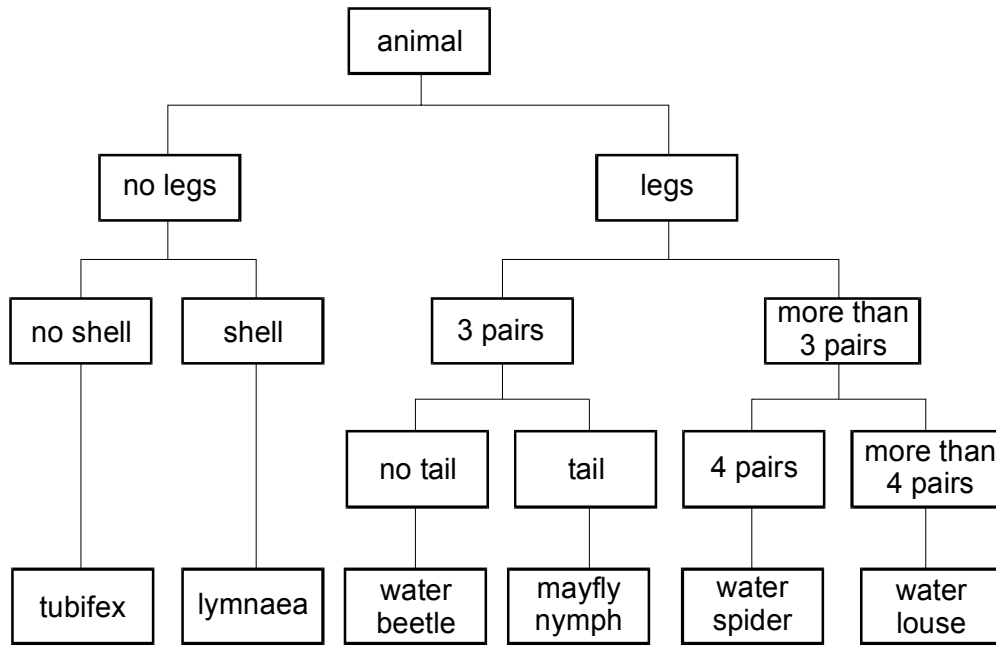


D



E

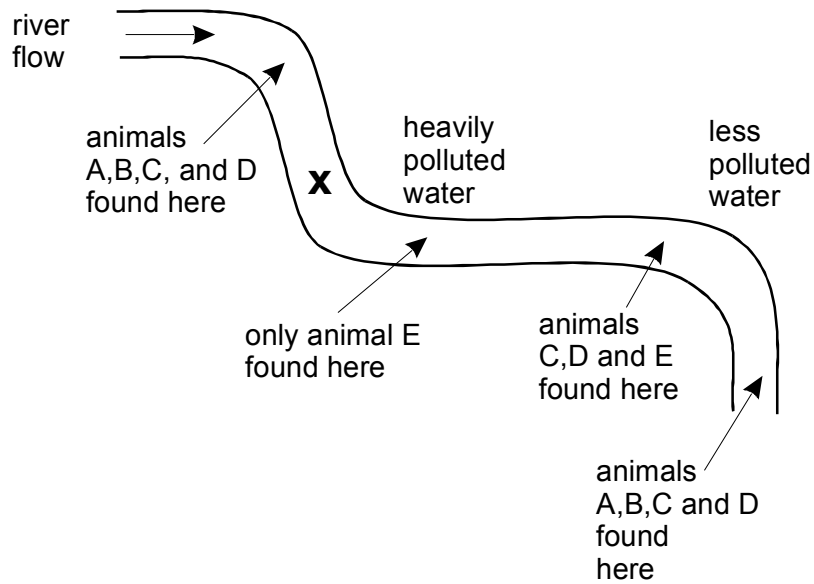
(a) Use this key to identify animals **A**, **B** and **C**.



- (i) Animal **A** is a .....
- (ii) Animal **B** is a .....
- (iii) Animal **C** is a .....

3 marks

(b) The diagram shows a river. Sewage pollutes the river at **X**. The amount of pollution gets less as you go down the river from **X**. The animals A, B, C, D and E were found living in the river at the places shown.



(i) Which animal survives best in polluted water? Give the **letter** of the animal.

.....

1 mark

(ii) **Two** of the animals cannot live in polluted water. Give the **letters** of these two animals.

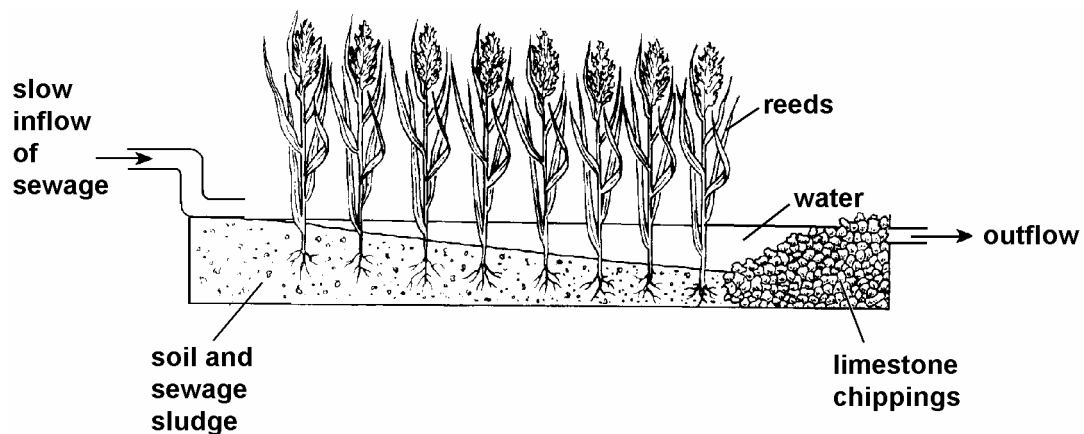
..... and .....

2 marks

Maximum 6 marks

### Question 2:

A new way of treating sewage is being tried out in Norfolk. This is shown in the diagram below.



Sewage runs at a slow, steady rate through specially built reed-beds. The reeds absorb oxygen from the air and pass it through their roots into the water. Bacteria in the water use this oxygen and break down the sewage. The reeds grow rapidly.

(a) One of the substances present in sewage is urea,  $\text{CO}(\text{NH}_2)_2$ . Which element in urea encourages the reeds to grow rapidly?

.....

1 mark

(b) At the end of the summer, the reeds are cut down and can be used for thatching roofs.

Give **one** commercial or business reason and **one** environmental reason why the reeds are left until the end of the summer before they are cut.

commercial or business reason .....

.....

1 mark

environmental reason .....

.....

1 mark

(c) Bacterial action makes water acidic. Before the water leaves the reed-bed, it is passed through a bed of limestone chippings.

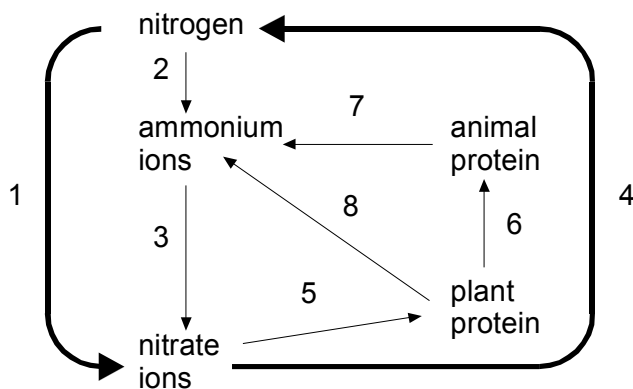
What is the purpose of the limestone chippings?

.....

.....

1 mark

(d) The diagram shows a simplified nitrogen cycle. The arrows show parts of the cycle. Each arrow is numbered.



(i) Bacteria which decompose sewage in the reed-bed are involved in three parts of the cycle. Give the number of **one** of these parts.

.....

1 mark

(ii) In part 4 of the cycle, nitrate ions ( $\text{NO}_3^-$ ) are reduced to nitrogen ( $\text{N}_2$ )  
Explain why this is unlikely to happen under the conditions in the reed- bed,  
described earlier.

.....  
.....

1 mark

(iii) Give the number of **one** part of the cycle which does **not** involve bacteria.

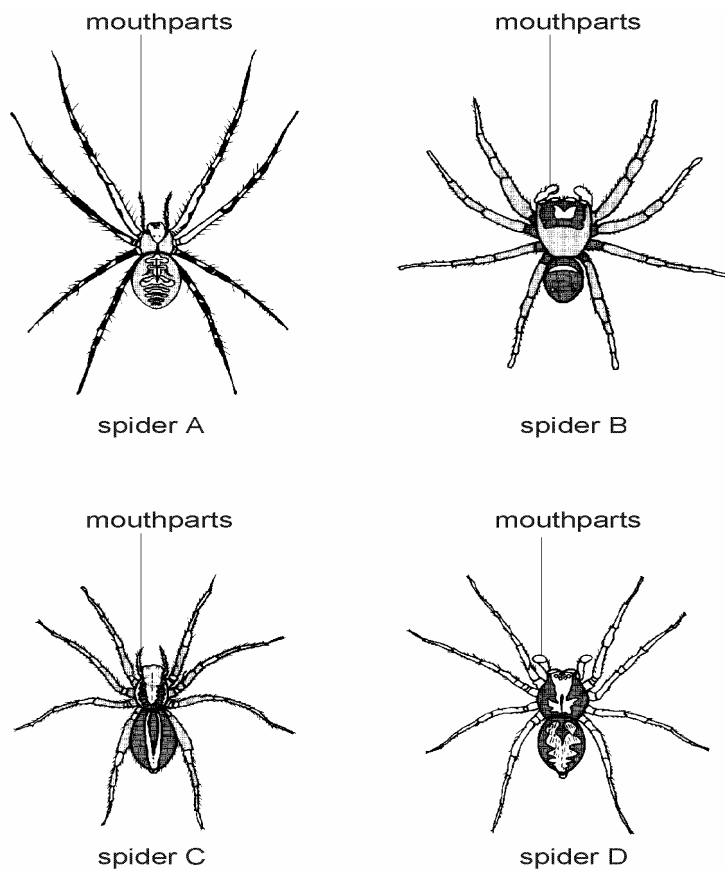
.....

1 mark

Maximum 7 marks

**Question 3:**

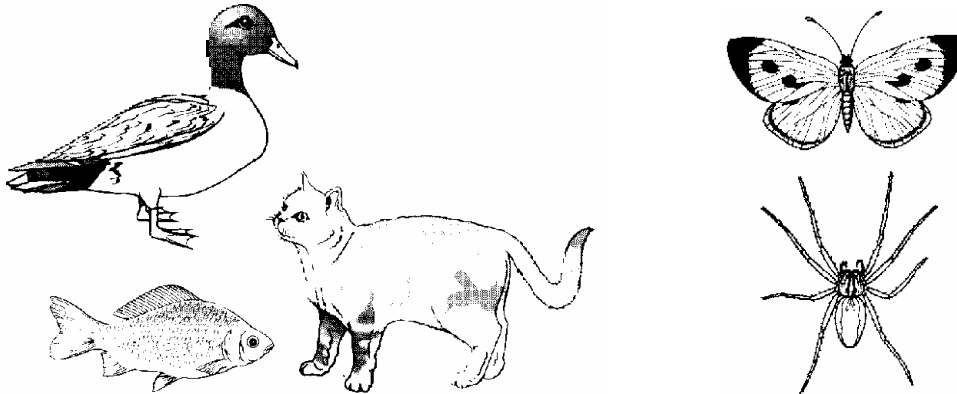
The drawings show four different kinds of spider.





Kate, Tom, Dylan and Rania sorted some animals into groups.

(a) Here are Kate's two groups.

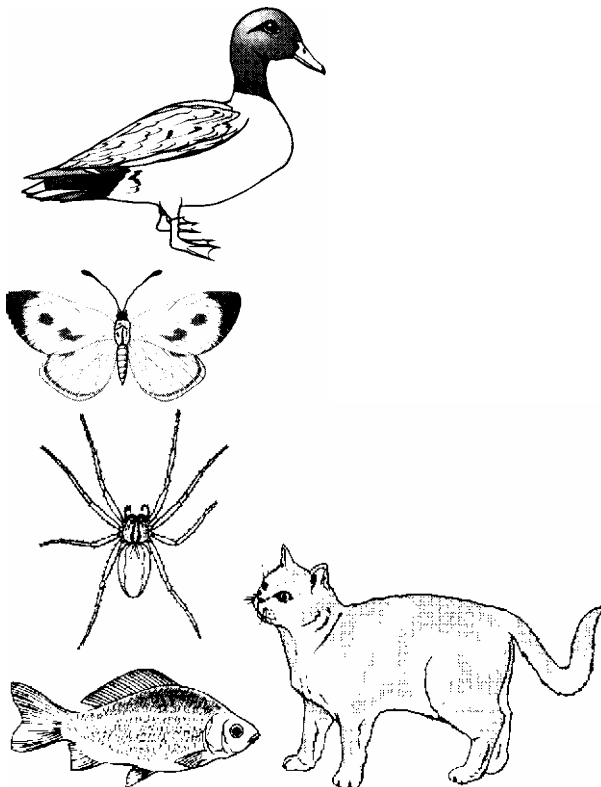


How did Kate sort the animals into groups?

Give the number from the four ways in the box. ....

1 mark

(b) Here are Tom's two groups.

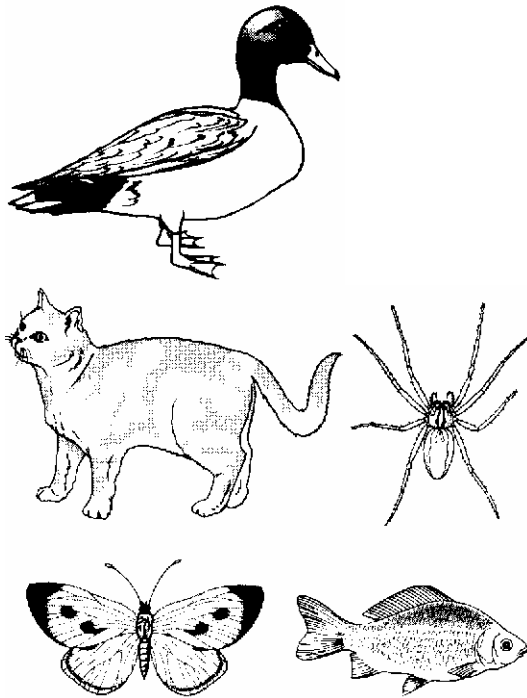


How did Tom sort the animals into groups?

Give the number from the box. ....

1 mark

(c) Here are Dylan's two groups.

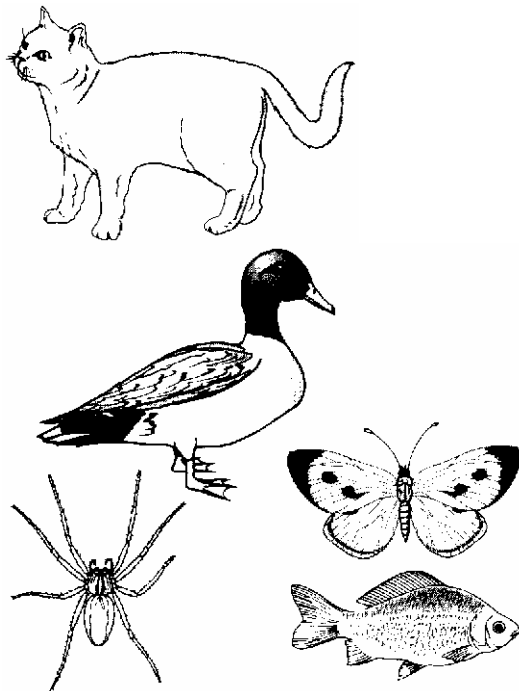


How did Dylan sort the animals into groups?

Give the number from the box. ....

1 mark

(d) Here are Rania's two groups.



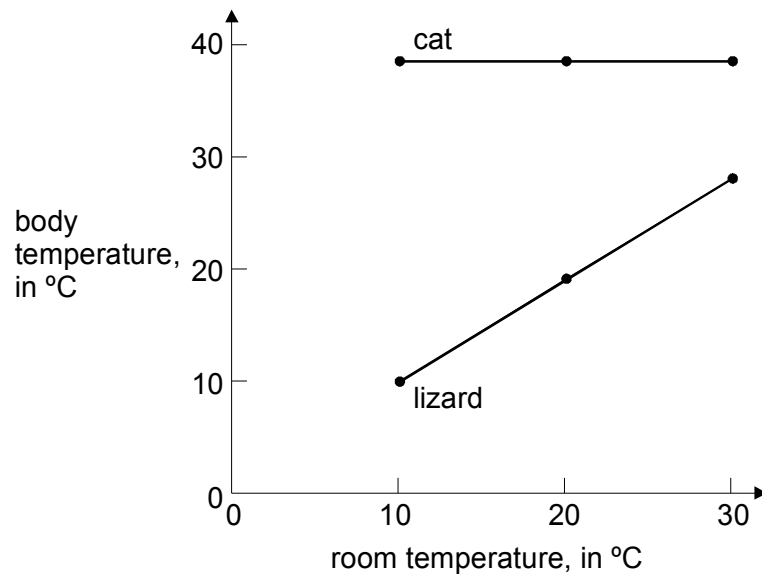
How did Rania sort the animals into groups?

Give the number from the box. ....

1 mark  
Maximum 4 marks

**Question 5:**

A vet measured the body temperatures of a cat and a lizard at different room temperatures. She drew two graphs from her results.



(a) The temperature of the room rises. What happens to the body temperatures of the lizard and the cat?

(i) lizard

.....

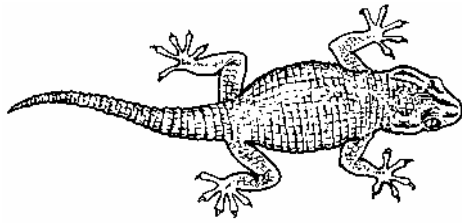
1 mark

(ii) cat

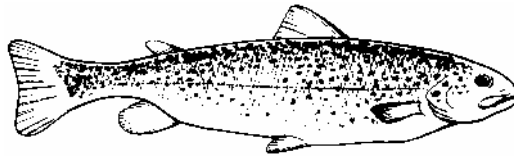
.....

1 mark

(b) Each of the drawings below shows an animal from a different group.



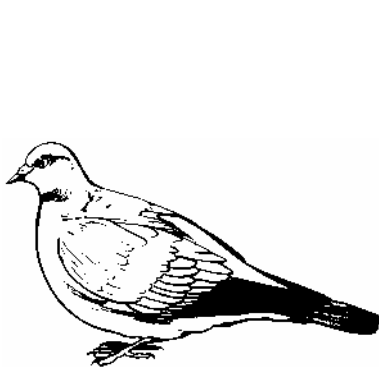
lizard  
(reptile)



trout  
(fish)



frog  
(amphibian)



pigeon  
(bird)



cat  
(mammal)

(i) The cat's fur traps warm air next to its body. In the drawings above, which other animal can trap warm air next to its body?

.....

1 mark

(ii) The cat is a mammal. Its body is covered with fur.

Give one other fact about cats which shows they are mammals.

.....

.....

1 mark

(c) The five groups of vertebrates are:

**fish   amphibians                  reptiles                  birds                  mammals**

(i) Which **two** groups have bodies covered with scales?

1. ....

2. ....

2 marks

(ii) Which **two** groups lay eggs in water?

1. ....

2. ....

2 marks

Maximum 8 marks