

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use Total Task 1



General Certificate of Education
Advanced Level Examination
June 2011

Biology

BIO6X/PM1

**Unit 6X A2 Externally Marked Practical Assignment
Task Sheet 1**

To be completed before Task Sheet 2.

For submission by 15 May 2011

For this paper you must have:

- a ruler with millimetre measurements
- a calculator.

Turning behaviour in maggots

Introduction

You are going to investigate the behaviour of maggots.

In Task 1 you will investigate whether maggots turn left or right more often when given the choice.

Materials

You are provided with

- a maze printed on card
- scissors
- glue
- 10 maggots
- 5 cotton wool buds
- a plastic teaspoon

You may ask your teacher for any other apparatus you require.

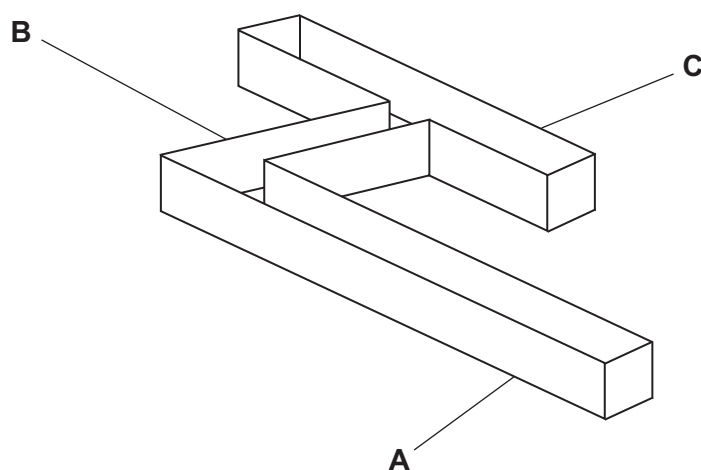
You may ask for help in constructing the maze (Steps 1–4 of the method).

Outline method

Read these instructions carefully before you start your investigation.

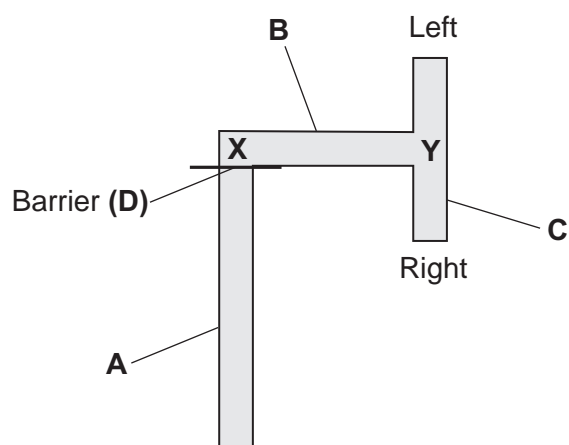
1. Cut out pieces **A**, **B** and **C** from the card by cutting along all the solid lines.
2. Fold along the dashed and dotted lines, keeping dashes on the inside and dots on the outside.
3. Glue the tabs to form the maze shown in **Figure 1**.

Figure 1



4. Cut out the barrier (piece **D**) and place it at the position shown in **Figure 2**.

Figure 2



5. Place a maggot at point **X** using the plastic teaspoon.
 6. Record in the table provided whether the maggot turns left or right when it reaches the junction at **Y**.

Maggot number	Direction of turning
1	
2	
3	
4	
5	

7. Remove the maggot from the maze.
 8. Wipe the inside of the maze with a cotton wool bud.
 9. Repeat steps 5 to 8 until you have results for 5 maggots.
 10. If a maggot stops moving, remove it from the maze and carry out another trial.

Turn over ►

Questions on Task 1

Answer **all** questions in the spaces provided.

1 You were told to wipe the inside of the maze between trials. Suggest why.

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

(2 marks)

2 Light intensity affects the behaviour of maggots. Describe how you might use a lamp to minimise the effect of changes in light intensity. Explain your answer.

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

(2 marks)

3 Temperature also affects the behaviour of maggots. Describe how you would find out if there were temperature changes that could have affected the behaviour of maggots in your investigation.

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

(2 marks)

4 Is it possible to conclude from your data that maggots turn left or right at random when given the choice? Explain your answer.

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

(2 marks)

5 The maggots used for the investigation should be as similar as possible. Describe **two** ways in which the maggots should be similar.

1

.....

2

.....

(2 marks)

10

END OF TASK 1

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