

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use Total Task 1



General Certificate of Education  
Advanced Level Examination  
June 2014

## Biology

## BI06X/PM1

Unit 6X A2 Externally Marked Practical Assignment  
Task Sheet 1

To be completed before Task Sheet 2.

For submission by 15 May 2014

**For this paper you must have:**

- a ruler with millimetre measurements
- a calculator.

## Task 1

### Introduction

You are going to investigate the movement of maggots.

In Task 1, you will investigate the number of times a maggot changes direction as it moves off a piece of filter paper in ordinary laboratory light and in reduced light.

### Materials

You are provided with:

- 3 maggots
- cardboard cover
- 3 filter papers
- access to a bowl of water at room temperature
- plastic teaspoon
- container for holding maggots after each trial.

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

### Method

**Read these instructions carefully before you start your investigation.**

1. Soak a piece of filter paper in the water. Remove it and shake it gently to remove excess water. Lay this paper flat on the workspace in front of you.
2. Place a maggot at the centre of the filter paper using a plastic teaspoon.
3. Count how many times the maggot changes direction before it moves off the filter paper. Record the result in **Table 1**.
4. Remove the maggot, turn the piece of filter paper over and replace the maggot at the centre of the filter paper.
5. Place the cardboard cover over the filter paper with the small observation hole uppermost. This reduces the intensity of light falling on the maggot.
6. Count how many times the maggot changes direction before it moves off the filter paper. Record your result in **Table 1**.
7. Remove the maggot and discard the filter paper.
8. Repeat steps 1 to 7 until you have results for 3 maggots.

If a maggot stops moving, remove it and repeat the trial with another maggot.

**You will need to decide for yourself:**

- how to determine the centre of the filter paper
- how to determine when a maggot changes direction.

---

**Recording your results**Record your results in **Table 1**.**Table 1**

<b>Conditions</b>	<b>Number of times the maggot changes direction before moving off the filter paper</b>		
	Maggot 1	Maggot 2	Maggot 3
Ordinary laboratory light			
Reduced light			

**Turn over for the questions****Turn over ►**

**Questions on Task 1**

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

**1** The filter paper the maggot was placed on was damp.  
Suggest why this was important. **[1 mark]**

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

**2** You were told to place a maggot at the centre of the filter paper (step 2 and step 4).

**2 (a)** Why was it important to place the maggot at the centre of the filter paper? **[1 mark]**

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

**2 (b)** How did you determine the centre of the filter paper? **[1 mark]**

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

**3** You used a teaspoon to place a maggot on the filter paper (step 2).  
It would not have been appropriate to use forceps for this. Suggest why. **[1 mark]**

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

**4** You were told to decide for yourself when the maggot had changed direction. Describe what you counted as a change of direction. **[1 mark]**

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

**5** You were told to turn the filter paper over before replacing the maggot (step 4). Suggest why this was important. **[1 mark]**

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

**6** In this task, it is an advantage to record the number of changes of direction made by the same maggot in ordinary laboratory light and in reduced light. Explain why it is an advantage to use the same maggot. **[1 mark]**

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

**7** In brighter light, maggots usually make fewer changes of direction and thus reach the edge of the filter paper sooner. Suggest and explain the advantage of this behaviour to the maggot. **[2 marks]**

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

**END OF TASK 1**

**There are no questions printed on this page**

**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**

**There are no questions printed on this page**

**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**

**There are no questions printed on this page**

**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**