



Missouri

End-of-Course Assessment

Biology

Session II



Missouri Department of Elementary and Secondary Education
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Directions to the Student

Today you will be taking Session II of the Missouri Biology Test. This is a test of how well you understand the course level expectations for Biology.

There are several important things to remember:

- 1** Read the performance event carefully and think about how to answer the questions.
- 2** Show all of the work that you did to answer the question with a number 2 pencil. If a box is provided, make sure all of your work is in the box. If a line is provided to write your answer on, be sure your answer is on the line.
- 3** If you do not know the answer to a question, skip it and go on. You may return to it later if you have time.
- 4** If you finish the test early, you may check over your work.
- 5** There is not an answer sheet for this session of the test. Write or mark your answers directly in your test book with a number 2 pencil.

Tiny Bubbles

Two students were doing an investigation in which they studied the effect of light intensity on the rate of photosynthesis of elodea, an aquatic plant. To determine the rate of photosynthesis, they counted the number of bubbles of oxygen (O_2) produced in the water. The results of their experiment are shown in the data table.

Data Table 1

Light Intensity (Candelas*)	Rate of Photosynthesis (Bubbles per Min)
0	0
400	1
800	2
1200	3
1600	4
2000	6
2400	6
2800	6
3200	6
3600	6
4000	6

*Candelas: The SI base unit of light (luminous) intensity.

1. What is a testable question or problem that is the basis for this investigation?

2. Write an appropriate hypothesis for this investigation.

3. Identify the independent variable for this investigation.

4. Identify the dependent variable for this investigation.

5. Identify two variables, other than the one investigated, that could have an effect on the rate of photosynthesis.

1. _____

2. _____

6. Why is it important to hold some conditions constant during an investigation?

7. Identify two factors that should be held constant for this investigation.

1. _____

2. _____

8. Identify three pieces of laboratory equipment necessary to conduct this investigation.

1. _____

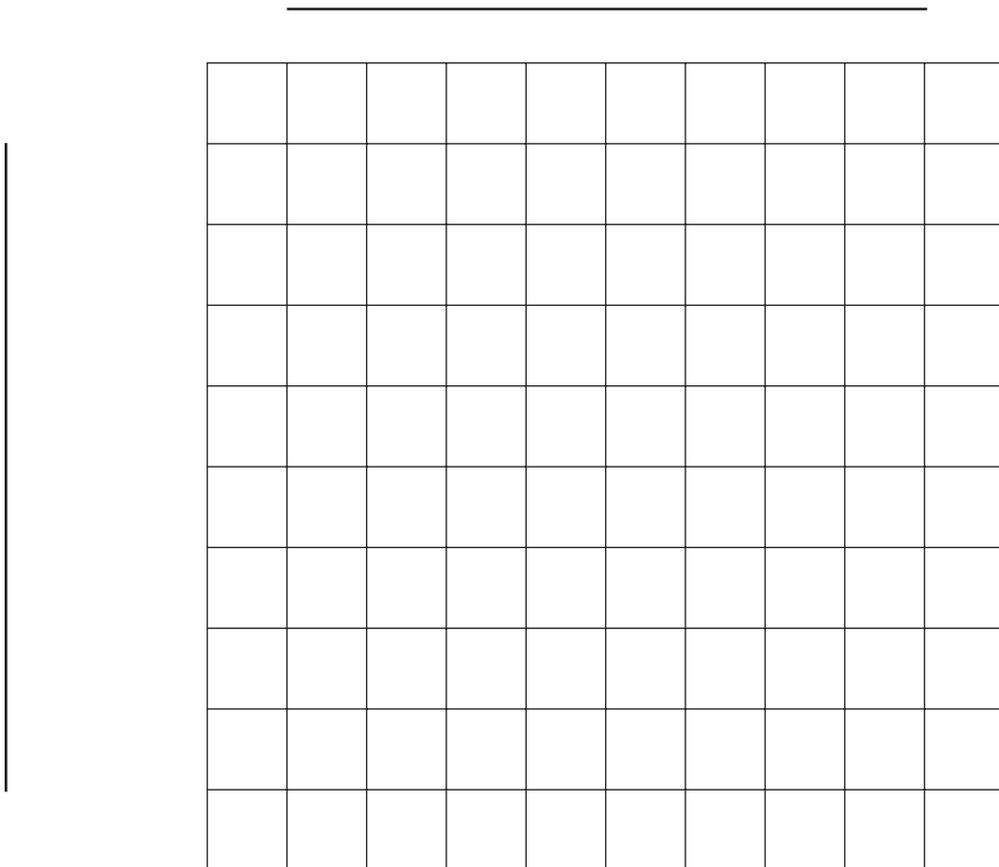
2. _____

3. _____

9. Use the data from Data Table 1 to construct a line graph on the grid below. Be sure to provide:



- an appropriate title
- labeled axes with appropriate units
- appropriate number scales
- correctly plotted data



10. Describe a procedure that includes at least three essential steps that a student will need to follow in order to conduct this investigation. The procedure must be written so that another student could clearly follow your instructions and successfully complete the investigation.

1. _____

2. _____

3. _____

11. Based on the data in the table, predict what the rate of photosynthesis would be at 4400 candelas.

Released Form