



## Honors Biology I Proficiency Test

Initial Date: Wednesday, May 5 from 3:30-5 p.m.

Makeup Date: Wednesday, May 12 from 4-4:30 p.m.\*

### Eligibility and Test Information:

- This test is for incoming freshmen who wish to enroll in Honors Biology. All students are eligible to take this test, however we recommend it for students who meet the following criteria:
  - Scored at or above the 75% percentile on the composite section of the HSPT (if scores are available)
  - Have a strong interest in science.
- The Honors Biology test will take one hour (additional time is scheduled for giving instructions and getting settled). Students also taking the Honors English and/or Honors World Proficiency test should expect to spend one hour and fifteen minutes testing for multiple exams.

### Topics include:

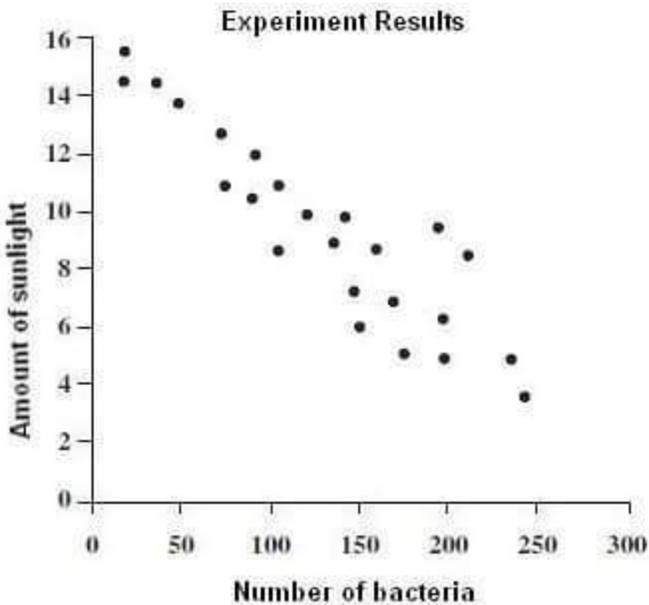
1. Students will be asked to read a science article, discern what is important, and articulate what the article is about.
2. The multiple choice portion assesses basic science skills including: reading a graph, converting units given a conversion factor, looking at a data table and determining what the data says, reading a paragraph and being able to label what is a conclusion, hypothesis, or data, and finally more reading comprehension. (No calculator needed.)

*\*Please make every effort to test on one of these dates. If you are unable to, please contact Dr. Duwel, [aduwel@presentationhs.org](mailto:aduwel@presentationhs.org).*

## Honors Biology I Proficiency Test Practice Questions



Updated 3/17/2021



1. According to the table above, does the increase of sunlight increase or decrease the number of bacteria present?
  - a. increase
  - b. decrease
2. If I needed to have a bacteria number of 150, what would be the best range for the amount of sunlight?
  - a. 4-6 hours
  - b. 6-8 hours
  - c. 8-10 hours
  - d. more than 10 hours

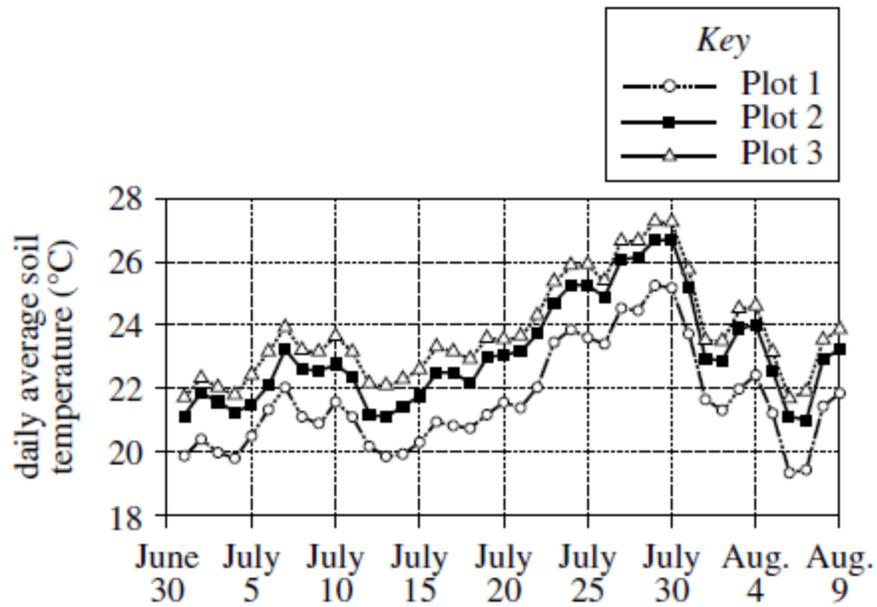


Figure 2

3. Using the graph above, what is the average soil temperature on July 30<sup>th</sup>?
- a. 21 degrees C
  - b. 24 degrees C
  - c. 26 degrees C
  - d. 23 degrees C



**Read the passage and answer the questions that follow:**

Unmanned spacecraft taking images of Jupiter's moon, Europa, have found its surface to be very smooth with few meteorite craters. Europa's surface ice shows evidence of being continually re-smoothed and reshaped. Cracks, dark bands, and pressure ridges (created when water or slush is squeezed up between 2 slabs of ice) are commonly seen in images of the surface. Two scientists express their views as to whether the presence of a deep ocean beneath the surface is responsible for Europa's surface features.

*Scientist 1*

A deep ocean of liquid water exists on Europa. Jupiter's gravitational field produces tides within Europa that can cause heating of the subsurface to a point where liquid water can exist. The numerous cracks and dark bands in the surface ice closely resemble the appearance of thawing ice covering the polar oceans on Earth. Only a substantial amount of circulating liquid water can crack and rotate such large slabs of ice. The few meteorite craters that exist are shallow and have been smoothed by liquid water that oozed up into the crater from the subsurface and then quickly froze. Jupiter's magnetic field, sweeping past Europa, would interact with the salty, deep ocean and produce a second magnetic field around Europa. The spacecraft has found evidence of this second magnetic field.

*Scientist 2*

No deep, liquid water ocean exists on Europa. The heat generated by gravitational tides is quickly lost to space because of Europa's small size, as shown by its very low surface temperature ( $-160^{\circ}\text{C}$ ). Many of the features on Europa's surface resemble features created by flowing glaciers on Earth. Large amounts of liquid water are not required for the creation of these features. If a thin layer of ice below the surface is much warmer than the surface ice, it may be able to flow and cause cracking and movement of the surface ice. Few meteorite craters are observed because of Europa's very thin atmosphere; surface ice continually sublimates (changes from solid to gas) into this atmosphere, quickly eroding and removing any craters that may have formed.

1. Describe the surface of Europa.
2. How do the two scientists' views differ?
3. How are the two scientists views similar?



**Answers:**

Multiple Choice

1. Answer: Decrease. When sunlight is at the maximum, there are only 50 bacteria however, when it is closer to zero, the number of bacteria increases to 250.
2. Answer: B Most of the data points fell during this duration of time on the y-axis
3. Answer: C - average of the 3 plots is most closely 26 degrees on July 30<sup>th</sup>

Passage:

1. Answer: Europa is covered in an ice layer that has cracks and dark bands
2. Answer: Scientist 1 believes there are deep oceans possible on Europa and Scientist 2 believes that there might be water, but it is not deep.
3. Answer: The two scientists agree that there is water on Europa. They also agree there are a few meteorite craters.