

Biology Honors Summer Assignment 2016-2017

Maintaining good study habits and keeping the brain active over the summer is important for our Honors science students. WRHS Honors Biology courses are fast paced and rigorous, with instruction beginning from the first day of school. We have created this summer assignment to get the students thinking critically about Biology in preparation for their scientific journey in the year ahead. This assignment will be collected for a grade on the 2nd day of school (August 16th). Students will take a quiz on the flashcard terms on August 16th in class.

Students who do not complete the summer assignment over break will be given an extension until the end of the first week of school (8/19) to complete all components of the summer assignment. Students whose summer projects are turned in on the due date of August 16th will receive a “pass” good for use during 1st quarter, to be determined by each teacher to fit their classroom. (examples: Free homework assignment, quiz retake, etc.) AND be exempt from the “make-up project”. ALL students will be expected to take the Scientific Process quiz on 8/16, as these are terms/concepts that were reviewed in the middle school curriculum and are required “skills” in High School Science. Completing the summer project will help review those concepts and thus is strongly encouraged!

If you have any questions while you are working on this assignment please feel free to email one of the biology teachers. Please allow 72hr for a response- we are trying to enjoy summer too!

Mr. Charneske- dcharnes@pasco.k12.fl.us

Ms. Diepholz- jdiephol@pasco.k12.fl.us

Mr. Winslett- bwinslet@pasco.k12.fl.us

1. Decoding the Scientific Language – Create a set of flashcards using the word parts given in the table. Flashcards should be in a Ziploc bag with your name on the front of it when turned in.
2. Ecology Research Paper – Research a current environmental issue.
3. Science Research Project – Start to narrow down your focus for your Semester 1 Science Research Project.

Decoding the Scientific Language – Part 1

These flashcards must be on index cards with the word on one side and the meaning on the other. Include an “example” science term on the definition side for each card.

Scientific method/process

Hypothesis

Law

Theory

Data

Observation

Quantitative

Data

Homeostasis

Interdependence

Qualitative

Data

Abiotic factors

Biotic factors

Biodiversity

Independent Variable

Dependent Variable

Control

Constant

Ecology Research Paper – Part 2

One of our first units in Biology is a critical look at the interrelationships between organisms and organisms and their environment. For this part of your summer assignment, you will answer the following question: *How are humans affecting the natural world?* In order to answer this question, you will be researching current environmental issues and will write a research paper focusing on one of the following topics:

1. Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.
2. Explain the effect of climate change, human activity and the introduction of invasive, non-native species on biodiversity.
3. Define sustainability. Identify 2 technological innovations that increase sustainability and explain how they solve an environmental problem.

The paper must meet these requirements in order to receive full credit:

1. 500 words minimum in MLA format
2. Cite at least 3 sources in MLA format
3. No longer than 3 pages

Science Research Project – Part 3

Your Driving Question is the question you will be attempting to answer through your Research Project. This statement should be broad enough that it allows you to generate your own Research Project, but specific enough to ensure that you can be focused with your research. Below are some Driving Questions from previous freshman students who participated at the Regional, State, and International Level.

- How can we reduce the amount of drag on rockets in the atmosphere?
- Is it possible to reduce the impact force of a soccer ball?
- How can improve armor by manipulating the layer of carbon fiber?
- What impact do vitamins have on the process of cellular respiration?

These are some great examples that you can use to help you generate your first Driving Question. Don't worry, these will be revised throughout the school year. **This is a fillable form, or you can print it out and write with a pen/pencil.**

Name

This will be used extensively during the first week of school. Please make sure that you have all parts complete.

- 1.) Three categories that are listed on the ISEF Categories and Sub-categories website that interest me the most are:
 - a.
 - b.
 - c.

Out of those three categories, the one that interests me the most is

Most interesting category

- 2.) Three possible Driving Questions that could be generated in that category are:
 - a.
 - b.
 - c.

Out of those three questions, the one that interests me the most is:

Most interesting question

- 3.) A way that I could potentially test my Driving Question would be:

I could test my driving question by...