

To: Honors Biology Students
Re: Honors Biology Independent Project

As you know yearlong projects are required for Honors courses taught by the Science Department. The yearlong project grade will count as **half of your 4th quarter grade**. Additionally, there will be notebook checks throughout the year that will be factored into the quarterly grades for the first three quarters.

Projects will due on the **Monday April 8, 2019** (this is the Monday **before** April vacation). **No late projects will be accepted.**

The format for **all aspects** of the project is outlined in detail in the on-line **Honors Science Project Manual**. Be sure you have read and adhere to **ALL** the guidelines outlined in the manual. One can access the Project Manual at www.wrsd.net/wrhs/science.cfm and click on "complete manual for honors science project" **or** by visiting the high school home page and selecting "Academic Departments", then "Science" and finally the project manual link.

You are restricted to a Biology topic and a living system must be used in your project. A Biology project is very different from a Physics project. A single trial for a Biology project can take weeks or months and you are required to complete **multiple trials**. Working with living systems is challenging in itself and can be expensive. Projects involving living systems **cannot** be procrastinated. Often times it is the project choice that will make or break a project (as well as the work you put into it), so take your topic choice seriously.

Your experimental design, including any changes, must be approved prior to experimentation by your teacher.

1. Topics that are NOT acceptable:

- a. Changing pH is not an acceptable IV for projects.
- b. The effects of colored lights, playing music, adding salt, sugar or fertilizer on plants are not acceptable projects.
 - i. One dimensional plant growth is *not sufficient* as the DV for plant projects.
- c. Vertebrates may **not** be used for your project (MA state law).
- d. Work with magnets is NOT allowed.
- e. Project may **not** use MOLD as a model organism.

2. Guidelines in coming up with a project or limitations of the project:

- a. Projects that may have a **medical**, an **agricultural** or **ecological** benefit are best.
- b. Your project should attempt to answer a question to which the answer is **not** readily known.
- c. **Bacteria** and **C. elegans** projects must be conducted at an **offsite** laboratory setting. You are responsible for finding a laboratory to work in if you choose to complete these types of projects. The school cannot provide one for you.
 - i. **You cannot work with bacteria and C. elegans at school or at home due to health and safety issues.**

The first notebook check will be on the first day of class, August 28, 2018. You must have 10 summarized sources of research on your topic in your marble notebook (in the last 40 pages of the notebook). Encyclopedias (on line or print) are NOT acceptable. Internet sources must be legitimate science resources and **not Wikipedia** or web sites by hobbyists etc. **Only 5 sources may be Internet sites**; the others must come from scientific journals (yes this means you have to visit the library). It is possible to access some journals online. Number each source, state the MLA citation, and write a paragraph summarizing the information. After each summary, state how this source will be used in the project (application).

Dates for collection of project sections (all dates are subject to modification except final deadline of April 8, 2019):

Aug 28	10 Summarized sources - Cited appropriately and numbered. Include how each source is helpful to your project (the Application)
Sept 14	Project Topic Proposal
Sept 28	10 Additional Summarized sources – Numbered, cited appropriately and its application to the project.
Oct 5	Hypothesis and Justification
Oct 19	Formal Project proposal
Nov 2	Experimental Design
Dec-Mar	Periodic notebook checks on Project Progress (PHOTOGRAPHS must be included in your notebook to substantiate your ENTIRE experiment)
Apr 8	Entire Project Due - Formal Paper, Presentation Board, Notebook, and Oral Report

If you have any questions regarding your project it is imperative that you speak to us before leaving for the summer break. We can be found in and around room D116 & D209.

~Mrs. Wright & Dr. Sparks