Independent Research Project

**Essential question:** How do scientists design research studies to find the most accurate answer to the question they are asking?

**Learning target:** I can design a controlled experiment.

Research Timeline:

1. Define **Problem** and research **Background Information**. Due on Monday, December 4th at beginning of class.
2. Write research question.

Research background information by answering these two questions found in research.

1. What information is currently known about the problem (i.e., what is the significance of the problem)?

2. Why is it important to address the problem?

Reference page needs to have 3-5 sources (minimum of 2 science journal articles, though the more science journal articles the better your research will be).

1. Write the first draft of the background information (no more than one page single spaced).
2. Write the **Introduction** to your paper. Include the Purpose Statement, Question, Hypothesis, and Background Information by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Write **Methods** section to test your hypothesis. Conduct one trial to refine methods.
4. Obtain IRB approval from Qualified Scientist.
5. **Results** (Data and analysis): Data collection (20 trials) will be completed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. Analysis of data will be completed by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
7. **Discussion** and **Conclusion** will then be written \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. First draft of research paper is due by \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
9. Edit first draft through peer review and teacher review. Write an **Abstract** of the paper. Final draft of research paper is due\_\_\_\_\_\_\_\_\_\_\_.
10. Create a poster for your research which is due by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
11. Poster Presentation at Lunch for staff.
12. Optional - Poster presentation at Montana Tech (Monday, March 5th, 2017, application is due Friday, February 23, 2018) or University of Montana (Monday, March 27-28, 2018, application is due Thursday, March 15, 2018)

\*Please let me know if you have any questions or concerns throughout the project. I am here to support you by providing ideas and helping you along the way. If a due date is tough for you to reach, then let me know and we can brainstorm a solution.