Project Background:
The human race has been altering the genes of organisms through selective breeding (e.g. cattle, dogs, corn) for many years. Recently, there have been great advances in our understanding of DNA, these advances have enabled us to modify organisms by changing the genes of these organisms, a technique called genetic engineering. The advances in genetic engineering have brought about many possibilities for ways to combat world hunger, malnutrition, illness, and infertility. These scientific advances are huge steps in the STEM field, however they also bring many ethical questions about how much we should manipulate DNA, or whether we should manipulate it at all. Your job as a junior scientist is to choose one of these genetic engineering topics (from the list below) that you would like to research. You are to use the information you find to create a solid argument for or against the topic you have chosen. Your goal is to persuade your audience in your direction. You are to then create a presentation in which you share this information with your class. After all projects have been shared, you will write a reflective essay over a classmate's presentation about which you have a different point of view.

Specifics:
When creating your presentation, you must have scientifically valid resources to back up your claims (not wikipedia.org). You must have at least one print source (not Internet), and at least five sources overall. You can share information with your partner through Edmodo, school space, Google docs. etc. You will also need to communicate with a scientist or professional in the science field regarding your topic.

Part I: Your **presentation** should have:
- Creative/informative title
- Overview of the topic detailing opposing viewpoints (written so even non-scientists could understand)
- Explain at least three scientifically valid reasons to support your opinion on your issue
- Explain three scientifically valid reasons opposing your opinion
- Conclusion explaining your viewpoint and describing your reasoning behind your viewpoint.
- Contact one Scientists/professional in the field and ask them a questions about your research.
- A glossary with at least five words defined from your presentation
- At least 3 pictures
- Be neat appearance, and be easy to read

Part II: Your **reflective essay** should have:
- Must be 1-2 pages typed. It should be 12 pt, Times New Roman font, and double-spaced.
- Include an accurate description of the point of view of the presenter, and then clearly explain how your point of view is different.
- You must discuss, in detail, at least three reasons why you are not in agreement with the presenter.
- These reasons need to be well thought out, and must include supporting details and facts.
- **You may not write the paper on your own topic.**

Part III: Reflection
- Complete peer evaluation sheet and self-evaluation sheet

Possible Topics

-Genetically modified organisms for use in medicines

-Stem Cells

-Cloning

-Genetic enhancement "Designer babies"

-Genetically modified organisms (plants, food, animals)

-Gene therapy

-Extending life due to genetic engineering

-Recombinant DNA

-Nature vs. Nurture

You may choose a topic not listed here, but discuss it with Mrs. Moorman first.

Total for Genetic Engineering Project (___/ 56)

Score for Presentation:

Informative title (2): _____

Overview of topic (5): _____

Supporting facts (5): _____

Opposing facts (5): _____

Conclusion (5) :_____

Relevant picture (3) :_____

Presentation Appearance (4) :_____

Glossary of terms (2) :_____

Communication with Scientist (5):_____

Total (36): _____

Score for Research Paper:

Correct Sources and cited correctly MLA (5): _____

Score for reflective essay (written about someone else's presentation!):

Description of presenter's viewpoint (4): _____

Three detailed reasons your viewpoint differs (6): _____

Supporting details and facts (4): _____

Grammar and spelling (3): _____

Formatting and length (3): _____

Total (20): _____
Comments: