

Ms. Martel
AP BIOLOGY GENETICS DISORDER PROJECT

Introduction:

Disorders or diseases manifest themselves in different ways, but for this project you will research a disorder that is genetic in origin from the list provided and report your findings.

Procedure:

1. Choose a genetic disorder from the list below. You may choose one that is not on the list, but I need to approve it first. You will be completing this project individually, and only one individual may sign up for a particular disease.



"The only thing our tests show is that your genes don't fit you properly."

| | | | |
|-----------------------|----------------------|-----------------------------|-------------------|
| Tay-Sachs disease | Turner Syndrome | Achondroplasia | Hemophilia |
| Fragile X Syndrome | Huntington's disease | Marfan's Syndrome | Angelman Syndrome |
| Prader-Willi Syndrome | Klinefelter Syndrome | Phenylketoneuria (PKU) | Cri du chat |
| Sickle cell disease | Cystic Fibrosis | Duchenne Muscular Dystrophy | Down Syndrome |
| Colour blindness | Albinism | | |

2. Conduct research on your topic; use a minimum of 4 sources.
3. Create a brochure. Your brochure must include the answers to the following questions:
 - o What is the genotype of a person with this disorder?
 - o What are the phenotypic effects of this disorder?
 - o What is happening with the DNA and proteins produced to cause these phenotypic effects?
 - o How is this disorder inherited?
 - o Are there carrier forms and/or lethal forms of this disorder?
 - o How can this disorder be treated?
 - o What is the prognosis for a person with this disorder?
 - o How many people are affected by this disorder? Does it affect any gender/population/ethnicity/race more than others?
4. While genetics are the reason for these disorders developing, I want you to identify ways in which researchers are using genetics to treat/manage these afflictions. If you cannot identify current areas of research, suggest possible ways in which they could treat/manage based on what we have learned so far this year.

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GENETIC DISORDER PROJECT –RUBRIC

DISEASE/DISORDER: _____

NAME: _____

| CRITERIA | EMERGING | DEVELOPING | PROFICIENT | EXTENDING | TOTAL |
|---|--|---|---|---|------------------|
| Diagram/ Representation | -Poor layout and design. -Organizes ideas in presenting results with limited effectiveness. | -Good layout and design. -Organizes ideas and presenting results with some effectiveness. | -Great layout and design. -Organizes ideas in presenting results with considerable effectiveness. | -Professional layout and design. -Organizes ideas in presenting results with a high degree of effectiveness. | |
| Research *Content | -Did not gather sufficient relevant information -Did not evaluate information for accuracy, relevance, and completeness. | -Gathered some relevant information, may be partially incomplete -Evaluated some aspects of the information; may not notice flaws | -Gathered sufficient, relevant information -Evaluated information for accuracy, relevance and completeness | -Gathered highly appropriate relevant information -Evaluated information thoroughly for accuracy, relevance and completeness. | |
| Research *Communication | -Uses creative/critical thinking processes to create a final product and reflect on their learning with limited effectiveness. | -Uses creative/critical thinking processes to create final product and to reflect on their learning with some effectiveness. | -Uses creative/critical thinking processes to create final product and to reflect on their learning with considerable effectiveness. | - Uses creative/critical thinking processes to create a final product and reflect on their learning with a high degree of effectiveness. | |
| Possible Genetic Treatment(s) x 2 | -Did not identify or suggest any current or possible areas in which genetics can be used to treat/manage disease. -Few or no inferences made -Did not gather sufficient relevant information | -Identified or suggested 1 current or possible areas in which genetics can be used to treat/manage disease. -Makes some inferences -Gathered some relevant information, may be partially incomplete | -Identified or suggested 2 current or possible areas in which genetics can be used to treat/manage disease. -Makes inferences most of the time -Has well developed opinions and supporting evidence | -Identified or suggested at least 3 current or possible areas in which genetics can be used to treat/manage disease. -Makes many inferences -Has very well-developed opinions and supporting evidence | |
| Presentation Style | Your presentation style did not keep the attention of the audience. | You rarely used eye contact, had difficulty engaging the audience during your presentation | You sometimes used eye contact, tone of voice and enthusiasm to keep the attention of the audience. | You consistently used eye contact, tone of voice and enthusiasm to keep the attention of the audience | |
| Sources | -Has provided 2 sources, not cited APA style | -Has provided at least 4 sources, not cited APA style | -Has provided 2 sources APA formatted | -Has provided at least 4 sources APA formatted | |
| TOTAL | | | | | /28 marks |