GENETIC DISORDERS RESEARCH PROJECT: POSTER/TRI-BORDER AND PRESENTATION INSTRUCTIONS

You have been challenged to incorporate your knowledge about cells, cell division, genetics and DNA to research and present on a specific genetic disorder. With the information that you have learned, you are being asked to research a specific genetic disorder and give an oral presentation along with creating an engaging presentation. This is a partner project. You may choose your partner to work with. Choose your partner wisely! You will be graded on how well you work together as a team! You will have 4 days in class to work on your poster and presentation.

YOU PROJECT SHOULD HAVE 3 DISTINCT PARTS:

1) A poster or tri-board that helps present your information. This should not be read from but used to enhance your presentation!
2) A presentation that lasts for 5 minutes in which you address the points below. A longer or shorter presentation will result in a lower grade!
3) The teacher and the students will ask questions. You should be able to answer all reasonable questions.

YOUR PRESENTATION DATE:
Your team will be assigned a date to present. There will be no makeup dates to present. If you are not here on your scheduled presentation date, your team will present without you and you will receive the score they get.

WHAT YOU NEED TO INCLUDE IN YOUR POSTER AND PRESENTATION:
The poster and presentation should follow the outline below. The questions listed are designed to provoke thought and to help you determine what is significant and what is not. They are not to be answered individually as a question and answer session.

1. INTRODUCTION
   o What is the name of the disorder? Are there any other names by which it is commonly known?

2. MODE OF INHERITANCE
   o All genetic disorders are inherited. There are several different ways in which they can be inherited. Determine whether your disorder is an autosomal dominant trait, an autosomal recessive trait, an X-linked recessive trait, a chromosomal error or a multifactorial trait (polygenic disorder). Chromosomal errors may take several types: a particular missing chromosome (e.g. a missing X chromosome), an extra chromosome (e.g. an extra chromosome 21), or a damaged chromosome (e.g. part of a chromosome deleted). A multifactorial disorder is one which is caused by several genes or by a combination of genetic and environmental factors.
   o Include a pedigree chart or Punnett square showing how the disease is inherited. Use your knowledge of dominance and recessive allele interactions to create your pedigree or Punnett Square.

3. CLINICAL DESCRIPTION OF THE DISORDER
   o What are the features of the disorder? How does it affect the victim? What is it like to have the disorder? How would you describe the disorder to someone else? What is the disorder like externally, internally, biochemically, psychologically, etc. What problems are associated with the disorder? Is the disorder physically limiting? Is it life-threatening? Is it invariably fatal? Is it found more commonly in certain groups of people, such as a particular ethnic or religious group or particular sex?

4. TREATMENT
   o Can anything be done for the disorder? Can the basic defect be treated? Can the symptoms or results of the disorder be treated? Is there a cure for the disorder? Is there any gene therapy for the disorder?
5. **Detection**
   - Can the disorder be detected before its symptoms appear? If so, how? Can it be detected prenatally? If so, how? Is there any way to detect a carrier of the disorder? If so, how?

**HOW THIS ACTIVITY WILL BE GRADED:**
The following factors will be used to determine the grade:

1. **Delivery** - Did you speak loudly and clearly? Were you too fast or too slow? Did you appear confident and poised? Did you have proper eye contact with the class? Were you enthusiastic? Did you avoid silliness? (7pts)

2. **Accuracy** - How accurate was your presentation? Did you give any misinformation? Did you appear to know the information well? Did you answer questions accurately? Did you make the effort to insure that all terms were pronounced correctly? (7pts)

3. **Following directions** - Did you stick to the time limits? Did you include all the required information? Were you on task at all times during the preparation of your presentation and poster? Did you work well together as a team? (7pts)

4. **Use of visual aid** - Did you use the poster/tri-board during your presentation? Did you only refer to your poster instead of “read” your poster to the class? Was your poster attractive and well thought out? (7pts)

**OTHER INFORMATION:**

1. You will choose a genetic disease out of a bag. You will draw two diseases out of a bag and then you can choose one of the two to do your project on. Put the one you don’t want back into the bag for the next team.
2. You must **turn in a bibliography/reference page** for the sources used in your presentation. There must be a minimum of 4 sources. Must be cited in APA format.
3. **Everyone in the group must play an equal roll in the presentation.**
4. How you behave in class while working on the presentation and also during the presentations will impact your grade.
5. **The project will be counted as a test grade.**
Some Internet resources that may be helpful to you in creating your presentation:

**Genetic Disorder Library, University of Utah**
http://learn.genetics.utah.edu/content/disorders/whataregd/
To learn more about different genetic disorders, browse through the Genetic Disorder Library.

**Genetics Education Center**
http://www.kumc.edu/gec/
Seeks to help educate people about genetics.

**National Human Genome Research Institute**
http://www.genome.gov/10001204
National Institutes of Health

**Teens Health**
http://kidshealth.org/teen/your_body/health_basics/genes_genetic_disorders.html
The Basics on Genes and Genetics Disorders.

**Understanding Gene Testing** – These sites will help you with understanding genetic terms and disorders.

**Gene Testing, National Cancer Institute**
http://www.cancer.gov/cancertopics/understandingcancer/genetesting

**Understanding Genetic Testing, Center for Genetics Education**

*This is not a comprehensive list. You will probably need to access other sites to find out information!*  

**List your Genetic Disorder to Research:** ______________________________________________________

List your references below to help you track the various websites, books, etc you use for your project. Make sure that you do not list “google” or “yahoo” as a resource. The information presented in your project must be written in your own words. If not, you will receive a **grade of a zero for plagiarizing** your project.
**GRADING RUBRIC**

You must turn this rubric in when you present. Each member of your team must turn a Rubric in! Failure to do so will result in a reduction in your grade!

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<th>1</th>
<th>3</th>
<th>5</th>
<th>7</th>
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<tbody>
<tr>
<td><strong>Delivery</strong></td>
<td>Audience cannot understand presentation because there is no sequence of information. Student reads all of report with no eye contact. Student mumbles, incorrectly pronounces terms, and speaks too quietly for students in the back of class to hear.</td>
<td>Audience has difficulty following presentation because student jumps around. Student occasionally uses eye contact, but still reads most of presentation. Student's voice is low. Student incorrectly pronounces terms. Audience members have difficulty hearing presentation</td>
<td>Student presents information in logical sequence which audience can follow. Student maintains eye contact most of the time. Student's voice is clear. Student pronounces most words correctly. Most audience members can hear presentation</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>Student does not have grasp of information; student cannot answer questions about subject.</td>
<td>Student is uncomfortable with information and is able to answer only rudimentary questions.</td>
<td>Student is at ease with expected answers to all questions, but fails to elaborate.</td>
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<td><strong>Follow Directions</strong></td>
<td>Presentations were extremely short or extremely long. More than one member of the team was off task during the preparation time. Teamwork was not evident during preparation time. Was disruptive during classmate presentations.</td>
<td>Presentation is more than 6 minutes in length or less than 4 minutes in length. Most members of the group were on task for the majority of the preparation time. Teamwork was observed during preparation time. Did not participate in classmate presentations; did not ask any questions and did not pay attention.</td>
<td>Presentation is just shy or slightly longer than 5 minutes. All information is included in presentation including additional information. Most members of team were on task during entire preparation time. Participated in classmate presentations by asking a question.</td>
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<td><strong>Visual aid</strong></td>
<td>Visual aid has four or more spelling errors and/or grammatical errors. Student uses superfluous graphics or no graphics on project. Visual aid appears to be sloppy and unorganized in its design and layout.</td>
<td>Visual aid has three misspellings and/or grammatical errors. Student occasionally uses graphics that rarely support text and presentation. Visual aid is adequate.</td>
<td>Visual aid has no more than two misspellings and/or grammatical errors. Student's graphics relate to text and presentation. Visual aid is well done</td>
</tr>
<tr>
<td><strong>Reference Page</strong></td>
<td>Reference page is submitted, but it contains errors in citation.</td>
<td>Properly cited reference page is submitted</td>
<td>n/a</td>
</tr>
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**Total Points:** /31
YOUR DISORDER WILL BE SELECTED FROM THE LIST BELOW

Sickle-Cell Anemia

Breast cancer

Thalassemia

Edward's Syndrome/Patau's Syndrome

Turner's Syndrome

Polycystic kidney disease

Klinefelter's Syndrome

G6PD (Glucose 6 phosphate dehydrogenase) Deficiency

Cooley's anemia

Gaucher's disease

Hemophilia

albinism

Familial Hypercholesterolemia

diabetes mellitus

Neurofibromatosis
diabetes insipidus
Marfan Syndrome
fragile X syndrome
Phenylketonuria
Parkinson's disease
Cystic Fibrosis
Alzheimers
Tay Sachs Disease
colorblindness
Down Syndrome
epidermolysis
Duchenne Muscular Dystrophy
alcoholism
Huntington's Disease
Burkitt lymphoma
Cri-du-chat Syndrome
Pituitary dwarfism syndrome

Galactosemia

Immune deficiency diseases (Boy in the bubble)

left Lip/Palate

Polydactyl

Osteogenesis Imperfecta

Sensorineural deafness

Spina Bifida/Anencephaly