Genetic Pedigree Project Guidelines

My Name: ___________________
Period: _____ Due Date: ______
Trait: ____________

Mini-Project Description:
Students will create a visual representation of their genetic pedigree for one specific genetic trait. You may choose to track dimples, tongue rolling, hair texture, attached earlobes, or hitchhiker’s thumb through your family tree. If you want to choose another trait, please check with Mrs. Curley first. You will begin your pedigree with your grandparent’s generation and continue through three full generations including yourself, your siblings, and your cousins. You must have a minimum of 4 people in each generation. Therefore, there will be a MINIMUM of 12 people for the whole pedigree. Feel free to make your pedigree larger, however, keep in mind that you need to be as accurate as possible. You may refer to family photographs for traits if your relatives are deceased. In today’s society, many families are blended with adopted children and step and half siblings. These individuals can also be included in your family pedigree. Be sure to ask your teacher for assistance with these relationships in making your diagram.

This project is worth **70 points**. Please take your time and be as accurate as possible. Students should start collecting information for this project immediately, but it is due after the holiday vacation so you can collect information from your relatives when you see them!

Project Requirements:
- Your project must include a minimum of **12 people total**, at least 3 generations and at least 4 people in each generation. (See Mrs. Curley if a waiver is necessary)
- You must include a key for all the symbols that you use.
- You must follow a **single** genetic trait (dimples, tongue rolling, hair texture, attached earlobes, or hitchhiker’s thumb).
- You must choose a trait which will show variation within your family (Example: If every person in your family has dimples, do not choose dimples to trace in this pedigree)
- You must include the first and last name (or character) of each individual on the pedigree.
- You must include an appropriate title for the project.
- Your name, due date and period number must be contained on the front side of the assignment
- The project must be contained on a blank sheet of 8 ½ x 14 paper (legal size) in the landscape direction, cover only 1 side, and be only 2-dimensional.
- The project should be neat, colorful, free of spelling and grammar errors, and a reflection of your best effort.
- Photographs of individuals may be added for extra credit!
Dominant & Recessive - Genetic Information

- **Tongue rolling and dimples** are a **dominant** trait.

- **Attached earlobes and hitchhiker’s thumb** are a **recessive** trait.

- **Hair texture** is a co-dominant trait.
  - curly hair is homozygous dominant
  - straight hair is homozygous recessive
  - wavy hair is heterozygous

On the left is an example of a key with the types of symbols that may be used for your Genetic Pedigree key. You may also make up your own symbols, but please be sure they are simple, clear, and easy to understand.

On the right is a partial example of a pedigree. It is not complete, but is intended to give a basic idea of how a pedigree is set up. A template created by Mrs. Williams is also posted on my website for you to see and use if you would like.

**Example: Tongue Rolling**

- Grandfather: Recessive (Can’t roll tongue)
- Grandfather: Deceased
- Grandmother: Recessive
- Father: Recessive
- Mother: Dominant (Can roll tongue)
- Parents: Divorced
- Son: Dominant
- Daughter: Adopted, Recessive

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*ercgwilliams-12 adapted from: [https://www.msu.edu/~langley6/chs/Bio/Genetics/Peddirect.htm](https://www.msu.edu/~langley6/chs/Bio/Genetics/Peddirect.htm); ed. jcurley-2014*
## Genetics Pedigree-Project - Grade Sheet

**Genetic Trait: ___________________________**

**Name: _____________________**

**Period: _____**

**Due Date: _______**

**Assessment Criteria:**

Projects will be evaluated using the rubric below:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Student Score</th>
<th>Teacher Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses 8 ½ x 14 paper in landscape direction</td>
<td>= 2</td>
<td></td>
</tr>
<tr>
<td>Includes an appropriate title</td>
<td>= 2</td>
<td></td>
</tr>
<tr>
<td>Includes student name, due date &amp; period number</td>
<td>= 3</td>
<td></td>
</tr>
<tr>
<td>Colorful and appropriately decorated</td>
<td>= 10</td>
<td></td>
</tr>
<tr>
<td>Lines drawn with a ruler or done on a computer</td>
<td>= 2</td>
<td></td>
</tr>
<tr>
<td>Trait chosen shows variation throughout the family</td>
<td>= 2</td>
<td></td>
</tr>
<tr>
<td>Includes at least 12 individuals with male/female &amp; absence or presence of trait symbols</td>
<td>= 12</td>
<td></td>
</tr>
<tr>
<td>Includes at least 3 generations labeled I, II, III</td>
<td>= 3</td>
<td></td>
</tr>
<tr>
<td>Members of the same generation are aligned horizontally</td>
<td>= 3</td>
<td></td>
</tr>
<tr>
<td>Includes at least 4 individuals in each generation</td>
<td>= 3</td>
<td></td>
</tr>
<tr>
<td>Each individual is labeled with their first and last name (or character)</td>
<td>= 6</td>
<td></td>
</tr>
<tr>
<td>All relationships are clearly indicated with accurate line connections</td>
<td>= 5</td>
<td></td>
</tr>
<tr>
<td>Includes a detailed key indicating an explanation of what ALL symbols represent</td>
<td>= 5</td>
<td></td>
</tr>
<tr>
<td>Key is simple, clear, and easy to understand</td>
<td>= 5</td>
<td></td>
</tr>
<tr>
<td>The project is neat and legible</td>
<td>= 5</td>
<td></td>
</tr>
<tr>
<td>Free of spelling and grammar errors</td>
<td>= 2</td>
<td></td>
</tr>
<tr>
<td><strong>EC. Include photographs for all family members?</strong></td>
<td>= +5</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL = 70 points ______

* Waiver: ________

(See Mrs. Curley if you do not have four members in generations II and/or III)