

**Genetics Research Project**

**The genetic disease I’m researching is .**

The following people **actively contributed** in researching and writing this project:

|  |  |  |
| --- | --- | --- |
| First Name | Last Name | What sections did they work on? |
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| **Category** | **Guiding****Questions** | **Research**(Must be in paragraph form.) | **Sources****(The site name AND the link)** |
| **Explanation of Genetic Disorder** | → What are the symptoms of the genetic disorder?→ How is the disease viewed in one or more cultures? → Who is most at risk for the disease?→ Include two pictures related to the disease. |  |  |
| **Role of DNA** | → What is the structure and function of DNA?→ explain how DNA causes this genetic disorder? Is there a specific mutation or extra gene that causes this disorder? → Your research must include the words: *DNA, DNA sequence, base pairs, chromosome, double helix, gene* |  |  |
| **Meiosis** | → Summarize what happens in the process of meiosis.→ How does the creation of gametes (sex cells) lead to the genetic disorder?→ Your research must include the words: *Meiosis, gametes/sex cells, chromosomes* |  |  |
| **Inheritance** | → What is the probability that this genetic disorder is passed from parent to offspring?→ Use a Punnett square to explain the probability.→ Your research must include the words: *Inheritance, heterozygous/carrier, homozygous, recessive, dominant, trait, allele, genotype, phenotype, carrier* |

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| **Building Awareness**  | → What are ways in which society has bullied or caused harm to people with this genetic disorder? → What can society do to provide support or resources to assist folks with this genetic disorder? → What language should be used when addressing people with this genetic disorder? What language should not be used?  |  |  |

**Helpful Websites:**

* Learn.Genetics Utah: <http://learn.genetics.utah.edu/content/disorders/singlegene/>
* Infotopia: [http://www.infotopia.info](http://www.infotopia.info/)
* The World Health Organization (WHO): <http://www.who.int/en/>
* Mayo Clinic: <http://www.mayoclinic.org/>
* Centers for Disease Control and Prevention (CDC): [https://www.cdc.gov](https://www.cdc.gov/)

**Genetic Disorders \*class copy please do not write on \***

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| Genetically Inherited Achondroplasia |
| Genetically Inherited Breast cancer |
| Cystic fibrosis |
| Down syndrome |
| Hemophilia A |
| Adult-Onset Huntington’s disease |
| Parkinson’s disease |
| Sickle cell disease |
| Tay-Sachs disease |
| Phenylketonuria |
| Color Blindness |
| Turner syndrome |
| Klinefelter syndrome |
| Androgen insensitivity syndrome |
| 5-alpha reductase deficiency |
| Harlequin Ichthyosis |
| Fibrodysplasia ossificans progressiva |
| Fatal Familial Insomnia |
| Xeroderma pigmentosum |
| Treacher Collins syndrome |
| Polydactyly (Extra fingers or toes) |

**Rubric for Genetic Conditions Group Research (\_46\_\_ points)**

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|  | **10 Points**  | **8 Points** | **6 Points** | **4 Points** | **2 Points** | **0 Points** |
| **Explanation of Genetic Disorder** | *Clearly and correctly answers* ***all*** *of the five questions from the research document - Explanation of Genetic Disorder Section. .*  | *Clearly and correctly answers* ***four*** *of the five questions from the research document - Explanation of Genetic Disorder Section.* | *Clearly and correctly answers* ***three*** *of the five questions from the research document - Explanation of Genetic Disorder Section.* | *Clearly and correctly answers* ***two*** *of the five questions from the research document - Explanation of Genetic Disorder Section.* | *Clearly and correctly answers* ***one*** *of the five questions from the research document - Explanation of Genetic Disorder Section.*  | *No explanation of genetic disorder.* |
| **Genetic Processes Leading to the Disease** | *Clearly and correctly answers* ***both*** *of the two section questions and includes* ***all*** *of the keywords.*  | *Clearly and correctly answers* ***both*** *of the two section questions but is* ***missing 2-3*** *of the keywords* | *Clearly and correctly answers* ***both*** *of the two section questions but is* ***missing 4 or more*** *keywords.*  | *Clearly and correctly answers* ***one*** *of the two section questions and includes* ***all*** *of the keywords.* | *Clearly and correctly answers* ***one*** *of the two section questions but is* ***missing keywords.*** | *No explanation of genetic processes leading to the disease* |
| **Punnett Squares** **OR****Meiosis sketches** | *All five punnett squares done correctly with percentage* ***Or****Meiosis sketch includes all relevant details of chromosome numbers* | *Four punnett squares done correctly with percentages*  | *Three punnett squares done correctly with percentages****Or****Meiosis sketch is included but lacks detail (i.e. number of chromosomes)* | *Two punnett squares done correctly with percentages* | *One punnett square done correctly and percentage*  | *No punnett square provided****Or****No meiosis sketch provided* |
| **Punnett Square explanations** **Or** **Meiosis Explanation**  | *Correct and detailed explanation of the punnett squares or meiosis sketch with all the keywords* | *Correct and detailed explanation of the punnett squares or meiosis sketch with 2 keywords missing* | *Correct and detailed explanation of the punnett squares or meiosis sketch with 3 keywords missing* | *Correct and detailed explanation of the punnett squares or meiosis sketch with 4 keywords missing* | *Correct and clear explanation of the punnett squares or meiosis sketch, but no keywords used* | *No explanations provided for punnett squares or meiosis sketch*  |
| **Building Awareness** → What are ways in which society has bullied or caused harm to people with this genetic disorder? → What can society do to provide support or resources to assist folks with this genetic disorder? → What language should be used when addressing people with this genetic disorder? What language should not be used? | N/A | N/A | Detailed and correctly answers **all** questions  | Detailed and correctly answers **two** questions  | Detailed and correctly answers **one** question  | No call to action. |

**Project Visual Rubric (40)**

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|  | **10 points**  | **6 points**  | **4 points**  |
| **Organization** | * All the information is easy to read, see or hear.
* The topic is clear and visible.
* The information is in a logical sequence.
* The presentation is appropriate for the topic and audience.
* It contains written work, visual work , and verbal information.
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 |
| **Content** | * Scientific information is on topic and accurate.
* References appropriate language for people with the genetic disorder.
* Technical terms are well-defined in language appropriate for the target audience.
* There is an obvious conclusion summarizing the presentation.
* Explains all of the following:
	+ Who is at risk
	+ What are the symptoms
	+ How it is passed down
* References all of the following classroom content:
	+ Punnett squares
	+ DNA
	+ Meiosis
	+ Inheritance
	+ Chromosomes
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| **Graphics** | * Contains images of people with genetic disorder.
* Relevant graphic that explains the genetic disorders heredity and cause.
* Graphics have an explanation written and verbal.
* Graphics are clear and labeled.
* Two or more graphics explaining the genetic disorder are used.
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| **Presentation** | * The purpose of the presentation is visual and clear.
* Speakers maintains good eye contact with the audience and is appropriately animated (e.g., gestures, moving around, etc.).
* Speaker uses a clear, audible voice.
* Visual aids are well prepared, informative, effective, and not Distracting.
* Information was well communicated and all members participated.
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