

**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* | |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  | |  |  |  | |  |
| **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. | * 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. | * 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 |
| **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 | * 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 | * 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 |
| **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. | * 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. | * 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. |
| **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. | * 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. | * 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. |