



Genetic Mutations in Humans

By: Jessica Shaffer

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Science
Grades 6–8



Introduction

Genetic mutations can be in the form of a disease or they can be beneficial! Students will take a turn as the teacher in order to inform classmates of various genetic mutations that exist.

Learning Objectives

([MS-LS3-1](#)) WALT develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

Materials Needed

- Chromebook/tablet/device

Procedure

1. Students will complete a [basic Heredity & Genes assignment](#) before beginning the model. Students may work in small groups on this and search online for answers. You can assign this digitally or pass out paper.
2. There are multiple videos and articles available online that discuss heredity, genes, and genetic mutations. Make sure to preview the videos before you share them with the class, as they can change.
 - [What kinds of gene mutations are possible?](#)
 - [Genetic Disorders](#)
 - [Mutations](#)
 - [Introduction to Genetic Mutations](#)
 - [Different Types of Mutations](#)
 - [Mutations and Disease](#)
3. Students will choose which type of mutation they wish to model. They must okay this with the teacher, as each student should be choosing a different mutation. Some examples are as follows:
 - Beneficial: Lactose Tolerance, HIV Resistance, Trichromatic Vision, Malaria Resistance,
 - Disease: Cystic Fibrosis, Cancer, Sickle-Cell Anemia, Color-Blindness, Tay-Sachs Disease, Autism, Crohn's Disease, Down Syndrome, Hemophilia

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4. In a Google Slideshow, the students will relay the following information about the genetic mutation: (not every mutation will have something for each category; you can address on an individual basis)
- Name (5 points)
 - Short Description (5 points)
 - Symptoms (5 points)
 - How It is Diagnosed & Treated (5 points)
 - Model: Create a model of the mutation on the slideshow (50 points)
 - Additional Important Information (at least 3 items) (10 points)
 - Presentation (10 points)
 - Creativity & Effort (10 points)
5. After students are done researching the genetic mutation and creating the Google Slideshow, students will present their findings to the class.

Evaluation

Rubric for the project will be used for grading purposes by the teacher.

Project Component	Point Value
Name	5 points
Short Description	5 points
Symptoms	5 points
How is it Diagnosed Treatment	5 points
Model	50 points
Additional Important Information	10 points
Presentation	10 points
Creativity & Effort	10 points