**CBSCS Performance Expectation:** Give examples, using print and electronic sources, of genetic diseases that result from mutations to a single gene. Identify the specific type of mutation that caused the change in amino acid sequence and ultimately the change in the protein being produced.

**Part 1: Mapping Your Chromosome.**

* Research your assigned chromosome pair.
	+ Make a list of at least 20 characteristics/traits that you find interesting or important that chromosome codes for.
* Create a poster that shows the following: (see below)
	+ Drawing of the chromosome pair.
	+ Number of bases pairs found on your chromosome.
	+ Map the 20 characteristics you choose on your drawing.
	+ A brief statement on what you find interesting about the chromosome.



**Part 2: Genetic Disorders Related to Your Chromosome.**

* Choose one genetic disorder that is caused when a gene on your chromosome mutates.
* Research the following about your chosen genetic disorder:
	+ Scientific Name of the disorder.
	+ Common Names of the disorder.
	+ Characteristics & Physiological effects:
		- Main symptoms
		- Pictures
	+ Demographics:
		- Who gets the disorder?
		- Is it more common in a particular race, sex, or geographic location?
		- What is the % occurrence of the disorder?
	+ Mode of Inheritance:
		- Type of disorder: autosomal dominant, autosomal recessive, sex-linked, multifactorial?
		- What gene/genes on your chromosome are involved?
		- What kind of mutation causes the disorder?
		- What is the probable genotype(s) of the person affected with the disorder?
		- What are the probable genotype(s) of the parents?
	+ Create a pedigree showing how the trait can be passed on.
	+ Diagnostic Testing:
		- Can the disorder be detected before symptoms appear?
		- What tests, besides symptoms, can be used to diagnose the disorder.
	+ Treatment/Prognosis:
		- Are there treatments for the disorder? If so, what are they?
		- Who is most likely to respond to treatment?