**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?