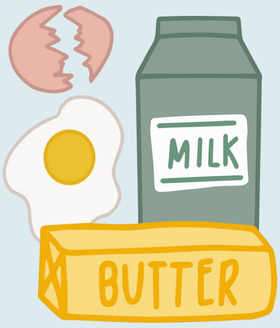
The Genetic Recipe

DNA Alphabet

Our DNA uses 4 chemicals, abbreviated A, T, C, and G, as its code to write out instructions for our body that are like recipes.

A T
C G



Gene = Recipe

One gene can be thought of as one recipe in a cookbook.

Chromosome = Cookbook

Genes are packaged into chromosomes. So, one chromosome can be thought of as a cookbook with a bunch of recipes.

Genome = Cookbook Collection

The genome is a full set of 47 cookbooks: 23 from each parent PLUS the extra mitochondrial DNA.

Final Product

Just like the recipe tells us how to bake a cake, our genetic recipe tells our body how to make the things we need to grow and function.

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GENETIC CHANGE: COOKING

How can a change in a recipe (or gene) change the final product?

Recipe 1

DNA Alphabet
Letters to write out the recipes.

ATG
GCA
GGC

Ch*ocolat*e

Gene = Recipe
Following the recipe, we will use chocolate.

Chocolate Cake
Following this recipe that used chocolate, we baked a chocolate cake.

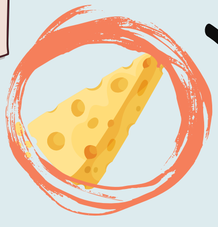
Recipe 2

ATG
GCG
GGC

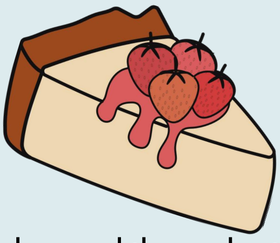
DNA Alphabet
Letters to write out the recipes.

Ch*eese*

Gene = Recipe
The "chocolate" in the recipe has been changed to cheese.



Cheesecake
Following this recipe that used cheese, we baked a cheesecake.



The change in the recipe from chocolate to cheese changed the cake that was baked. Just like in our genes, a change in the genetic spelling of our DNA can lead our body to build a different product. There are many examples of genetic changes that cause people to have minor differences like the two cakes in this example. Genetic changes are what make people have different colored eyes, hair, and so much more!

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