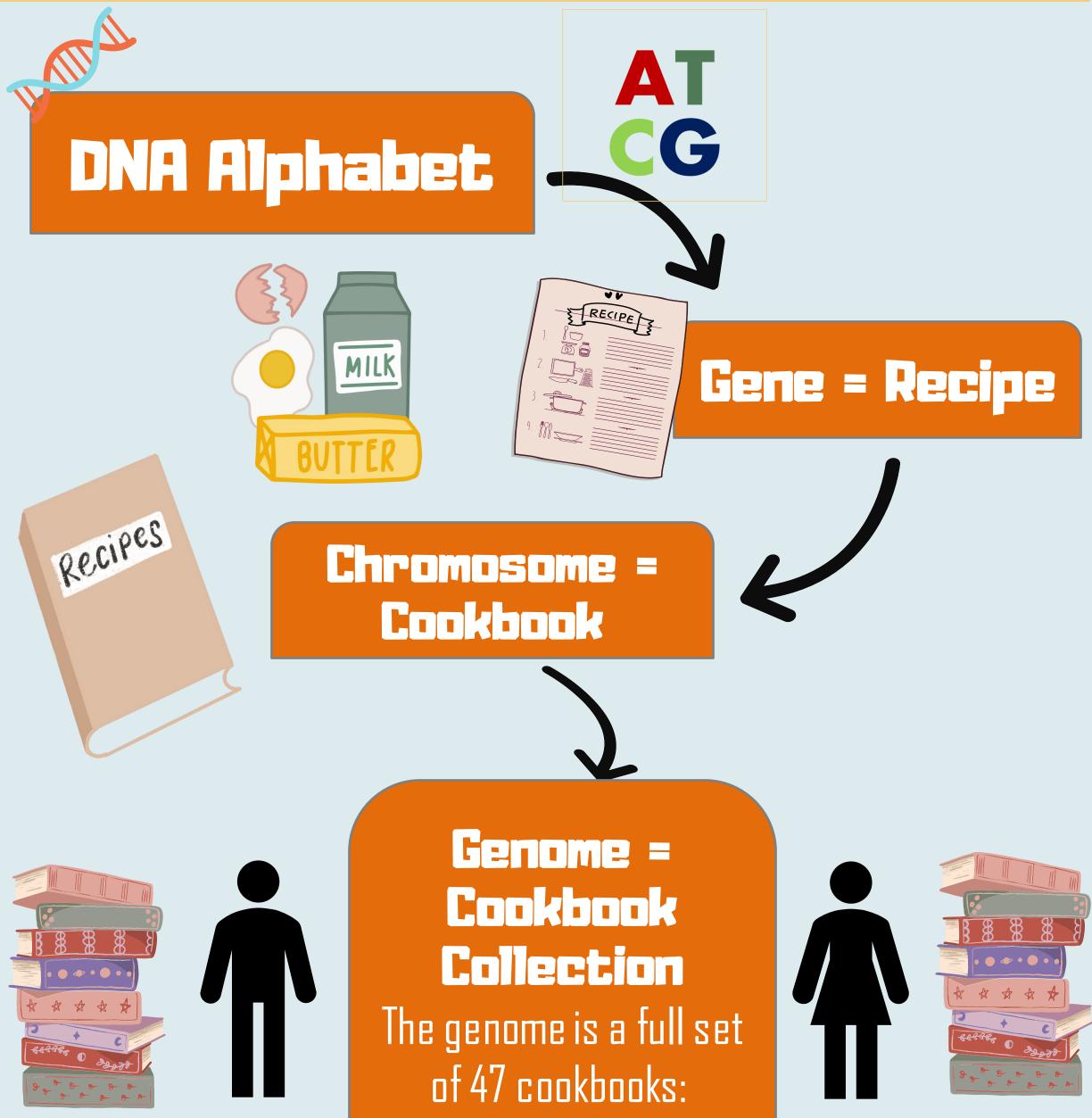
## ew Genetic Cha variants



23 from each parent PLUS the extra mitochondrial DNA

Chocolate



Ch<u>ocolat</u>e

## New Changes/De novo variants

Sometimes a genetic change happens as a brand new change in a child and is not inherited from the parents. These new changes are called "de novo." In this example, both mom and dad have a recipe (gene) for chocolate cake, however, their child has a change in their recipe (gene) that made cheesecake instead. This child may be the first in the family to ever



This program is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS). The contents herein are developed by the Regional Genetics Networks of Mountain States (UH7MC30776) and New York Mid-Atlantic (UH7MC30773) as part of an award totaling \$1,441,455 with 0 percent financed with non-governmental sources. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS, or the U.S. Government. For more information, please visit HRSA.gov