# DNA Sequencing and Sorting

Each of the cells in your body contains a copy of your genetic inheritance, your **DNA** which has been passed down to you, one half from your biological mother and one half from your biological father. This DNA determines physical features, like eye color and hair color, and can determine susceptibility to medical conditions like hypertension, heart disease, diabetes, and cancer.

In this unit you'll learn about **genome sequencing,** which is being used to study DNA and identify human genetic variation. The module introduces concepts in biology and genetics: DNA, chromosomes, and mutations. Mathematical and algorithmic concepts include binary numbers and sorting with Radix Sort.
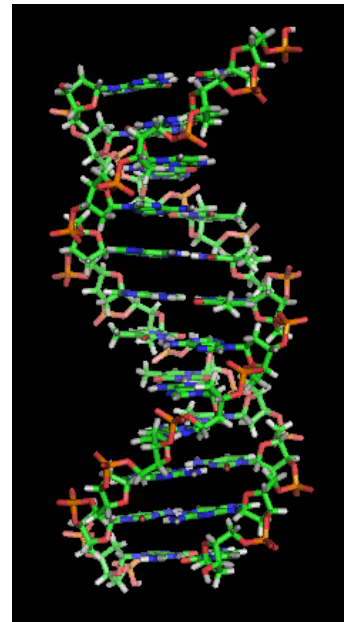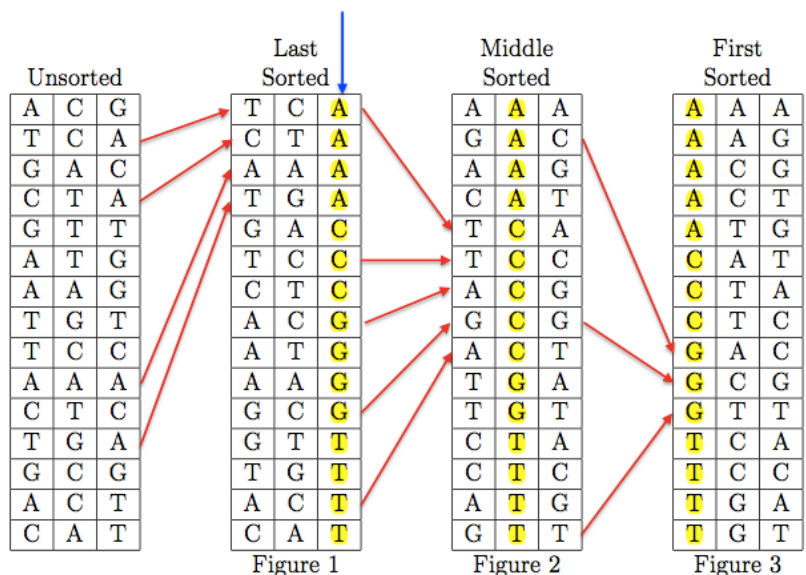

DNA double helix
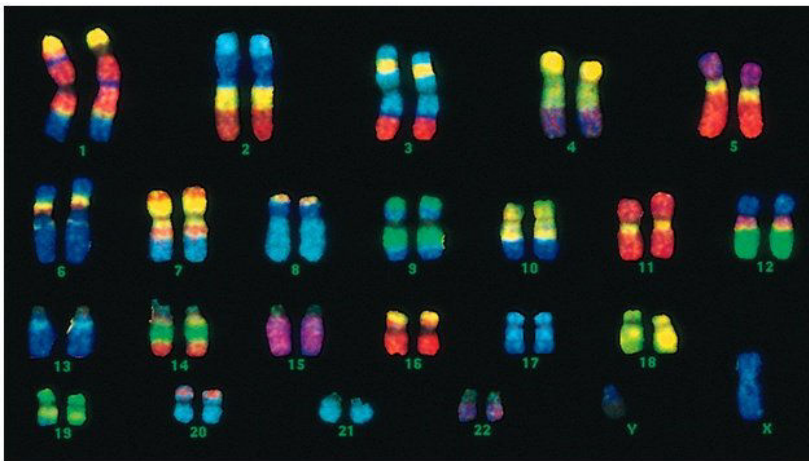
Human chromosomes

Neat Things You'll Do.

1. See how scientists determine what's different about someone's genome through a simulation of DNA fragment **mapping** which identifies where experimentally obtained short DNA fragments fit in a reference human genome.

2. Mapping is made easier when scientists have a "dictionary" of the genome. You'll learn how to build a dictionary using a method called **Radix Sort,** which can easily and quickly sort DNA sequences, and students too!

Radix Sort