









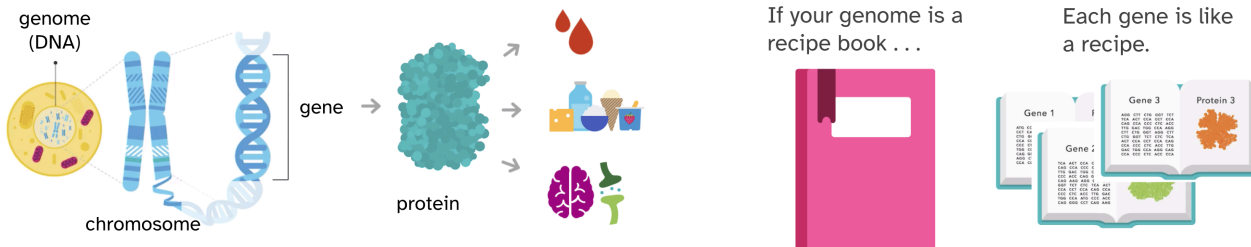


## Genetics Vocab at a Glance

<p><b>cell</b></p> 	<p>A tiny building block of the body. There are many different types of cells, and each type carries out specific functions.</p>	<p><b>Fun fact:</b> The human body has about 37 million cells. They're pretty tiny: If you lined up skin cells against a ruler, it would take ~800 cells to reach the 1-inch mark.</p>
<p><b>DNA</b></p> 	<p>A molecule that contains all the instructions for building and maintaining your body. DNA is made up of four letters or building blocks: A, T, C, and G.</p>	<p><b>Fun fact:</b> If you stretched out all the DNA from inside one human cell, it would be about 6 feet long. Pretty impressive since cells are so tiny that you need a microscope to see them!</p>
<p><b>genome</b></p> 	<p>A complete set of all the DNA found inside each of our cells.</p>	<p><b>Fun fact:</b> The human genome contains ~3 billion DNA letters. (The animal with the largest genome? A lungfish, at ~91 billion DNA letters.)</p>
<p><b>chromosome</b></p> 	<p>A structure made of tightly packaged DNA. Humans usually have 23 pairs of chromosomes, so 46 total. Together, these chromosomes contain almost all the DNA in the human genome. (A tiny amount is found inside cell structures called mitochondria.)</p>	<p><b>Fun fact:</b> Each chromosome is one long DNA molecule. Dogs have 39 pairs of chromosomes, cats have 19 pairs, and hamsters have 22 pairs.</p>
<p><b>gene</b></p> 	<p>A section of DNA that contains instructions for making a specific protein (or an RNA).</p>	<p><b>Fun fact:</b> Humans have about 20,000 protein-coding genes, plus many more RNA-coding genes. (Like proteins, functional RNAs play important roles in the body.)</p>
<p><b>protein</b></p> 	<p>A molecule that's encoded by a gene and performs an important job in the body, like carrying oxygen, digesting food, or helping our brain cells communicate.</p>	<p><b>Fun fact:</b> Proteins fold into all sorts of interesting shapes to help them do their jobs, from spirals to sheets. Scientists can use AI to help predict these folding patterns to better understand the human body.</p>
<p><b>genetic variant</b></p> 	<p>A difference in the DNA sequence between people. For example, if most people have a "C" at a particular position in the genome but some have an "A," the "A" is a genetic variant.</p>	<p><b>Fun fact:</b> Humans are 99.5% identical at the DNA level. But out of 3 billion DNA letters in the human genome, that leaves millions of places that make us each unique! Most genetic variants don't impact our health, but some do.</p>
<p><b>inheritance</b></p> 	<p>The process by which genetic information is passed down from parents to children through DNA.</p>	<p><b>Fun fact:</b> When we say that parents and children share 50% of their DNA, we're referring to 50% of the 0.5% that differs between people.</p>



## A visual summary



Almost all the cells in our body contain a complete set of DNA (sometimes called our "genome"), which contains all the instructions for building and maintaining our bodies. This DNA is packaged up into chromosomes. Along those chromosomes are segments of DNA called genes, which contain instructions for making proteins that carry out important functions in our bodies.

So if you think about your genome like a recipe book, then each gene is like an individual recipe for making a protein. Together, those recipes contain all of the instructions for making you, you!

### Interested in learning more?

Two of our favorite sites for learning about genetics are the University of Utah's [Genetic Science Learning Center](#) and [MedlinePlus Genetics](#).