



Cells

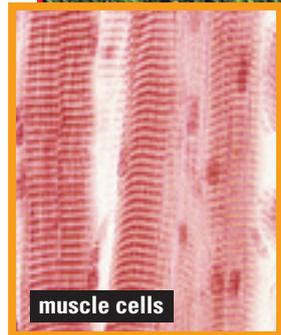
Look around. Every living thing you see—every plant, every flower, every person, every bird or mammal—has one thing in common. Each is made of cells. Most of the organisms you can see are made of lots of cells. By lots, we mean LOTS. For example, you have about 50 to 75 million *million* cells you can call your own.

Even though you can't see most cells without a microscope, they are the basic building-blocks of all life. Believe it or not, most organisms on Earth are made of just one cell. The rest are like you: multicellular, or made of lots of cells.

All of the cells in complex living things work together to carry out particular activities. But that doesn't mean all cells are the same. Far from it! Plant cells and animal cells have basic differences, which you'll read more about at right and in the rest of this book. And even within the same kind of plant and animal, there is an amazing assortment of cell shapes and sizes. A cell is formed to do a particular job. Let's take a closer look.

BRIGHT AND BEAUTIFUL—Cells keep their organism alive. In addition, in people and in plants, some cells help the organism reproduce, so that life can continue. Different kinds of cells in a flower form the reproductive parts, which are needed to produce seeds for future generations of flowers.

BUILT TO MOVE—Plants generally stay in one place. They don't have to move around the way you do, so they don't need muscle cells. These long, stringy fibers can contract and relax. When a muscle cell in your body contracts, it's using energy to move some part of you. You know your muscle cells in your arms are working when you pick up something heavy. But they're also busy extending and contracting when you smile, frown, breathe, or laugh. Your heart muscle cells never get a break, keeping your heart beating even when you are asleep.

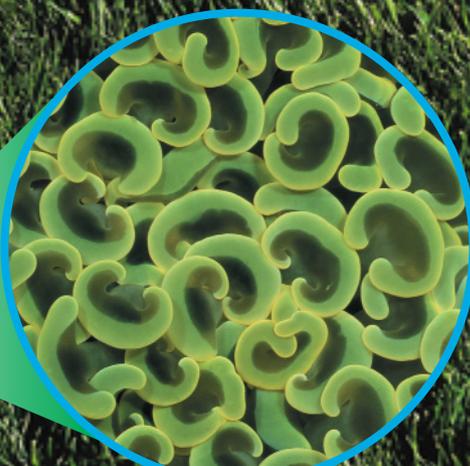


muscle cells

LAYERS OF CELLS—Plants have a layer of outer cells to protect what's inside, and so do you—your skin cells. Touch your hand and you're touching many thousands of skin cells. All of these outer cells are dead. But just underneath this surface are neat rows of living skin cells. Nestled among them are other types of cells: nerve cells, which allow you to feel things; fat cells to keep you warm; and capillary cells that make sure all cells are supplied with oxygen and nutrients from your bloodstream.



RODS AND CONES—Your eyes have nerve cells that convert light into electrical impulses and then send them to your brain. Cone-shaped cells pick up bright lights and colors, and rod-shaped cells respond to dimmer signals.



GREEN BLOCKS—Green plant cells turn sunlight energy into food. And plant cells have something that animal cells do not have: thick cell walls that give plants strength and structure.