

Using computer animation based on molecular research, we are now able to see how DNA is actually copied in living cells. You are looking at an assembly line of amazing miniature biochemical machines that are pulling apart the DNA double helix and cranking out a copy of each strand. The DNA to be copied enters the production line from bottom left. The whirling blue molecular machine is called helicase. It spins the DNA as fast as a jet engine as it unwinds the double helix into two strands. One strand is copied continuously and can be seen spooling off to the right. Things are not so simple for the other strand because it must be copied backwards. It is drawn out repeatedly in loops and copied one section at a time. The end result is two new DNA molecules.