The structure of DNA that Watson and Crick discovered suggests how genetic information is passed on. Before a cell divides the double helix unwinds and the two strands of the DNA molecule in the nucleus separate. Each strand is then used as a template for the construction of new DNA molecules. The replication of DNA is simple in theory, but much more complicated in reality. The precise details have only recently been worked out. Take a look at the animation called "replication mechanism" to see what actually happens at the molecular level.