Unreplicated chromosome

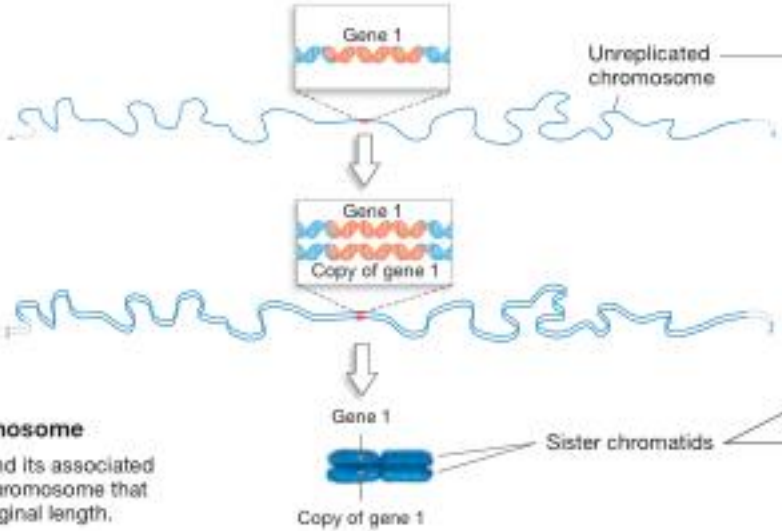
Consists of a single, long DNA double helix wrapped around proteins (which are too small to distinguish at this scale).

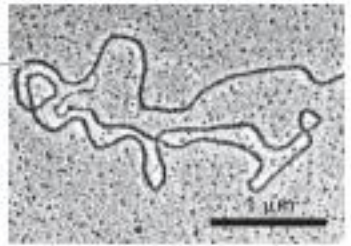
Replicated chromosome

Consists of two copies of the same DNA double helix.

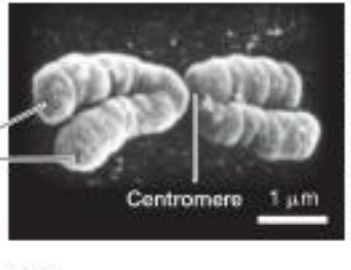
Condensed replicated chromosome

Consists of DNA condensed around its associated proteins, resulting in a compact chromosome that is 10 000 times shorter than its original length.





BioPhoto Associates/Photo Researchers, Inc./Science Source



Dr. Gopal Murti/Photo Researchers, Inc./Science Source

Figure 12.1 Changes in Chromosome Morphology. After chromosomes replicate, the two identical copies of the double-stranded DNA are attached to each other along their entire length. Early in mitosis, replicated chromosomes condense and sister chromatids remain attached at a region called the centromere.