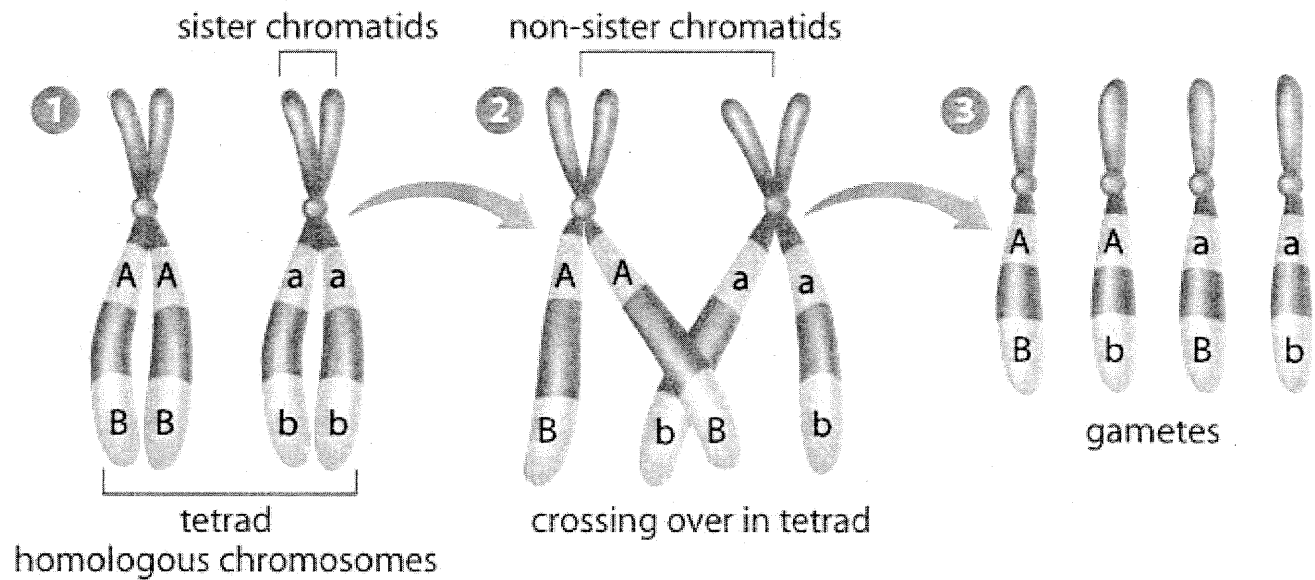


Crossing Over



Crossing over occurs at random between pairs of homologous chromosomes. In these chromosomes, upper-case and lower-case letters denote different alleles, or different versions of the same gene. (1) During prophase, homologous chromosomes form pairs. (2) Non-sister chromatids cross over each other and exchange segments of chromosomes. As a result, chromosomes in the gametes (3) contain new combinations of genetic material.