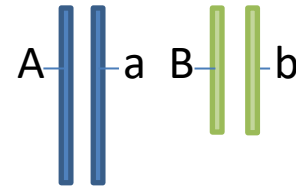


Aa Bb x Aa Bb

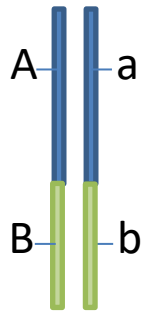


gametes

	 A — B	 A — b	 a — B	 a — b
 A — B				
 A — b				
 a — B				
 a — b				

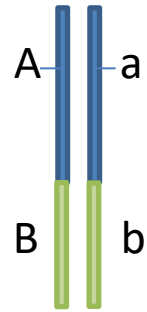
Mendel's law of independent assortment

Mendel, 1865 —————> when two or more characteristics are inherited, individual hereditary factors assort independently during gamete production, giving different traits an equal opportunity of occurring together.



Aa Bb x Aa Bb

gametes



Mendel's law of independent assortmentis not valid

Mendel, 1865 —————> when two or more characteristics are inherited, individual hereditary factors assort independently during gamete production, giving different traits an equal opportunity of occurring together.

Chiasmata are the sites of crossing over

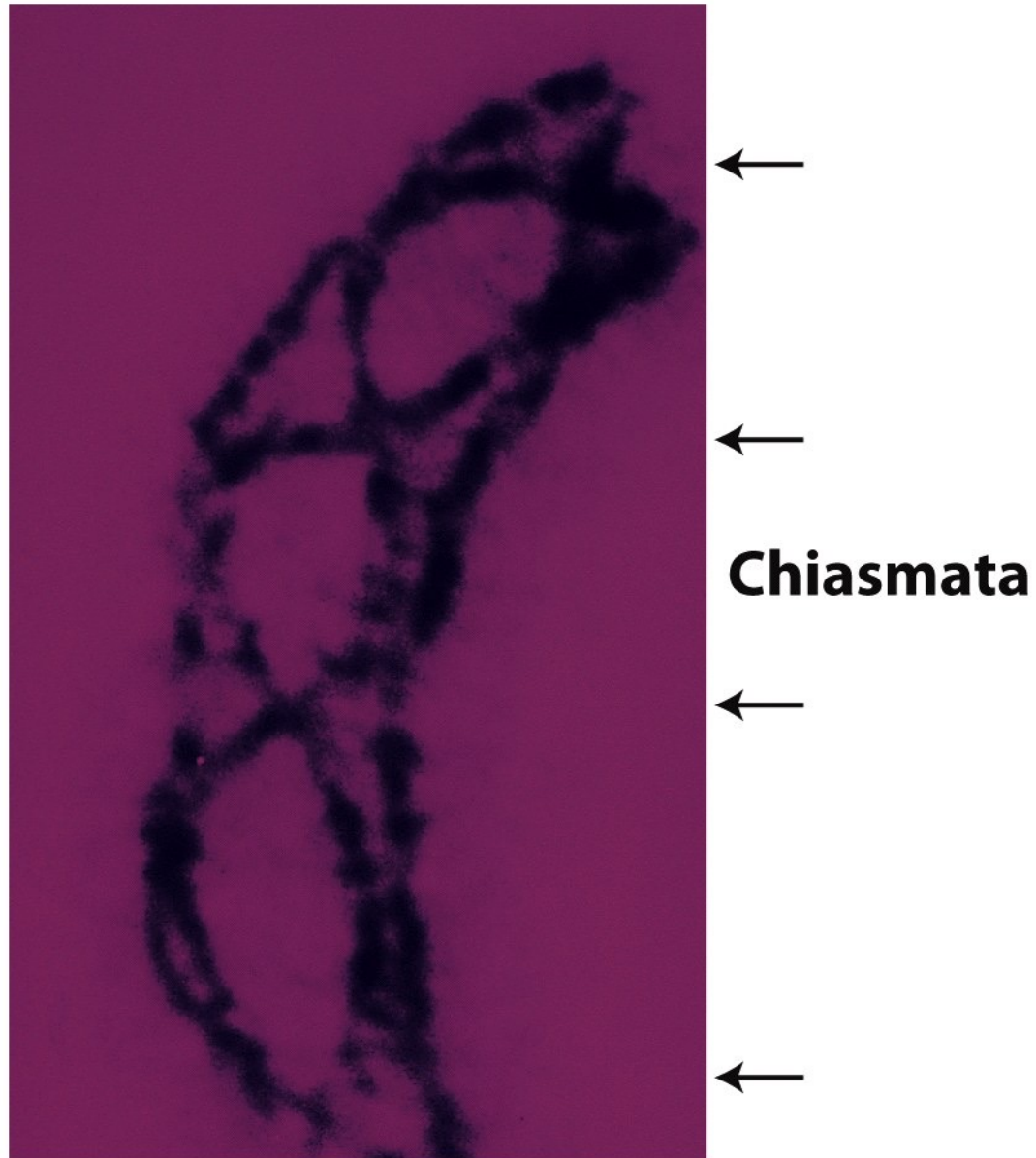


Figure 4-4

Introduction to Genetic Analysis, Tenth Edition

© 2012 W. H. Freeman and Company

- Recombinants are produced by crossovers

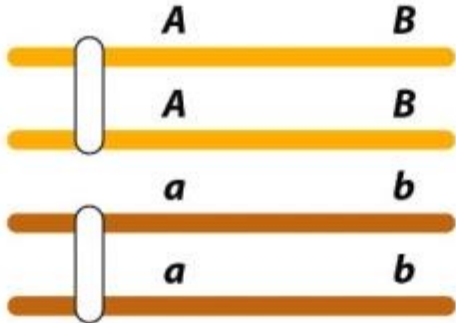
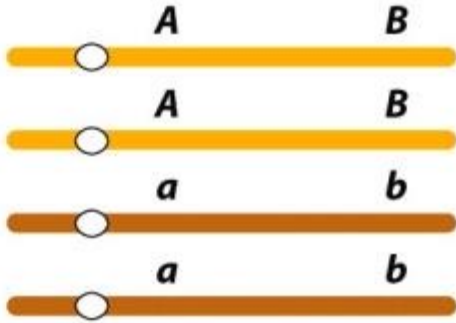
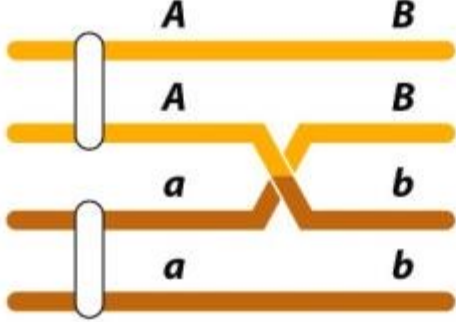
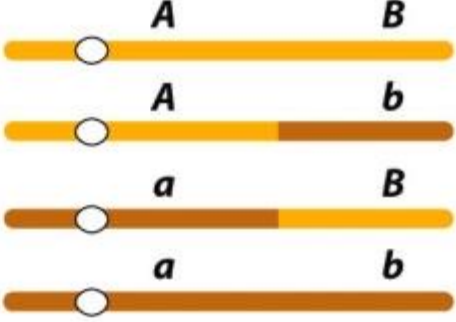
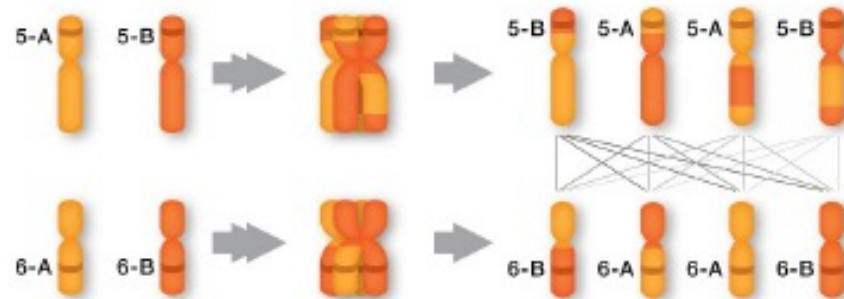
	Meiotic chromosomes	Meiotic products	
Meioses with no crossover between the genes			Parental Parental Parental Parental
Meioses with a crossover between the genes			Parental Recombinant Recombinant Parental

Figure 4-7
Introduction to Genetic Analysis, Ninth Edition
 © 2008 W. H. Freeman and Company

Genetic linkage

Not Linked

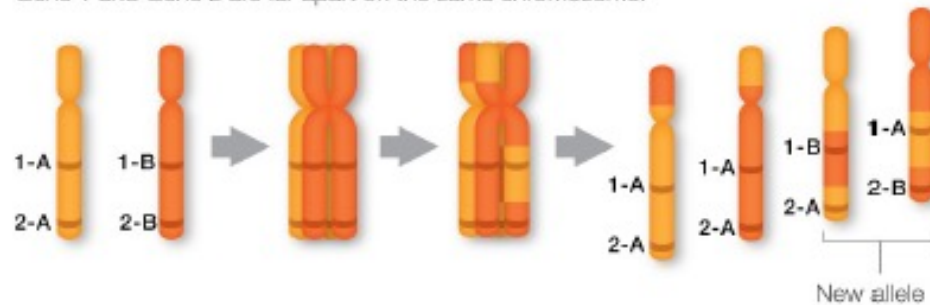
Gene 5 and Gene 6 are on separate chromosomes.



Alleles (on whole chromosomes) can be distributed to gametes in any combination.

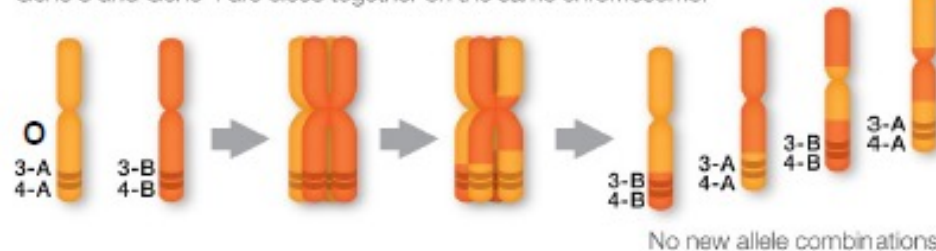
Not Linked

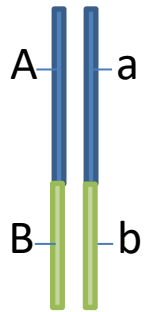
Gene 1 and Gene 2 are far apart on the same chromosome.



Linked

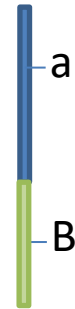
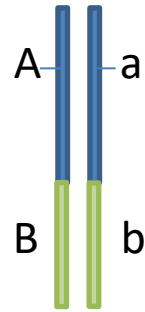
Gene 3 and Gene 4 are close together on the same chromosome.





Aa Bb x Aa Bb

gametes



Do the observed proportions fit to the expected ones?