

The double crossing
over: crossing over
occurs



**ASSIGN
BUSTER**

The other X chromosome of this female was of normal length, but the segment of the Y chromosome was translocated into its short arm, this chromosome had dominant gene *car-i-* (wild type allele of *car*, producing dull red eye color and the recessive gene *B*+wild type alleles of *B*, producing ovate eye shape). Stern taken test crosses of this female to a *car B*+ male. As expected the following four types of flies were recorded in test cross progeny 1) Red, normal (*car-i- B*+) 2) Red bar (*car-i- B*) 3) Carnation normal (*car B*+) 4) Carnation bar (*car B*) Two out of these four phenotypes viz., red, normal and carnation bar, are non crossover or non recombinant types. In contrast red bar and carnation normal are crossover or recombinant type. Stern concluded that, during meiosis, there is exchange of precisely homologous chromatid segments between homologous chromosomes (crossing over) and crossing over is responsible for the recombination between linked genes.

Types of crossing over:

1. Single crossing over:

In this case there is only one chiasma i. e. frequency of crossing over is very less.

2. Double crossing over:

Crossing over occurs at two points in the same chromosome pair.

3. Multiple crossing over:

Crossing over's occur at three or more points.