

V. Three-point test crosses

The three point test cross is a test cross in which one parent is heterozygous for three genes.

The steps for solving a three point test cross are:

1. assign parental genotypes (classes with the most progeny)
2. assign double recombinants (classes with the least progeny)
3. determine the gene order based on comparison of the parentals and the double recombinants (the gene in the middle "flips" or switches with respect to the other two flanking genes in the double crossover when compared back to the parental)
4. rewrite the cross if needed
5. determine the frequency of single crossovers between genes A and B and genes B and C (for the order ABC)
6. Draw map based on recombination frequency of 1% = 1 genetic map unit (m.u.)