

IV. Linkage between two genes

Procedure

1. Mate virgin black-vestigial (b vg) females with wild-type males.
2. After 1 week, remove parents.
3. Examine F₁ phenotypes and record number of flies examined.
4. Place 3-5 pairs of F₁ flies in a new vial.
5. Transfer step 4 flies to a new vial every 3-4 days. (2-3 vials/cross)
6. Examine F₂ phenotypes and record the numbers of flies examined.

Results

1. Data Recording Sheet

Date of beginning: _____

P. b vg females X wild-type (+) males

F₁:

		Numbers of flies			
Date	Sex	+	b vg	b	vg
	female				
	male				
	female				
	male				

F₂:

		Numbers of flies			
Date	Sex	+	b vg	b	vg
	female				
	male				
	female				
	male				

2. Based on these results, use diagrams to show the transmission of black and vestigial in two generations and the expected ratios of phenotypes in F₂. Compare your results with the expectation by chi square test.
3. As the transmission of black and vestigial might not fit the independent assortment law, calculate the map distance between them.