LABORATORY EXERCISE 2.	POPULAT	ION EFFECTS
exercise Protocol		
You may use the same trait as in Part 1 or offspring population size on observed phe numbers.	•	e a different one to examine the effect of However, use the same trait for all progeny
STEPS FOR THIS EXERCISE 1. Return to the FLY COLONY program	on Canvas.	
2. Select your mutant phenotype in on	e of the drop do	own boxes on the Parental screen.
3. Mate the flies through the F2 general a. 5000 offspring b. 500 c. 50 d. 10	ation using FOU	R DIFFERENT OFFSPRING numbers:
4. Record the results from each set of	matings on the	DATA SHEETS provided.
at your total progeny numbers fro	of each cross wi om the cross. Di is is your Observ	ill yield and enter in the boxes below. Then look vide the number of dominant offspring by the ved phenotypic ratio (round to the nearest ulation below. Observed Ratio
Describe what you see happening WHY you may be seeing somethin		d numbers versus the Expected ratios. Reflect o

DATA SHEET (Exercise 2) – **5000 Offspring**

NAME:										
TRAIT:				DUE	NOTVDEC /	CDOSSED.	Male	¬ х Г	Female	
IRAII:				PHE	NUTTPES	CROSSED:		」^ ∟		
CROSS DIAGRAM										
Parental		Г	Male			F	emale	٦		
Phenotype		Ĺ			x			_		
Genotype				x						
F1 Resul	F1 Results		Male			Female				
	Pher	otype						7		
	Gend	otype						Ī		
		_						_		
P	arents for	Г	Mal	e	\neg	F	emale	7		
		otype [X			_		
	Gene	otype			Х					
						phenoty	ype ratio	phenotyp	e ratio	
F2 Result	ts	Pre	edicted Seg	regation	n Ratio =					
Gend	lor	Dhon	otype	Gon	otype	Ev	p Number	Ohs	Number	
Gene		Fileii	Стуре	Gen	отуре	p Number	diniber Obs Nulliber			
						\dashv				
						_				
Chi-Squa	red Test (e	nter values	from F2 Gen	eration Pa	age. combir	ne sexes to	one phenotype)			
Phenotype		served	Expe			- E	(O-E) ²		O – E) ² / E	
TOTAL										
TOTAL										
			Observed	Chi – Sqı	uared Val	lue =	=			
			Degrees of	f Freedo	m (<i>df</i>)	=	=			
			Table Value (0.05)				=			
			Overall Co	nclusion	1	=	=			
CONCLUSIONS:										

DATA SHEET (Exercise 2) – **500 Offspring**

NAME:									_		
TDAIT.				DUE	NOTYPES (CDOCCED.	Male	П , г	Female		
TRAIT:				PHE	NOTTPES	CROSSED:		x [
CROSS DIAGRA	М										
Parenta	ls	г	Ma	le		<u>_</u>	emale	7			
Phenotype					х						
Genotype		x									
F1 Resul	F1 Results		Male			Female					
	Phei	notype									
	Gen	otype									
F	arents for	F2	Mal	e		F	emale	_			
	Phei	notype			х						
	Gen	otype			х			7			
		_						_			
F2 Decui	L.	Dua	adiated Cae		. Dotio -	phenot		phenot	ype ratio		
F2 Resul	ıs	Pre	edicted Seg	regation	i kalio =		:				
Gen	der	Phen	otype	otype	p Number	mber Obs Number					
						_					
Chi-Squa	ared Test (e	enter values	from F2 Gen	eration Pa	age, combir	ne sexes to	one phenotype)				
Phenotype		served	Expe			- E	(O-E) ²		(O-E) ² /E		
TOTAL											
TOTAL											
			Observed	Chi – Sqı	uared Val	ue =	=				
			Degrees of	m (<i>df</i>)	=						
			Table Value (0.05) =				=				
			Overall Co	nclusion	ſ	=	=				
CONCLUSIONS:											
	1										

DATA SHEET (Exercise 2) – **50 Offspring**

NAME:									
TRAIT:				PHEN	IOTYPES C	ROSSED:	Male	¬ х Г	Female
<u> </u>]	.011125			J ^ L	
CROSS DIAGRAN									
Parentals		Г	Ma	ale			Female	1	
Pl	Phenotype				x				
G	enotype				x				
F1 Result	F1 Results		Ma	ile		F	- emale	_	
	Pher	notype							
	Gend	otype							
Pa	arents for	F2	Ma	le		ı	Female		
	Pher	otype			x				
	Gend	otype			х			Ī	
		_							
F2 Result	·s	Pre	edicted Seg	areaation	Ratio = [phenot	ype ratio	phenoty	pe ratio
i z nesan		7.70	.a.otea seg	gi egation					
Gend	er	Phen	otype	Gend	otype	Ex	p Number	Obs	Number
-	-						one phenotype)		
Phenotype	Obs	served	Expe	cted	0 -	E	(O-E) ²	(O – E) ² / E
TOTAL									
			Observed	Chi – Squ	ared Valu	ue :	=		
			Degrees o	_			=		
			Table Valu			:	=		
			Overall Co			:	=		
CONCLUSIONS:									

DATA SHEET (Exercise 2) – **10 Offspring**

NAIVIE:									Famala
TRAIT:				PHEI	NOTYPES C	ROSSED:	Male		Female
CROSS DIAGRAM Parentals			Ma	ماد			Female		
	enotype	Γ	1410	110	x		Cinaic]	
Genotype		<u>Г</u>			×]	
		L						J	
F1 Results	F1 Results		Ma	le		Female		٦	
		otype						<u> </u>	
	Gend	otype							
Do	rents for	F2	Mal	la.			-amala		
Pa		rz iotype	Male		x	Female]	
		otype [x]	
		., L]	
_					г	phenot	ype ratio	phenotype	ratio
F2 Results		Pre	edicted Seg	gregation	n Ratio =		:		
Gende	er	Phen	otype	Gen	otype	Ex	p Number	Obs N	lumber
Chi-Squar	ed Test (e	nter values	from F2 Gen	eration Pa	age, combin	e sexes to	one phenotype)		
Phenotype	Obs	erved	Expe	cted	0 -	·E	(O-E) ²	(0) – E) ² / E
TOTAL									
			Observed	Chi – Sqı	uared Valu	ue =	=		
	Degrees of Freedom (<i>df</i>) Table Value (0.05)						=		
							=		
			Overall Co	nclusion		=	=		
CONCLUSIONS:							L		