Name: _____ Period: _____

[62] Analyzing Genetic Data - **Due Friday 9/27**

Essential Question

Does color follow COMPLETE DOMINANCE in *Nicotiana*?

Fill in the blanks and tables

Trait _____

Alleles _____ + _____

dominant recessive

Generation		phenotype	Parent 1 genotype	Parent 2 genotype
Grandparents	All homozygous	Green + yellow	G G	__ g
Parents	All heterozygous			

Period	Green	Yellow	Total	Ratio (grn:yel)
1	72	18		
2	53	23		
4	53	20		
6	77	21		
Total				

Ratio of plant color = $\frac{number\ of\ green\ plants}{number\ of\ yellow\ plants}$ = ___ : 1

a. Set up a punnett square for the parents of the *Nicotiana* seeds we used. Show all of the possible genotypes and phenotypes of our seedlings.

Genotype

GG ___ %

Gg ___ %

gg ___ %

Phenotype

Green _____ %

Yellow _____ %

ratio (grn:yel) _____ : _____

Name: _____ Period: _____

2. CLAIM: Circle the best claim below. Make sure you can back up your claim with the evidence!
    a. Seedling color **DOES** follow <u>complete dominance</u>.
    b. Seedling color **DOES NOT** follow <u>complete dominance</u>.
3. Explain the **EVIDENCE** that the *Nicotiana* seeds follow a pattern of **COMPLETE DOMINANCE**. Use **DATA** as part of your answer.

Highly Proficient

ADD PAPER IF ATTEMPTING.

We want to find out the <u>genotype</u> of one of the green plants (seedlings) that we grew. <u>What experiment could we do to find this out?</u> <u>Explain</u> how you would do it using evidence and vocabulary. Use punnett squares as evidence.

Genetics: understand why structural changes to genes may be harmful, beneficial or neutral to the structure and function of an organism.

Highly Proficient (4)	Proficient (3)	Close to Proficient (2)	Developing (1)
❑ Genotype problem is correct and well explained.. ❑ Evidence is used	❑ Results of the lab are connected to complete dominance. ❑ The genotype and phenotype of the parents are correct. ❑ Punnett square is done correctly ❑ Data is used as evidence.	❑ Some knowledge of genetics is shown. ❑ Data is collected. ❑ Some information is incorrect ❑ Work is incomplete or needs more detail.	❑ no understanding is shown ❑ Lab is mostly incomplete and/or incorrect.