

Genetics Review

KEY

Revise the statements below. Cross out the incorrect word/phrase and substitute in the most accurate/correct word/phrase that applies to genetics.

1. Robert Hooke studied pea plants in an effort to better explain traits being passed from parent to child.
2. Organisms that have two identical alleles are said to be heterozygous.
3. A Punnett Square shows the passing of the phenotype of the organism.
4. Two traits equally showing up and being seen together is known as incomplete pattern of inheritance.
5. Tall and short pea plants show a multiple allele pattern of inheritance.
6. **Which one of these is not like the others?**
 - a. Circle the item in the list that does not relate to the others. Explain why that word does not relate to the others.

AA BW	TT ii	recessive <u>OR</u> heterozygous
Pea Plant Inheritance	Mendel <u>Genotype</u>	Mendel studied inheritance of traits in Pea plants.
Sperm Law of Independent Assortment	Egg <u>Law of Segregation</u>	Law of independent assortment says that different traits are passed on separately in sperm & eggs to combine in any combinations.

↓ Dominant alleles cover/hide recessive alleles

7. **Identify** the examples as GENOTYPE or PHENOTYPE

- | | |
|-----------------------------------|---------------------------|
| a. <u>Geno</u> Tt | Pheno Tall |
| b. <u>Geno</u> Cc ^h | Pheno Gray (Chinchillian) |
| c. <u>Pheno</u> Black fur | <u>Geno</u> Bb |
| d. <u>Pheno</u> Round eyes | <u>Geno</u> rr |
| e. <u>Geno</u> Ai | Pheno Type A |
| f. <u>Pheno</u> Attached earlobes | <u>Geno</u> AA |

8. Identify the examples HETEROZYGOUS or HOMOZYGOUS

- a. Homo BB Hetero Bb
 b. Hetero Ai Homo AA
 c. Hetero SW Homo WW
 d. Homo tt Hetero Tt

9. Identify the pattern of inheritance {Dom vs Rec, Codom, Incompl, ~~Multiple Allele~~}

- a. ~~X or Co.~~ Orange and Black stripes on a tiger
 b. Incomp. Gray Fur (GG), Tan Fur (g'g'), White fur (gg)
 c. Incomp. Blue (BB), White (B'B'), Powder Blue (B'B)
 d. Co Blood Type A, B, AB or O
 e. Dom/Rec Yellow (Y_) or Green (yy) seeds
 f. Dom/Rec Square (S_) or Round (ss) chin
 g. Co Blue and Yellow spots on a flower

10. I Disagree: After reading the statements, completing and analyzing the model, choose the student whom you disagree with concerning the model.

A seed company is trying to create a seed with the traits that all florists are wanting to purchase for their customers. The seed company is breeding Cammillia flowers. Flowers can have white petals, red petals, or red & white petals. The customers of florists want to buy the red and white petal flowers. The seed company picks the parent plants of RR and WW to breed together. Then breeds the first family generation together to see if they get different results. The Punnett squares are listed below.

Parent Generation Cross

	R	R
W	RW	RW
W	RW	RW

F1 Generation Cross

	R	W
R	RR	RW
W	RW	WW

~~Kara~~: The best chance for red & white petals to appear in the offspring would be to cross a pure red flower with a pure white flower.

Lorenzen: The red flowers don't appear in the F1 generation because they skipped a generation.

~~Phil~~: In this codominant pattern of inheritance, getting red and white petal offspring from a homozygous red and a homozygous white petal parent (RR x WW) we expect to happen at a probability of 100%.

I disagree with ~~Lorenzen~~ Lorenzen because this is codominant
 (Phil is correct) + Kara
 is right (P1).