

Bio 3

Ch. 7 Genes + Inheritance

11-15-12

- > Fish odor syndrome: 2 copies of FMO3 (from ea parent) required; if only one version inherited ≠ syndrome
- > Heredity: passing characteristics to your offspring
- > Multiple-gene traits exist too

- > Pre-Mendel, in 1800's the theory = a tiny human baby inside sperm
 - Gregor Mendel
 - worked w/ pea plants, cross-pollinating
 - contributor to law of segregation + independent assortment
- > Law of Segregation:
 - 2 distinct genes segregated into separate sperm/egg
- > Law of independent assortment: one char of one gene has no influence on the next gene

- > Phenotype: outward appearance of individual
- > Genotype: genetic composition
- > Possible Genotypes
 - Homozygous Dominant
 - Heterozygous
 - Homozygous Recessive

- > Punnett Square + Pedigree Charts
 - used by breeders to help determine genetic results

Punnett Squares

- 1) Write / Read Key
- 2) Determine Parents' genotypes
- 3) Determine Gametes (that can be produced)
- 4) Draw \square & fill in gametes
- 5) Fill in Table
- 6) Count GBP

1) In Corn K = yellow kernel k = white kernel

2) (Kk) (kk)
 ↑
 (if mom = white and dad = yellow, then, Kk)

3) $(K) (k)$ $(k) (k)$
Genotype Phenotype

6) $Kk - 11 (2)$ Yellow
 $Kk - 11 (2)$ White

4)

$\frac{K}{k}$	K	k	
k	Kk	kK	← probability chart
K	KK	kK	

5)

Asparagus

Purple scales recessive to green scales

G = Green g = purple

♂

♀

Gg

Gg

Gg

Gg

♂	G	g
♀	G	g
G	GG	Gg
g	Gg	gg

Genotypes

GG - 1

Gg - 11

gg - 1

Phenotypes

Green - 111

Purple - 1