

## Punnett Squares

**Homozygous/Purebred Recessive**

(Both Lower Case, bb)

**Homozygous/Purebred Dominant**

(Both Capital, BB)

**Heterozygous**

(One Capital One Lower Case, Bb)

- Highlight the genotypes that are homozygous dominant. TT Bb DD Hh zz ee Gg
- Highlight the genotypes that are heterozygous. Ff MM qq RR tt Ee jj
- Highlight the genotypes that are purebred recessive. Kk LL nn Oo PP aa HH
- Highlight the genotypes that are hybrid. TT Bb DD Hh zz ee GG
- Highlight the genotypes that are homozygous recessive. Ff MM qq RR tt Ee Jj

**Genotype:** The two letters used to represent a trait.

The letters can be capital (dominant) or lowercase (recessive)

**Phenotype:** Words that explain what the two letters of the genotype stand for and explains if the offspring will have that trait or not.

- Determine the phenotype for each genotype. Round (R) shape is dominant to square (r).  
RR  Rr  rr
- Determine the Phenotype for each genotype. Brown eyes (B) are dominant to green eyes(b).  
bb  BB  Bb
- Determine the Phenotype for each genotype. Black fur (B) is dominant to white fur (b).  
Bb  bb  BB
- Determine the Phenotype for each genotype. Tall stalks (T) are dominant to short (t).  
TT  Tt  tt
- Determine the Phenotype for each genotype. Freckles (F) are dominant to no freckles (f).  
Ff  ff  FF

Set up the Punnett Squares, with the parent's alleles, fill in the boxes for the offspring and answer the questions.

11. Blue (B) body color is dominant to yellow (b). Parent 1 = BB, Parent 2 = bb

	B	B
b	Bb	Bb
b	Bb	Bb

- What is the chance of having yellow-bodied offspring?  %
- What is the chance of having Blue-bodied offspring?  %

12. Brown hair (B) is dominant to blonde (b). Parent 1 = Bb, Parent 2 = BB


- What is the chance of having brown-haired offspring?
- What is the chance of having blond-haired offspring?

13. Red eyes (R) in fruit flies is dominant to white eyes (r). Parent 1 = rr, Parent 2 = Rr


- What is the chance of having a red-eyed offspring?
- What is the chance of having a white-eyed offspring?

14. Brown eyes (B) in dogs is dominant to blue eyes (b). Parent 1 = bb, Parent 2 = BB


- What are the chances of having brown-eyed offspring?
- What is the chance of having blue-eyed offspring?

15. Being able to roll one's tongue (R) is dominant to not being able to roll one's tongue (r). Parent 1 = RR, Parent 2 = Rr


- What is the chance of having offspring that cannot roll their tongue?
- What is the chance of having offspring that CAN roll their tongue?