

offspring.

5. Genotype refers to the genetic make-up of an organism.
6. Phenotype is the physical trait that is expressed in an individual.
7. allele are the different forms of a gene for any given trait.
8. For each trait, there are 2 allele possibilities.
9. When the expression of one allele is masked by the presence of another, it is said to be Recessive .
10. When an allele masks the presence of another allele, it is said to be Dominant .
11. When both alleles of a parent or offspring are identical, one is said to be Homozygous .
12. A heterozygous genotype is when the alleles present are different , such as Bb.
13. It is proper to put the Dominant allele before a recessive allele when determining the genotype of the offspring in a Punnett square.
14. The only way to have a recessive trait expressed is to have both alleles be Recessive .

		Parent one (Bb)	
		B	b
Parent two Bb	B	BB	Bb
	b	Bb	bb

Study the sample Punnett Square. Let B represent Brown eyes and b represent Blue eyes. Each small square within the big square is 25 % So the total is 100% Any time you see a capital letter in the small squares (which are the four possible outcomes of the crossing between two parents) the dominant trait will be expressed. Here, the parents are **Heterozygous (Bb)**
25% of the offspring has homozygous blue eyes. (**bb**)
The phenotype of 50% of the offspring are **Brown** heterozygous eyes.

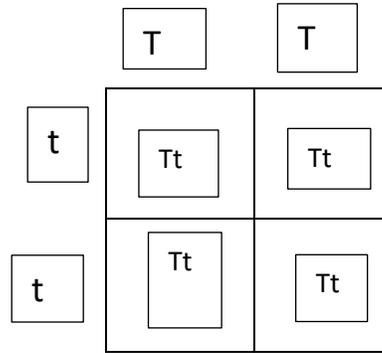
15. Set up the Punnett square for each of the crosses listed below.
Dominant trait: B (brown hair) Recessive trait: b (blonde hair) (5x3=15)

What percentage of the offspring will have
Brown hair? 75 %

	B	b
B	BB	Bb
b	Bb	bb

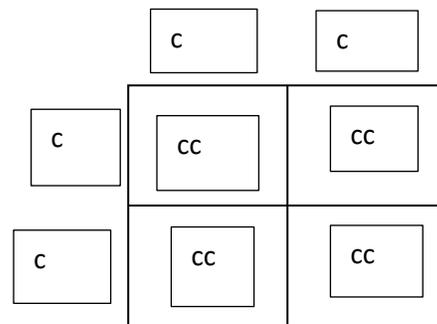
16. A TT (tall) plant is crossed with a tt (short plant).

What percentage of the offspring will be short? 0 % (5x3=15)



17. Dominant trait: C (circular flower) Recessive trait: c (square flower). A homozygous square flower is crossed with another homozygous square flower. A. Fill out the Punnett Square (8)

B. What are the genotypes of the parent flowers?
cc X cc (2)



C. What percentage of the offspring will have square flowers? 100 % (2)

D. What percentage of the offspring will have circular flowers? 0 % (2)

18. In guinea pigs, the allele for **short hair** is dominant. Let **S** represent **dominant** allele and **s** represent **recessive** allele. (4)

What genotype would a **heterozygous** short haired guinea pig have? Ss

What genotype would a long haired guinea pig have? ss

19. For each of the genotypes below, determine the **phenotype** (5x2=10)

Purple flowers are dominant to white flowers: PP Purple

Brown eyes are dominant to blue eyes Bb Brown

Round seeds are dominant to wrinkled rr wrinkled seeds

Bobtails are recessive (Long tails dominant) tt Bobtails

Round seeds are dominant to wrinkled Rr Round seeds

