

_____ The passing on of traits from parents to offspring.

_____ The parts of chromosomes that control the traits.

Big Ideas:

- Each person carries 2 genes for every trait. (one from mom and one from dad)
- The genes can be:
 - Dominant- the trait will always show
 - Capital Letter
 - Recessive- the trait will only show if both genes are recessive; the trait is “hidden” by a dominant gene
 - Lower Case Letter
 - Genotype: describes a person’s genes
 - Phenotype: describes a person’s traits based on their genes.
- For each trait, a person can be
 - Pure Dominant (TT)
 - Hybrid (Tt)
 - Pure Recessive (tt)
- When offspring inherit their parents’ genes, they can be combined in different ways.
- A PUNNETT SQUARE is a tool that helps you predict the probability of traits in offspring.

Examples:

1. Jeff bought two fish from the pet store. The male fish is blue, while the female is red. In this species, the blue color is dominant (D) while red is recessive (d).
 - Male Fish: DD (pure dominant)
 - Female: dd (pure recessive)

What is the probability that the offspring will be

- a. Pure Dominant? _____
- b. Pure Recessive? _____
- c. Hybrid? _____
- d. Blue? _____
- e. Red? _____

2. Two rose bushes were cross-pollinated. One rosebush had yellow roses, a dominant trait, while the other had white roses, a recessive trait. The rose bushes had genotypes as follows:

Yellow rose: Yy

White rose: yy

What is the probability that the offspring will be:

- a. Pure Dominant? _____
- b. Pure Recessive? _____
- c. Hybrid? _____
- d. Yellow? _____
- e. White? _____

3. A mama dog at the Humane Society is about to give birth to a litter of puppies. The mama and papa dogs both have curly fur, which is a dominant trait.

Mama: Cc

Papa: Cc

What is the probability that the offspring will be:

- f. Pure Dominant? _____
- g. Pure Recessive? _____
- h. Hybrid? _____
- i. Curly fur? _____
- j. Straight fur? _____
