

Name _____

Date _____

Trait	heredity	phenotype	alleles
Gene	genotype	incomplete dominance	recessive allele

1. A unit that determines traits is called a _____
2. A(n) _____ is only expressed in an organism if a dominant allele is not present.
3. Seed pod color is an example of a _____ in pea plants.
4. The organism's _____ cannot be seen because it is the actual alleles of a gene that the organism contains.
5. A set of traits that an organism receives from its parents is called _____.
6. Organisms have at least two _____ for each gene - one from each parent.
7. _____ is when the phenotypes of two alleles blend together.
8. The organism's _____ for a given trait can be seen because it is the form that the organism displays.

Short answer:

1. Who is known as the father of genetics? _____
2. What did he use in his experiments? _____ why?

3. What two colors did he cross pollinate? _____
4. What color were the first generation of flowers? _____
5. Draw and label the Punnett Square for Mendel's first experiment (just the color of the flower) use P and p.

6. In the above Punnett Square which trait is dominant? _____ which is recessive? _____

7. Who continued the work of Mendel in 1902 when he examined the nuclei of grasshopper? _____

8. List the five basic laws of genetics:

9. Use the following information for the next problems:

S - straight thumb s - hitchhiker's thumb

Male parent - Ss

Female parent - ss

A. What is the phenotype of the father? _____

B. What is the phenotype of the mother? _____

C. Make a Punnett Square and calculate the percentage of their child to have a hitchhiker's thumb? _____ what is the percentage their child will have straight thumb? _____

10. True or False: Males determine the sex of the offspring in humans.

11. True or False: During meiosis the sex chromosome pairs separate and females always produce eggs with a Y chromosome.
12. True or False: Male chromosomes have a genotype of XY.
13. If a flower has incomplete dominance with a R (red) and W; (white) what color is its offspring? _____
14. What are polygenic traits? _____

15. List environmental factors that can influence traits. _____

Bonus:

1. Mrs. Duggar had 6 girls in a row. She is now pregnant with her 7th child. What is the probability of her having another girl? _____
2. Draw and label the process of meiosis.