

Names _____

Worksheet: Shiba Inu Genetics

HONORS BIOLOGY: UNIT 6

BACKGROUND: The smallest of Japanese native breeds, the Shiba Inu was originally developed for hunting by sight and scent in the dense undergrowth of Japan's mountains. Bred to flush birds and small game, these gutsy characters would hunt wild boar as well. These days, they are primarily kept as pets here in the United States and in their native Japan where they continue to be the most popular breed. Almost wiped out during World War II, those that did not perish in bombing raids succumbed to distemper after the war. Fortunately, in the postwar era breeding programs were established with the remnants of various bloodlines to produce the breed as we know it today. A member of the Non-Sporting Group, the Shiba Inu was recognized by the American Kennel Club in 1992.

Shiba Inus come in three colors, red, red sesame, and black and tan. These colors are eligible to compete in AKC sanctioned shows. Cream-colored, white or pinto Shibas are ineligible to be shown because such colorations are seen as a serious fault.

*Your task is to determine the “mode” of inheritance in the Shiba Inu coat color. Use the genetic crosses on the handout to determine the **genotype** for each coat color. You will need to select letters to represent the genotype of each color (phenotype) and complete a Punnett square of each cross shown.*

PHENOTYPE	GENOTYPE
RED	
SESAME	
BLACK AND TAN	
CREAM	

BONUS QUESTION: My Shiba Inu named Kona is a Sesame. What were Kona's parents genotypes?

PUNNETT SQUARES: *Show Punnett squares and genotypic and phenotypic ratios.*

1. CREAM X CREAM

2. RED X RED

3. B&T X B&T

4. RED X B&T

5. SESAME X SESAME

6. SESAME X RED

7. SESAME X B&T