Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Score \_\_\_\_\_\_\_\_/56 points

**Punnett Squares - Involving 2 Traits**

In a dihybrid cross, when two traits are considered, the number of possible combinations of the offspring increases. Suppose that brown hair (B) is dominant over blonde hair (b) and brown eyes (E) are dominant over blue eyes (e).

**What percent of offspring could be expected to have blonde hair and blue eyes? \_\_\_\_\_\_\_\_\_\_% (Ques #1) \_\_\_\_\_\_\_ % (Ques #2)**

1. The Father has brown hair (heterozygous) and brown eyes (heterozygous) and the mother has blonde hair and blue eyes.
	1. Genotype of Father: **BbEe**
	2. Genotype of Mother: **bbee**
	3. Complete the rest of the punnett square.

d. What are and how many genotypes are there?

 e. What are and how many phenotypes are there?

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| --- | --- | --- | --- | --- |
| ----------------- | **BE** | **Be** |  |  |
| **Be** |  |  |  |  |
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|  |  |  |  |  |

**Genotypes**  **Phenotypes**

**2. Both parents have brown hair (heterozygous) and brown eyes (heterozygous).**

 a. Genotype of Father: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b. Genotype of Mother: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 c. Complete the punnett square.

 d. What are and how many genotypes are there?

 e. What are and how many phenotypes are there?

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**Genotypes**  **Phenotypes**

**What is the phenotypic ratio of individuals with brown hair/brown eyes; brown hair/blue eyes; blonde hair/brown eyes; blonde hair/blue eyes: \_\_\_\_\_\_\_\_\_\_: \_\_\_\_\_\_\_\_ : \_\_\_\_\_\_\_\_: \_\_\_\_\_\_\_\_\_**