

**GRADE 12 Biology**  
**Mendel's Laws Review**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Instructions.** Give explanations in complete sentence form unless otherwise indicated.

1. **Mendel's Laws.** List Gregor Mendel's two laws with a bullet explanation of both.

2. Let the letter 'T' represents the gene that causes tongue rolling, and it is dominant over not rolling the tongue.

- Show a cross between two heterozygotes.
- List the genotypes and phenotypes of the children
- Explain.** Why are phenotypic percents different from genotypic percents?

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**Genotypic ratio(s):**

**Phenotypic Ratios:**

3. Dark hair is dominant over light-coloured hair in humans. It is possible, however, for dark-haired parents to produce a light-haired offspring even if most of their children are dark-haired.

Explain which of Mendel's laws underlies an explanation for this.

4. It is possible to see any combination of traits in individuals and most people are a mix of both dominant and recessive traits. For example, people with black hair can have blue eyes.

**Explain.** How is it possible for people to have both dominant and recessive traits?

5. Parents have children.

a. **Explain.** Why are children not identical copies of their parents?

b. **Explain.** Why are children of the same parents not identical to each other?

6. A brown-eyed man whose father was brown-eyed and whose mother was blue-eyed married a woman whose father and mother were both brown-eyed. Brown eyes is dominant. The couple has a blue-eyed son. Fill in the 'pedigree' chart. (some people may have more than one option for genotype and phenotype — so put both if necessary)

