**When I reach the end of Standard 4 in 9th Grade Biology,**

**these are the things I should be able to do:**

**Standard 4**

Objective 1:

* **I can** explain the significance of meiosis and fertilization in genetic variation.
* **I can** compare the advantages/disadvantages of sexual and asexual reproduction to the survival of species.
* **I can** defend a perspective of a biological issue related to chromosomal mutations.

Objective 2:

* **I can** explain Mendel's laws of segregation and independent assortment, and their role in genetic inheritance.
* **I can** use Punnett squares to effectively demonstrate mono- and di-hybrid crosses involving dominant/recessive alleles, incomplete dominance, codominance, and sex-linked traits.
* **I can** relate Mendelian principles to modern-day practices of plant and animal breeding.
* **I can** analyze bioethical issues and consider the role of science in determining public policy.

Objective 3:

* **I can** use a model to describe the structure of DNA.
* **I can** explain the importance of DNA replication in cell reproduction.
* **I can** explain how DNA codes for proteins.
* **I can** describe how mutations may affect gene expression.
* **I can** cite examples of mutagens.
* **I can** outline the history of DNA research (e.g., genetic engineering, cloning, gene splicing).
* **I can** explain the pros and cons of genetic engineering.
* **I can** explain the pros and cons of cloning.