Subject: Science Grade: Ninth - Biology

Standard: #4 The Living Environment

Key Concept: The information passed from parents to offspring is coded in DNA molecules.

Generalization: Each person's DNA is unique. DNA may be modified due to changes in the nucleotide bases.

Background:

Students have been studying about genetics and the role of DNA. They are familiar with the terminology (nucleotide, triplet, purine, pyrimidine, etc.), have discussed base pairing, fragmentation and other issues related to the topic of DNA. This lesson allows each tier to engage in an enrichment activity that is based on the work of one of three women scientists whose work focuses on some aspect of DNA.

The three women were chosen from the book, Women Life Scientists: Past, Present, and Future, ISBN: 1-890251-00-3.

This tiered assignment is based on student scores on a test covering the text material. The basic tier is for students who are still struggling with the concepts. The grade level tier is for students who have a good general understanding of the topic and the advanced tier is for those who have mastered the topic.

This lesson is tiered in ***content*** according to ***readiness.***

Tier I: ***Basic***

These students will study the work of Alice Huang and complete Activity 1 on pp. 236-239, Mutations.

Tier II: ***Grade Level***

These students will study Barbara McClintock and complete Activities 1-3 on pp. 321-324, Transposons.

Tier III: ***Advanced***

These students will study Lambratu Rahman and complete Activities 1 & 2 on pp. 278-287, DNA Fingerprinting.

Assessment:

Teacher observation and student interviews during the investigation will serve as formative assessments. Each activity can be assessed according to the accuracy of the data collected, logical conclusions based on the results, ability to follow the procedure outlined in the activity, and depth of thought shown in answers to the discussion questions provided with each activity. Students should have opportunities to share their activities with each other through group discussions about the contributions of these scientists.