Lesson 6: “Genetics and People”

I. Time: 50 minutes

II. Materials:
   a. Handout: “Dominant and Recessive Traits in Humans”
   b. PowerPoint: “Dominant and Recessive Traits in Humans”
   d. Cups
   e. Handout “Gene Babies”
   f. Coloring Pencils or Crayons
   g. Scissors
   h. Tape or Glue Sticks

III. Objectives:
After successful completion of the lesson, students will be able to...
   a. Identify and observe dominant and recessive traits in humans
   b. Demonstrate that dominant and recessive traits are inherited randomly from parents by making a model of a person showing inherited traits.

Maryland State Objectives:
   a. Expectation 1.2 The student will pose scientific questions and suggest investigative approaches to provide answers to questions.
      i. Indicator 1.2.7 The student will use relationships discovered in the lab to explain phenomena observed outside the laboratory.
   b. Expectation 1.5 The student will use appropriate methods for communicating in writing and orally the processes and results of scientific investigation.
   c. Expectation 3.3 The student will analyze how traits are inherited and passed on from one generation to another.
      i. Indicator 3.3.1 The student will demonstrate that the sorting and recombination of genes during sexual reproduction has an effect on variation in offspring.
      ii. Indicator 3.3.2 The student will illustrate and explain how expressed traits are passed from parent to offspring.

IV. Lesson:
   a. Opening:
      i. Show students pictures of your “parents”. Have them be famous people that are a different race than yourself. Ask the students how they know they are not your parents. Tell them that they already know something about genetics.
      ii. Again bring up the relationship between phenotype and genotype with students and also relate to desired traits in crops. It is important to note that dominant does not mean better and that different people prefer different traits in a significant other. Even though we look different, that does not make one person superior and another inferior.
   b. Development:
      i. Pass out the “Dominant and Recessive Traits in Humans” handout.
         1. Open the PowerPoint “Dominant and Recessive Traits”.
         2. Have students pair up so that they can observe each other to identify traits in each other.
         3. You may want to add a section for PTC paper testing and other chemical taste tests at the bottom of this handout.
   c. Closing:
      i. Summarize observed frequencies of dominant and recessive traits in the classroom. Ask students why a recessive trait may be more common than a dominant one.

V. Suggested Assessments:
   a. You may want to have students select traits for a fictional person or creature using random assortment. This can easily be simulated using coin tosses. A suggested resource for this activity is listed in the next section.
   b. This lesson's objectives will be assessed at the end of the unit during a formal summative exam.
VI. **Related Links/Resources:**

a. Dragon genetics at [http://www.google.com/url?q=http://www.biologyjunction.com/dragon%2520genetics%2520lab2.doc&sa=X&ei=XnBgTJSVFMP68Ab5-LCzDQ&ved=0CBQQzgQoADAA&usg=AFQjCNFVfks7sCUteEJuvbfb3OeXy3wkw](http://www.google.com/url?q=http://www.biologyjunction.com/dragon%2520genetics%2520lab2.doc&sa=X&ei=XnBgTJSVFMP68Ab5-LCzDQ&ved=0CBQQzgQoADAA&usg=AFQjCNFVfks7sCUteEJuvbfb3OeXy3wkw) gives students a good assignment for creating their own organism (dragon) using dominant and recessive traits.