Monday Week 2 - **Smiley Face Activity**

Period: 55 minutes

Subject: Biology I Date: January 2014

Objectives:

* TSW complete an activity that reinforces the concepts of genetics that we have learned thus far (5b DOK 2).

Materials:

* PowerPoint, Dry Erase Markers

Bell Work (16 minutes):

* Take out a pencil and put the correct heading on top of the quiz. The title of the assignment is, “Mendelian Genetics Quiz.” Use the next five minutes to silently study the material that has been covered over the past week.
* Students will take a short quiz before beginning the lesson.

Set (4 minutes):

* Ask students if they look more like their mother or more like their father, and then ask which traits they get from each of their parents.
* “Over the last few days we’ve been seeing how traits are passed down from parents to their children. Because half of your genes come from your mother and half of your genes come from your father, you end up being a blend or combination of their traits. This is why you end up looking like both of them, instead of looking like just one of them. Today we’re going to be doing an activity that reinforces what we’ve already learned about genetics.”

Procedures (30 minutes):

1. 26 minutes. Students will work in partners to complete an activity that involves crossing a series of traits, determining the genotype of an offspring based on this cross, and then drawing the offspring to illustrate the phenotype based on the genotypes that arose from the cross. Each set of partners will be given two poker chips, each chip representing one of the parents. The parents are heterozygous for all over their traits; thus one side of each coin represents the dominant allele, while the other side of each coin represents the recessive allele. Students flip the coins to determine the genotype of the offspring, and this is done for all traits. After the genotypes for all of the traits are obtained, students draw the phenotype of the offspring.
2. 4 minutes. If there is time at the end of the period, the answers to the quiz will be gone over as a class, and students will have the opportunity to show off their creations from the activity. Students will complete a full lab report to be submitted by Friday. (see attached lab report rubric).

Closure (3 minutes):

* “Today we created smiley faces using the principles of genetics that we have already learned. We saw that offspring receive half of their genes from their mother and half of their genes from their mother. Since alleles can be either dominant or recessive and because there are so many different genes that make up an individual, interactions occur between alleles and different genes to produce the complicated phenotypes we see in people. This is why the way everyone looks is completely unique; you make look a little like each of your parents, but no one else in the world has your combination of genes.”
* Orally quiz students on the genetics that we have learned thus far.
* “Tomorrow we’re going to look at another pattern of inheritance that goes beyond the work of Mendel; we’re going to be taking examining codominance.”

Assessment/Evaluation:

Objective: TSW complete an activity that reinforces the concepts of genetics that we have learned thus far (5b DOK 2).

* Informal: While students are working on the Smiley Face Activity (M), the teacher will be walking around and discussing the work with students individually to ensure that they have a grasp on the concepts of genetics that we have learned thus far (C).
* Formal: A test will be given at a later date (M) that covers genetics terminology and the different patterns of inheritance (C), and the grade will be recorded in a grade book (D).