**TASK DESCRIPTIONS** – Student handouts follow descriptions (although the spacing would be increased to allow room for student answers, the content is exactly as I would give to students)

**Tasks #1-6 - Journal Entries Description**
Over the course of six weeks, students will learn to identify the skills of the scientific method in a variety of scientific articles. Students will then reflect on them by answering questions in their journals. Each task focuses on a different aspect of the scientific method.

**Task # 7 - Falling Pennies Lab Description**
Students start with 10 pennies all standing on their side. They then pound the table to get the pennies to fall over and count how many fall heads up or heads down. This activity is to get students to think about ways to test their hypotheses. This activity also provides an opportunity to discuss variables. Usually at least one group blows the pennies over instead of pounding the table to get them to fall on their own. This provides an excellent stimulus to then discuss biases in results based on the method used. It also provides an opportunity to introduce variables in a general sense.

The handout for this lab activity is primarily blank because students will fill in their own hypothesis, procedure, data and conclusion. I do give them the outline to fill in because this reinforces the format that I expect them to design later in the year.

**Task # 8 - Foam Height Test Description**
This activity asks students to design a procedure to test their hypothesis about whether regular or diet pop will produce a greater foam height. In this case, they will design an experiment and perform that experiment in class. Once again, the handout for this lab activity is primarily blank because students will fill in their own hypothesis, procedure, data and conclusion. I do give them the outline to fill in because this reinforces the format that I expect them to design later in the year.

**Task # 9 - Ammonia Factory Project Description**
This computer simulation provides students an opportunity to pretend they are an ammonia factory owner and they have to generate as much product and profit as possible. Students will log onto a web site that simulates an ammonia factory. There is first a tutorial and quiz for students about dependent, independent, and control variables. Then students can test the effects of changing the four different variables using this computer simulation. They will test their own hypothesis and manipulate the variables until they have achieved the maximum amount of ammonia and profit.

This process requires several days in the computer lab but it is well worth the time for them to see the effects of changing variables. Each day has its own handout so that students are held accountable for each day’s work.

**Task # 10 – Determining the Density of a Plastic Pipette Description**
This task is done as a lab assessment at the end of the chapter that includes density. It requires students to use what they have learned about density as well as the scientific method to design an experiment to determine the density of the plastic used in making the given pipette.

**Task # 11 – Black Box Activity Description**
This task is to give students the perspective of designing experiments to test the invisible. They are required to use observation skills and deductive reasoning in order to determine what the inside of a variety of obscertainers look like and draw them. An obscertainer is a circular flat container with a ball some obstruction inside. By listening and feeling the ball roll around (or not roll around), the students then deduct and draw what the inside looks like. This simulation is then compared to how scientists use observations to deduct things they cannot directly see such as the structure of an atom.

**Task # 12 – Periodic Table Activity**
Students are given a variety of cards with properties of different elements on them. They are then asked to arrange them in a logical order and predict the properties of the missing elements.