**Appendix 1. Implementing the Common Core Standards**

North Carolina Department of Public Instruction Essential Standards and Questions

Students should be able to write fluently about and relate these sentences to any experiments/activities/demonstrations regarding each of these topics

- I can give real world examples of physical and chemical changes.
- I can perform an experiment that shows both physical and chemical changes taking place.
- I can perform an experiment that shows the mass of the product as being equal to the mass of the reactant in a chemical reaction that takes place in a closed container.
- I can balance a chemical equation so that the mass of the product is to the mass of the reactant.

These particular EQs can be answered with some simple experiments and demonstrations included in this unit. In each experiment/demonstration, I will be answering these questions in the activities area.

8.P.1.3:

1. How can you tell if a chemical change has taken place?
2. How do chemical changes affect the chemical makeup of a substance?
3. How do physical changes affect the chemical makeup of a substance?

8.P.1.4:

1. How does the mass of the product compare to the mass of the reactant after a chemical reaction has taken place in a closed container?
2. Explain how the mass might compare if the reaction took place in an open container.

North Carolina Department of Public Education 8th Grade Science Standards applicable to this unit.

- 8.P.1.3: Students know that physical properties involve things that can be measured without changing the chemical composition of the element. Physical properties include appearance, texture, color, odor, melting point, boiling point, density, solubility, polarity and many others. Chemical properties are those that will change the chemical makeup of the substance after a chemical change has occurred. Chemical properties include flammability and reactivity. Students know that a chemical change has taken place if the following are observed: gas production (bubbling or an odor), formation of a precipitate, production of heat and a color change.

- 8.P.1.4: Students know that the mass of the product is always the same as the mass of the reactant after a chemical reaction has taken place. Students know that mass cannot be created or destroyed.