Name:_____ Period:_____

STEEL WOOL AND 9-VOLT BATTERY EXPERIMENT

THE EXPERIMENT

This steel wool and 9-Volt battery experiment is a fun, easy way for middle and high school students to learn about electricity, physics, and chemistry. It only requires 3 materials and some adult supervision.

MATERIALS

– Steel Wool
– 9-Volt battery
– Fire Proof Table

PROCEDURE

1) Pull the steel wool apart gently.

2) Hang the steel wool safely over the table.

3) Touch the ends of the battery terminals to the steel wool.

WHAT DID YOU OBSERVE?

_____

_____

EXPERIMENT FURTHER

Blow on the steel wool while it is reacting. Does it speed up or slow down the reaction. Why?

_____

_____

1. The objective for today was…

_____

_____

2. Today in lab we…

_____

_____

Name:_____ Period:_____

3. For example…

_____

_____

4. I learned…

_____

_____

5. Conclusion…

_____

_____

WHAT REALLY HAPPENED?

Steel wool is made mostly of iron (about 98%). These iron threads have lots of surface area surrounded by pockets of oxygen.
When both battery terminals touch the steel wool, the electrons from the battery move rapidly through the steel wool and make a complete circuit. The electrical current heats up the wire to approximately 700 degrees, and the heat causes the iron to react with the oxygen surrounding the steel wool. This reaction creates the spark that we see and the release of heat that heats up the next iron molecules, thus causing chain reactions through the steel wool.
This reaction of iron and oxygen, also, creates a new substance, **Iron Oxide (FeO2)**. Iron oxide is actually heavier than iron, making the resulting product heavier than the original steel wool.