

Title: Elements, Compounds and Mixtures

Problem: How can the properties of elements differ when they are just mixtures and then when they are turned into a compound?

Hypothesis:

Procedure:

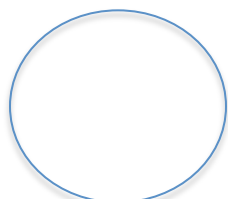
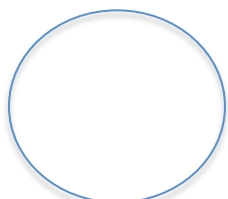
1. Measure 1.5g of sulfur (S) on a piece of weighing paper.
2. Observe the physical properties of sulfur and record in data table.
3. Carefully place the magnet under the weighing paper with the sulfur on it and record observations in data table.
4. Measure .75g of Iron (Fe) powder on a piece of weighing paper. Repeat steps 2 and 3 for the iron.
5. Mix the iron and sulfur together on a watch glass. Use the spatula to make sure it is well mixed. Repeat step 2 for the mixture.
6. Repeat step 3 with the magnet under the watch glass. Record observations in data table. Take to Microscope to observe particles and make sketches in notebook.
7. Pour the iron sulfur mixture back on the weighing paper, and then in the test tube.
8. Light the burner and CAREFULLY heat the test tube, making sure it points towards no one. Heat for 10 minutes. Record observations in data table.
9. After heating for approx. 10 minutes immediately place the **ENTIRE** test tube in the cold water bath. (This should break the test tube)
10. Use the tweezers and magnet to examine the substance formed in the test tube. Record your observations in the data table.
11. Record your observations by sketching Or taking photos of what the particles look like while a mixture and then what the particles look like after heating.

Physical Properties	Sulfur	Iron	Sulfur/iron Before heating	FeS₂ (After heat)
Color				
Shape of particle				
Size (sm,m,L)				
Magnetic?				

Particle Drawing

Before heating

After heating



Analysis and Conclusions:

1. How did the properties of sulfur alone compare with the sulfur in the unheated iron-sulfur combination?
2. How did the properties of iron alone compare with the iron in the unheated iron-sulfur combination?
3. How did the properties of sulfur alone compare with the iron-sulfur combination after it was heated?
4. How did the properties of iron alone compare with the iron-sulfur combination after it was heated?
5. What kind of substance was the iron-sulfur combination before heating?
6. What was the effect of heating the iron-sulfur combination?
7. What kind of substance was the iron-sulfur combination after heating?