

## Balanced Chemical Reactions

### Objectives

The following demo will get the students thinking about the Law of Conservation of Matter.

### Materials

- 250 mL beaker
- 250 mL flask
- White vinegar
- Steel wool
- Balloon
- Balance

### Procedure

1. Tear off an egg sized piece of steel wool. Be careful not to ball it up too tightly.
2. Place the steel wool into the 250 mL beaker and add white vinegar until the entire piece of steel wool is immersed. Soak for 4-7 minutes.
3. Remove the steel wool from the vinegar and wring out any excess vinegar.
4. Place the steel wool into the 250 mL flask and cover the opening of the flask with a balloon.
5. Find the mass of the entire steel wool-balloon-flask system and record.
6. Allow this system to sit for 30-45 minutes.
7. Later, observe the results and again take the mass of the steel wool-balloon-flask system and record.

Predictions:

1. Based on what we have discussed in class, what do you predict will happen to the mass of the flask system after it has reacted for 45 minutes?
2. What do you think will happen to the balloon during the reaction?

3. During this process, Iron is combined with oxygen to make Iron(II) Oxide.

1. What are the reactants

2. What are the products

3. Show the balanced chemical reaction below.

4. What was the final mass? Did it change? Offer an explanation.

5. What happened to the balloon during the reaction? Offer an explanation.