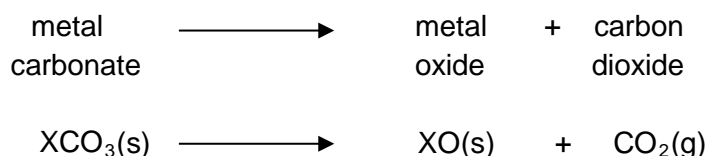


## Investigation of thermal stabilities of calcium carbonate, copper(II) carbonate and sodium carbonate

### Introduction

Metal carbonates can be made to break down (decompose) when they are heated. The harder it is to break them down, the more stable they are. In this experiment, three carbonates are heated strongly to see how easily they decompose. By carrying out this experiment you will be able to place the carbonates in order of their thermal stability.



### Apparatus

3 × boiling tubes  
 test tube holder  
 Bunsen burner  
 heat proof mat  
 rack for boiling tubes  
 calcium carbonate  
 copper(II) carbonate  
 sodium carbonate  
 spatula

**Access to:**

electronic balance  $\pm 0.01$  g

### Method

1. Record the mass of an empty boiling tube.
2. Add approximately 2g of calcium carbonate.
3. Record the mass of the boiling tube and the calcium carbonate.
4. Heat in a roaring (blue) Bunsen burner flame for approximately 5 minutes.
5. Allow the boiling tube to cool.
6. Record the mass of the boiling tube and the calcium carbonate.
7. Repeat steps 1-6 with copper(II) carbonate and sodium carbonate.

### Analysis

1. Calculate the loss of mass for each carbonate. Use this to place the carbonates in order of thermal stability.