

DENSITY LAB REPORT

Purpose: The purpose of this lab is to determine the effect that mass and volume have on density.

Hypothesis: Write your hypothesis here BEFORE starting the lab. In this situation, it should relate to how mass and volume affect density. You should not attempt to guess the density of certain objects.

Procedure:

1. Get 5 of the same metal samples.
2. Find the mass of one of the metals using the balances in the back of the room.
3. Find the volume of the metal by using the displacement method.
4. Record your values in your data table.
5. Repeat steps 2 – 4 but add one more metal at a time until all of the stoppers are used.
6. Dry and return all of your materials.
7. Create a graph of your results in the “Graphical Analysis” app

Data Table:

# of samples used	Mass (g)	Volume (mL)	Density (g/mL)

Using Graphical Analysis:

1. Open the app
2. Tap the “Create Experiment” button (big green plus sign)
3. Choose “Manual Entry” on the bottom of the list.
4. Enter your data into the data table. Mass should be in the x column, volume should be in y. Press down on the letters to change the column titles to “Mass” and “Volume.” Be sure to add the correct units.
5. Tap the first button in the top right corner (a square where one half is divided into two boxes). Choose “1 Graph”

6. You may need to pinch to zoom to see all of your data points. When they are all on screen, highlight them by dragging your finger across the screen starting at the first point and ending at the last.
7. In the box that pops up, tap “Curve Fit” and choose linear. Tap the background to exit.
8. In the bottom left corner, tap the small picture of a graph. Enter a title for your graph. Tap the background to exit.
9. Tap the second button on the top right corner (box with arrow coming out of it) to export your image. You can save it to your camera, email it to yourself, etc. Do whatever you need to so that you can include this image in your lab report.

Results Section:

- Include a typed data table
- Find the slope of your line from your graph. This is your experimental density.
- Compare that value to the accepted values for density in the chart below:

Metal	Density
Zinc	7.13 g/cm ³
Aluminum	2.7 g/cm ³
Brass	8.75 g/cm ³
Copper	8.96 g/cm ³

- Calculate the percent error for your metal and show your work in the lab report.
 - I suggest doing this in notability and adding that page as an image into your lab report.

Discussion:

Be sure to identify the type of metal you used based on your data. Be sure to explain how density changes for a object as your increase the mass and volume. Identify two sources of error and explain how they affected your results.

Sources of error:

Lab Report:

You will submit a full lab report to turn it in.com by 11:59 PM three days from now. Your introduction should focus on what density it and how it can be used to identify different objects. Remember- if you submit it early and ask for feedback I will be happy to help you!