Lab Skills Unit

Introduction to Density Lab

Density is the amount of mass in a given volume of an object. We’ll learn more about this in our chemistry unit later this year.

To calculate density of an object, what two measurements do you need to know?

_________________________ and _________________________

The formula you use is Density = mass / volume OR $D = \frac{M}{V}$

So, what do we label density? Try these and see!

If the mass if object A is …………….12g and the volume of object A is ………..6cm$^3$
the density will be __________________

What if I measure volume in milliliters?

If the mass of object B is …………..20g and the volume of object B is …….5ml
the density will be __________________

Practice measuring density

Materials:

- 100ml graduated cylinder
- marble, iron pyrite, small piece of clay
- beaker of water
- two-pan balance
- calculator

Procedure:

1. Find the mass of the marble. Record it in the data table.
2. Find the volume of the marble using water displacement. Record it in the data table.
3. Calculate the density of the marble using the formula above. Round your answer to the nearest hundredth. Record it in the data table.
4. Repeat steps 1-3 for the iron pyrite and clay.
5. If you have time, complete the bonus density activity.

<table>
<thead>
<tr>
<th></th>
<th>Mass</th>
<th>Volume</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>marble</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iron pyrite</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>clay</td>
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</tr>
</tbody>
</table>

Bonus Density Activity

Think of a way you can find the density of 50ml of water. Write you calculations here.

mass = ____________ volume = ____________ density = ____________