

# Density and matter quiz review

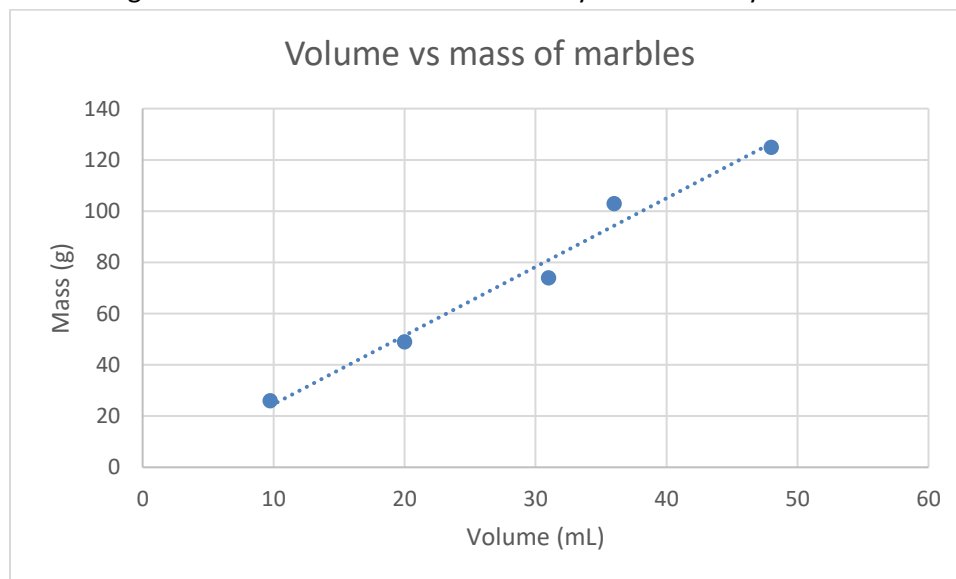
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## Physical and chemical changes and properties, classification of matter

1. What is a mixture?
2. How is a homogeneous mixture different from a heterogeneous mixture?
3. How is a compound different from a mixture?
4. Identify the following as elements, compounds, heterogeneous mixtures, or homogeneous mixtures: tuna sandwich, silver bracelet, vitamin C ( $C_6H_8O_6$ ), butterscotch pudding, diamond engagement ring, granite rock (like in the mountains), gold coin, salt.
5. List three physical changes you can perform using water.
6. List two chemical changes you can perform with eggs.
7. List two physical properties of a brick.
8. List two chemical properties of a dandelion.

## Density and dimensional analysis

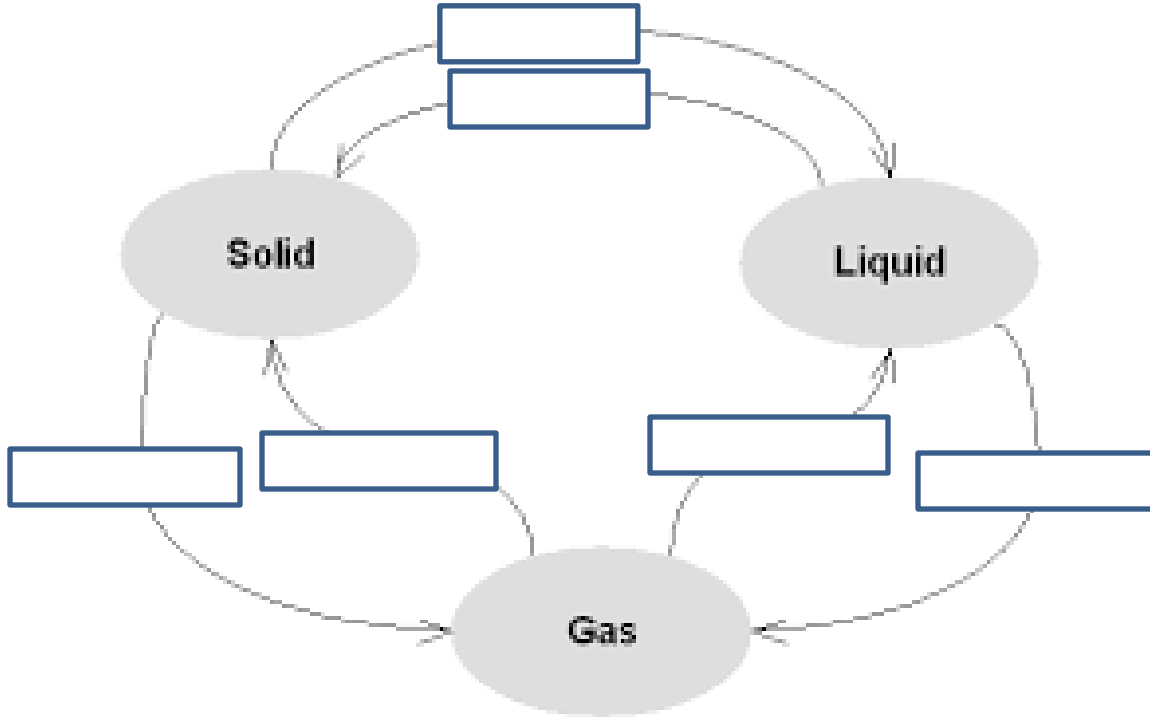
9. One gallon has a volume of 3785 mL. What is the volume in kL?
10. The density of lead is 11.3 g/mL. What is the mass of 78.0 mL of lead?
11. What is the volume of 687 g of lead?
12. A block of oak has the dimensions 4.8 cm by 8.4 cm by 21.4 cm and a mass of 630 g. What is the density of this wood?
13. You wish to determine the density of a really cool rock. You start with 56.8 mL of water in a graduated cylinder. When you add the rock, the volume increases to 76.5 mL. The rock has a mass of 85.90 g. What is its density?
14. The density of glass is known to be 3.47 g/mL. A student places a piece of glass on a scale and measures its mass as 17.91 g. If the glass is then placed in a 100 mL graduated cylinder at a volume of 31.0 mL, what will the final volume in the graduated cylinder be measured as (in mL)?
15. You collected the following data in the lab. Calculate the density of the density of the marbles.



16. The accepted value for the density of marbles is 3.1 g/mL. What is your percent error?

## States of Matter

17. Complete the diagram:



18. How are the atoms arranged in a solid? Liquid? Gas?

19. How do the atoms behave during each of the phase changes above?

20. Describe the shapes, volumes, and compressibility of solids, liquids, and gases.