

### Chapter 3 – Density Reading Study Guide

1. The property of an object that causes it to feel light or heavy for its size is called \_\_\_\_\_.
2. The density of an object depends on two things: \_\_\_\_\_ and \_\_\_\_\_.
3. The \_\_\_\_\_ is the amount of matter in the object.
4. The volume is \_\_\_\_\_.
5. The mathematical equation for density is: Density = \_\_\_\_\_.
6. The density of a material is based on the \_\_\_\_\_ or \_\_\_\_\_ the substance is made from.
7. If you have cubes of copper and aluminum the same size (volume) and the copper has a greater mass than the aluminum cube, we can infer the copper cube is more \_\_\_\_\_.
8. There are three reasons why copper and aluminum have different densities:
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
9. A sample of a substance with a higher density will always have a greater \_\_\_\_\_ than the same size sample of a substance with a lower density.
10. In order to find the density of a substance, you need to measure the \_\_\_\_\_ and the \_\_\_\_\_ of a sample of the substance.
11. Mass is a measure of the \_\_\_\_\_ that makes up an object.
12. Weight is a measure of the \_\_\_\_\_ on a certain mass.
13. Sometimes finding the volume of an object is not as easy as simply using a metric ruler to measure the length, width and height. Another method is the \_\_\_\_\_ method.
14. When measuring the volume of an object that doesn't sink in water, what do you have to do to accurately measure its volume? \_\_\_\_\_
15. What two things do you subtract to find the volume of an object using water displacement method? \_\_\_\_\_ minus \_\_\_\_\_.
16. A milliliter is the same as a \_\_\_\_\_.
17. The volume of the water displaced equals \_\_\_\_\_.

18. The density of a substance is the same no matter \_\_\_\_\_.

19. The density of an object and the density of the liquid it is placed in determine where an object will \_\_\_\_\_ or \_\_\_\_\_.

20. It's not the \_\_\_\_\_ of the object that matters in sinking and floating but its \_\_\_\_\_ compared to the density of water.

21. An object that is less dense than water will \_\_\_\_\_. An object that is more dense than water will \_\_\_\_\_.

22. Why is clay more dense than an equal volume of water? \_\_\_\_\_  
\_\_\_\_\_

23. The density of an object or the water it is placed in can be changed so that an object that normally \_\_\_\_\_ will \_\_\_\_\_.

24. If an object sinks in water, this means the object is more dense than the water. There are two possible ways to make the object float:

- a. \_\_\_\_\_
- b. \_\_\_\_\_

25. Why do boats float when they are made out of material that is more dense than water? \_\_\_\_\_  
\_\_\_\_\_

26. How does temperature affect density?

- a. Heated molecules move \_\_\_\_\_ and get slightly \_\_\_\_\_. The substance has the same mass but a slightly larger \_\_\_\_\_. The larger volume results in a \_\_\_\_\_ density.
- b. When water is cooled, its molecules move \_\_\_\_\_ and get a little \_\_\_\_\_. The water still has the same mass but takes up a \_\_\_\_\_ volume. This results in an \_\_\_\_\_ in density.

27. Normally, when a liquid is cooled, its molecules \_\_\_\_\_ and the attractions between molecules bring them \_\_\_\_\_. How is water different when it cools? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_