

Sample Lesson #2

Density

All matter is made up of particles. **Density** is a physical property of matter, and it indicates how tightly packed those particles are. The more closely packed the particles are, the more dense the substance is. If there is more space between the particles, the substance is less dense.

Consider the substances in the table below.

Object	Mass (g)	Volume (ml)	Density (g/ml)
Plastic from a Milk Container	34.9	37.9	0.92
Plastic from a Soda Container	73.4	53.2	1.38
Water	47.0	47.0	1.00
Cork	31.5	92.6	0.34
An iron nail	16.7	2.12	7.88
Candle wax	40.18	43.2	

- Density is related to the mass and volume of an object. It is calculated using the equation, $D = m/V$ (mass divided by volume). Calculate the density of candle wax, and write the number in the chart.
- Often, the density of an object is compared with the density of water. According to the table above, what is the density of water?

- When an object has a lower density than water, that object will float in water. Using the table, determine which objects would float in water.
 - milk container plastic
 - cork
 - soda container plastic
 - iron nail
 - candle wax
- Which of the following statements explains why a piece of Styrofoam floats on water?
 - The mass of Styrofoam is greater than the mass of water.
 - The volume of Styrofoam is less than the volume of water.
 - Styrofoam is less dense than water.

5. The amount of time it takes for Earth to complete one full rotation is _____.
- A) 365 days
 - B) 60 minutes
 - C) 24 hours
 - D) about 29 days
6. The number to the left of the circle on a station model represents _____.
- A) air pressure
 - B) temperature
 - C) wind speed
7. Which organelle is most like the power plant of the cell?
- nucleus mitochondria ribosomes
8. Which involves actions that change the composition of rock?
- A) physical weathering
 - B) abrasion
 - C) chemical weathering
 - D) rockslides
9. Which of the following ocean zones is **not** described correctly?
- A) The intertidal zone involves water with lots of wave action. This area receives a great deal of sunshine and is very warm.
 - B) The oceanic zone is an extremely large zone. Parts of this zone are warm, while others can get quite cold.
 - C) The benthic zone is found on the ocean floor. Many plants grow here.
10. Why does the new moon look like there is no moon at all?
- A) During the new moon, the moon is on the other side of the sun.
 - B) During the new moon, the moon's entire illuminated face is turned away from us.
 - C) During the new moon, the sky is not dark enough to see the moon.
 - D) There is no moon during this phase.