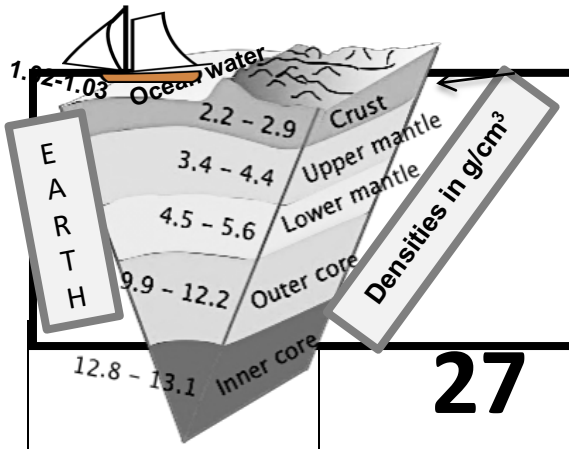
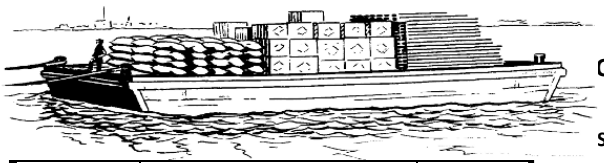


Density
Design
Buoyancy

Density = mass/volume

Science 8 January 2020

Name Period



Points
Objective+Grade

Semester 2 - **Rules**

Calendar
Highlight →
←Predict Density??

Graduated Cylinder

Online

Float Challenge

Density Lab

Extra

Quizzes:
Initial in COLOR.

Mon _____
Tue _____
Wed _____
Thu _____
Total_____

What2Learn

Fri _____

Density??

_1. Predict and write the following in order of density, least to greatest:

_a) a boat*, _b) cork, _c) wood*, _d) plastic*, _e) alcohol, _f) aluminum, _g) Styrofoam*, _h) iron-steel, _i) salt water* _j) copper or zinc pennies*

*** Different according to type.**

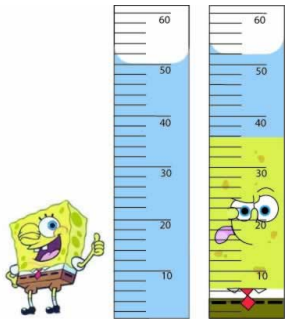
_2. Predict and write the density of each.

Substance	-	Density
1._____		_____
2._____		_____
3._____		_____
4._____		_____
5._____		_____
6. Water		1.0
7._____		_____
8._____		_____
9._____		_____
10._____		_____
11._____		_____

27

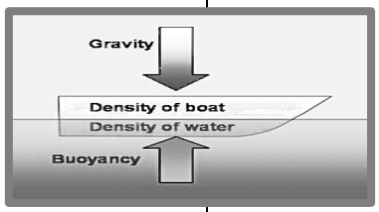
Measuring with a Graduated Cylinder
Worksheet + Online

_____



Online ↘ _____

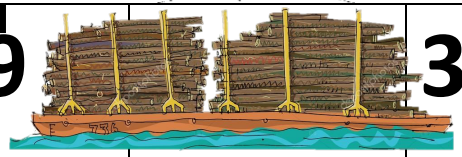
28



Float Challenge: Density & Layers Lab
Handout

_____

29



Density Lab
Data & Calculations
Handout

_____

If Time:

Density ID Lab

_____

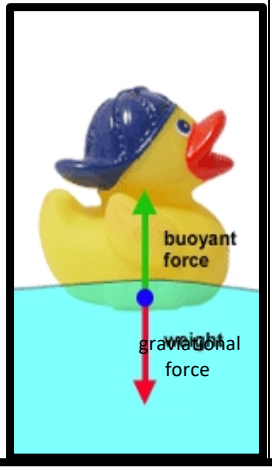
Copper Pennies?

_____

31

For Next Week: Design a Barge
To Move Cargo
Handout

_____



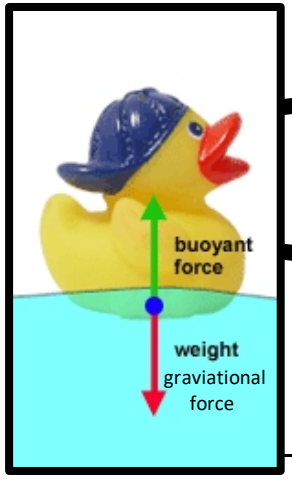
Central Science Page
www.plyter.com/science

Have Screen Check, Screenshot or Photo.

Physical Science→ Properties of Substances--

Density: Archimedes' Principle _____
How do Ships Float? FOL _____
How do Ships Float? MITK12 _____

Discovery→ Density _____
Measuring Density _____



OBJECTIVE:

Highlight as you read.→

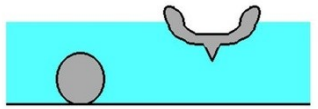
Write the Formula for finding Density in words and as a math formula:

Density = **D =**

Archimedes Principle: the buoyant force on a submerged object is equal to the weight of the fluid (water) that is displaced by the object. Buoyancy is the ability of an object to float in water or air. By adding air to objects, we get more buoyant force.

Archimedes' Principle explains why steel ships float when solid steel spheres do not float. Because of all the air in the hull, the overall density is less than that of water, therefore, it floats- the buoyant force equals the weight as the ship floats on the surface of the ocean.

ball: displaced water weighs less than ball
hull: displaced water weight = hull weight



Write the Objective:

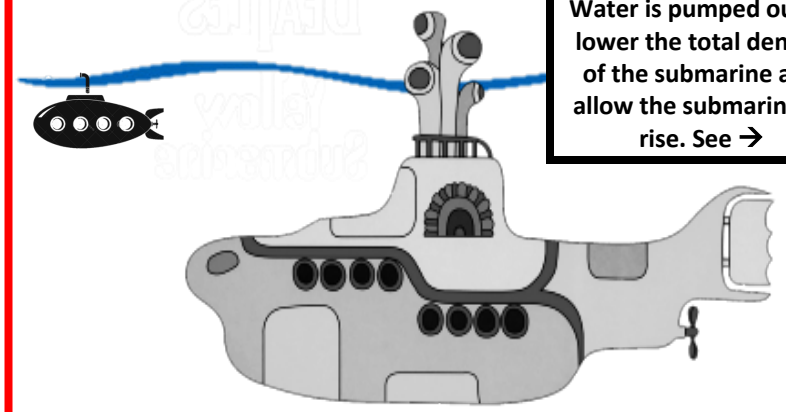
Your Grade for Last Week:

	Yours	Required
Objective-Grade-Blanks	____	10
Calendar- Prefixes + Measure it	____	10
How Big?	____	10
Black Box	____	20
Cricket	____	10
Quizzes	____	48
What2Learn	____	10
Extra	____	
Total	_____	118

Yours / Required X 100 = your %

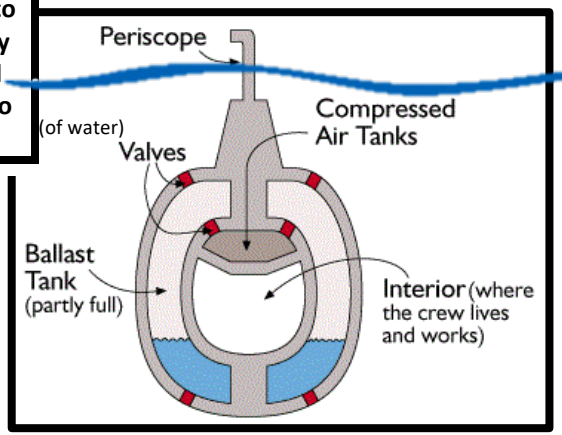
____ / ____ X 100 = _____%

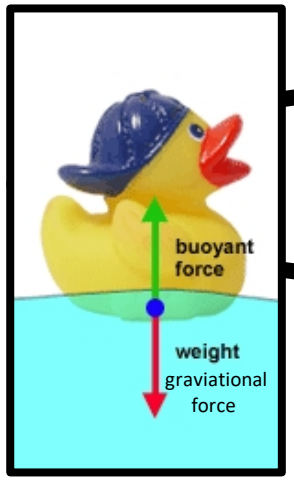
Look up in the Gradebook _____%



Submarine:

Water is pumped out to lower the total density of the submarine and allow the submarine to rise. See →





OBJECTIVE:

To better understand the property of density and the force of buoyancy, considering the density of $H_2O = 1$.

1) **Predict, demonstrate and calculate the density of various substances.**

2) **Design, using dry calculations, a barge that uses air to reduce overall density, will be buoyant (float) in water and will carry cargo.**