

DENSITY 2 DESIGN A BARGE

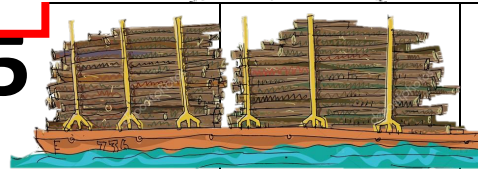
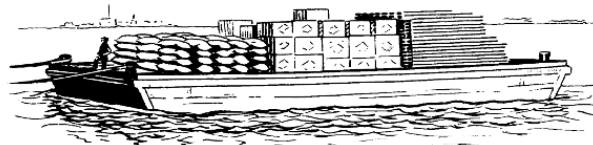
BUOYANCY

DENSITY = MASS/VOLUME

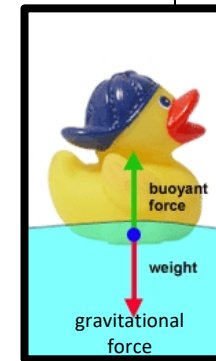
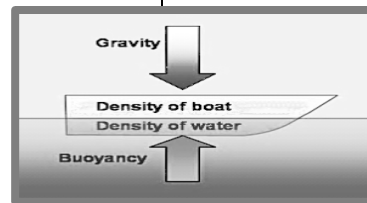
SCIENCE 8 FEBRUARY 2020
MRS. PLYTER PLYTER.COM/SCIENCE

Name _____

Period _____



7



Density??

1 Write the following in order of density, from 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 Write the density of each. Use your data, or LOOK UP.

Substance - Density

1. _____
2. _____
3. _____
4. _____
5. _____
6. **Water 1.0**
7. _____
8. _____
9. _____
10. _____
11. _____

Density of Liquid

Use your Density Lab Paper for Help.
Lab Tech or Lab-Director? Ask. Circle one.

- 1) The Lab Tech does the lab.
- 2) The Lab-Director watches & RE-directs.
- 3) The Lab-Director
 DOES NOT read, explain or do procedures.
 DOES check and re-direct, as needed.
 DOES sign that calculations are correct.
- 4) Use 20 to 30 ml of liquid in a 50 ml, or smaller, graduated cylinder.

Liquid -	H ₂ O	H ₂ O+NaCl
1) Mass Calculation		
2) Mass =		
3) Volume Calculation		
4) Volume =		
5) Density Calculation		
6) Density =		

Have Checked while you have liquid!

Signature of Lab-Director → _____

Check by Teacher → _____

Special Assignment & If Time

- Special Assignment _____
Ask about Brain Train.
- Density ID Lab _____
- Density Repair _____
From last week _____
- Copper Pennies? _____
Density? Material? By Age _____

Design a Barge

To Move Cargo
Handout _____

Barge Float Challenge

See Handout for
Requirements.

Density Review

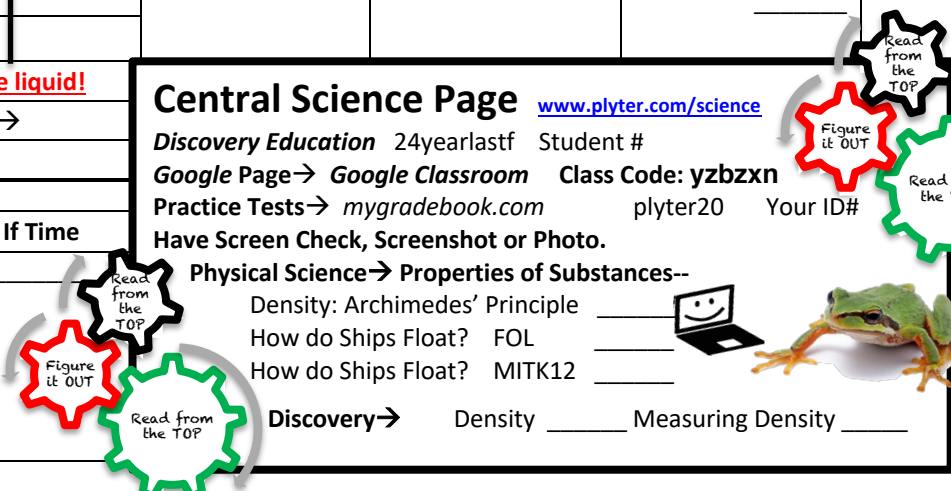
Handout _____
Online ↓ _____

Central Science Page www.plyter.com/science

Discovery Education 24yearlastf Student # _____
 Google Page → Google Classroom Class Code: yzbzxn
 Practice Tests → mygradebook.com plyter20 Your ID# _____
 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 _____



Points

Objective + Grade

Calendar

Highlight →

← Order of Density

Density of Liquid

Design a Barge

Barge Float
Challenge

Density Review

Online

Special Assignment
/ Extra

Quizzes:

Initial in COLOR.

Mon _____

Tue _____

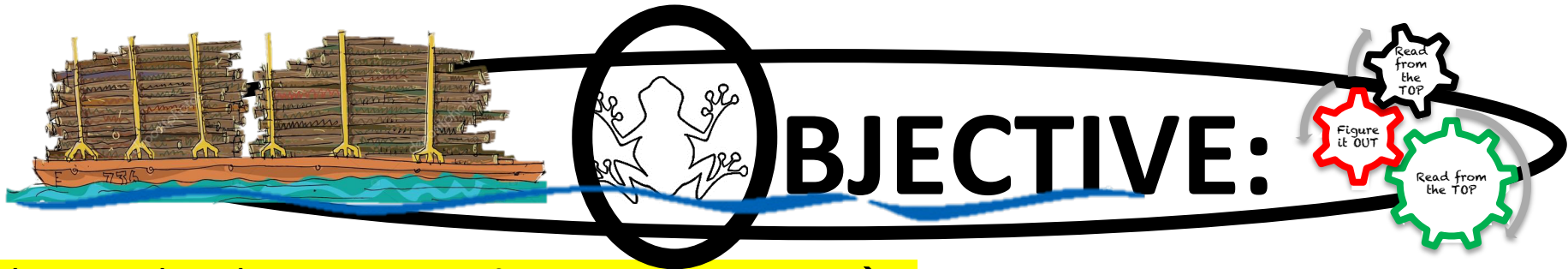
Wed _____

Total _____

What2Learn

Initial in Color

Fri _____



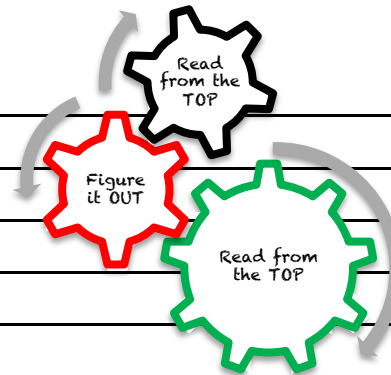
1) Highlight (again) as you read the information on the Calendar. → ∨

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

Density =

D =

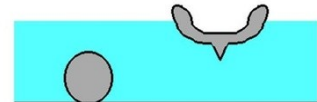
3) Write the Objective:



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

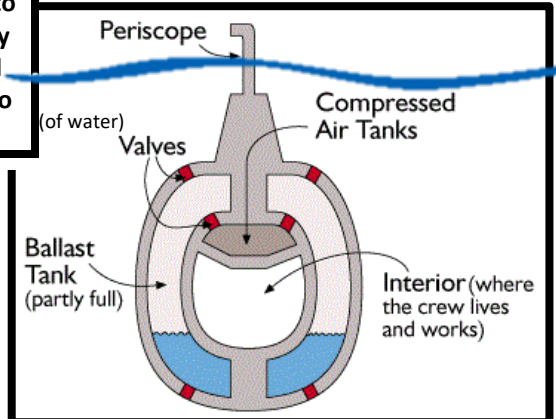
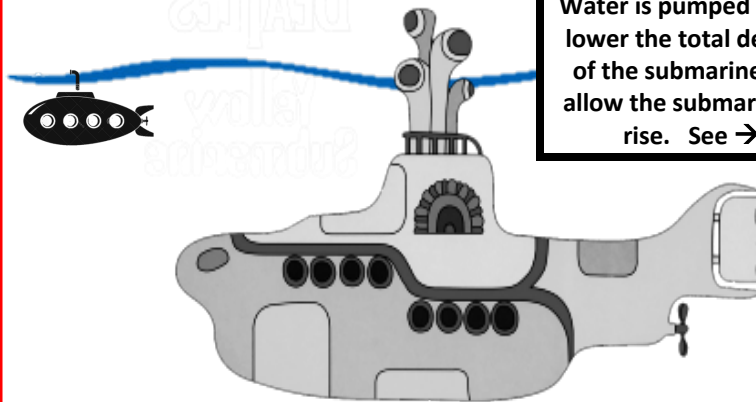


Your Grade for Last Week:

	<u>Yours</u>	<u>Required</u>
Objective-Grade-Blanks	_____	10
Calendar- Front + Back	_____	15
Graduated Cylinder	_____	15
Float Challenge	_____	10
Density Lab	_____	25
Quizzes	_____	32
What2Learn	_____	10
Extra	_____	
Total	_____	127
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 →





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

6.1P.1

