Day 4: Density & Buoyancy (pg 5) (3ec)

#8 Density and Buoyancy: All objects experience a buoyant force when immersed in a fluid.

a. Density is mass per unit volume.

b. Know how to calculate the density of substances (regular and irregular solids and liquids) from measurements of mass and volume.

c. The buoyant force on an object in a fluid is an upward force equal to the weight of the fluid the object has displaced.

d. Know how to predict whether an object will float or sink.

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1. Density Basics

a. What is the equation for density?

b. How do you measure the mass of an object?

c. How do you measure the volume of a box of cereal?

d. How do you measure the volume of an irregular object like a plastic teddy bear?

e. What is the density of water?

f. What is buoyancy?

g. Why do large cruise ships float in water?

h. How can you accurately predict whether an object will float or sink?

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2. Calculating Density & Making Prediction: Use the information provided to fill in the blanks & determine whether an object will sink or float in water.

Object	**Mass** (gram)	**Volume** (mL or cm^3)	**Density** (g/mL or g/ cm^3)	**Sink or Float?**
Piece of Cork	24	100		
Piece of Wood	89	10		
Steel Cube	7.8	1		
Steel Nail		1.6	7.8	
Block of Gold	575		19.3	
Ice Cube		1	0.92	
Rubber Stopper	33	30		
Milk Carton	2		0.95	
Block of Aluminum	81	30		
Pinewood		25	0.50	