NB Page 54 **12/12/11**

The Soda Can

PREDICTION: ***What will happen when we place a can of soda in Lake Aguirre?***

_____ *predicted that……. because….*

In your answer, include:

density, mass, volume, buoyancy, weight, vector

The Soda Can

Why does the regular soda sink and the diet soda floats?

In your answer, include:

density, mass, volume, buoyancy, weight, vector

Draw a labeled picture- include vectors for buoyant force and weight. (hint: look at page 49)

The Film Can Challenge: 12/13/11

Archimedes Principle

The buoyant force on an object in water is equal to the weight of the water displaced.

Canister	Mass of film can (grams)	Volume of water displaced (mL)	Weight of water displaced (grams)	Buoyant force (grams)
SINKS	90.4 g	43 mL	43.2 g	
FLOATS	17.7 g	43 mL	43.2 g	
Suspended in middle	43.2 g	43 mL	43.2 g	

Analysis and Results:

1. How does the buoyant force compare to the weight of the displaced water?
2. Did the mass of the canister change at all? Explain.
3. Did the volume of the film canister change at all? Explain.
4. In each canister, how did the BUOYANT FORCE compare to the MASS of FILM CAN?
5. What caused each canister to stay at their level in the water? Explain what caused the canisters to float, sink, or suspend using the term buoyancy. **ANSWER In WORDS AND DRAWINGS WITH LABELED VECTORS:**

DRAW FILM CAN, VECTORS LABELED WITH WORDS & MEASUREMENTS FROM LAB

(How does the buoyant force compare to the weight of the displaced water?)

Use the words: BUOYANT FORCE, DENSITY, WEIGHT, NET FORCE, FLOAT, SINK, DISPLACED WATER