

THE SODA CANS

Why does the diet soda float and regular soda sink? Use **mass**, **density**, **volume**, and **buoyancy** in your answer. Draw a picture!! Label the vectors for buoyant force (of the water) and weight (due to gravity)

Eureka video:

In each box, you must have a labeled picture (with vectors!!) and a description of what is happening

Link to YouTube copy of video we watched:

<http://www.youtube.com/watch?v=hkT3uIsGWyA>

Vector is an arrow that shows direction and magnitude (amount) of force.

Eureka Buoyancy

Sinking

Net Force = Sink

Floating

Net Force = Floating because buoyant force is greater

Archimedes' Principle of Buoyancy

Neutral Buoyancy

The buoyant force is equal to the force of gravity

Net force = 0

Objects are buoyed up by a force equal to the weight of the water displaced.

Buoyant Force = weight of the displaced water

Buoyancy Analysis

1. Use pg 82

1. Draw the beach ball or the boy with vectors. Why does it/he float? Explain: what is the buoyant force ?

#1 done 10/28

2. Use pg. 84

2. Draw the foam and wood block with vectors. How does the buoyant force "know" how strong to be to float each block?

3. Use pg 85

3. Draw the steel and wood ball under water with vectors. What are the similarities and differences when both are under water? (why one floats and the other doesn't)

The Wooden Boat of Science: Archimedes Principle

The buoyant force is equal to the weight of the displaced water

Mass of Boat: ____ g

Volume of displaced water: ____ mL

Weight of displaced water: ____ g

Draw the set-up

Answer: Boats float because....