

Name: _____ Date: _____

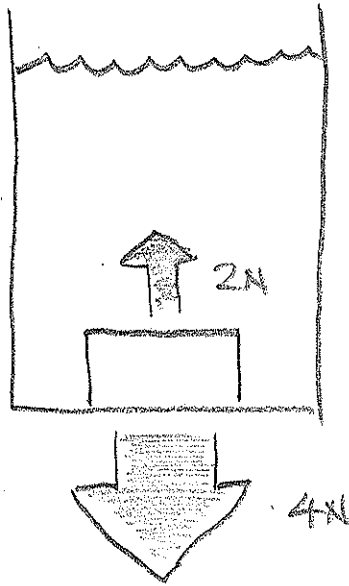
Physical Science Notes 5 Buoyancy

- Remember that the density of water is 1 g/mL.
 - If an object has greater density than water, it will sink.
 - If an object has less density than water it will float.
 - If an object has the same density as water it will be suspended.
- The density of steel is between 7g/cm^3 and 8g/cm^3 . If I put a steel block into a pool of water it would sink.
 - Is there any way to make steel float?

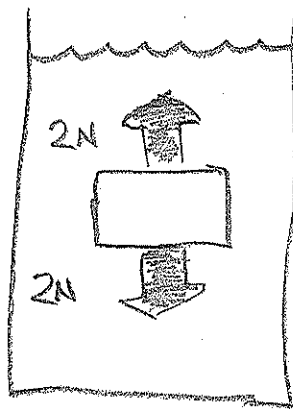
- make it into a boat
- Hollow it out
- put in in a high density liquid.

Archimedes Principle

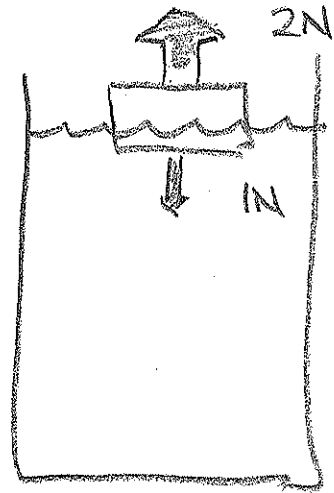
- Archimedes was a Greek mathematician who lived in the 3rd Century B.C.E.
- He found:
 - When an object was placed in water it displaced water.
 - The weight of the displaced water was equal to the force pushing up on the object.
 - Since a force was pushing back on the object, it weighed less while in the water.
 - If the weight of the displaced water was equal to or more than the weight of the object, the object would float.
 - If the weight of the displaced water was less than that of the object, the object would sink.



Object has greater density than liquid



Object has the same density as liquid



object has less density than the liquid

Floating a heavy object

- An object with a greater density will have more of a force pulling it down due to gravity. To get an object to float, therefore, we would have to decrease its density.
- A liquid with a greater density will have more of a force pushing an object up. To get an object to float, therefore, we could also increase the density of the liquid.