

Lab: Cartesian Diver

Name _____ Period _____

Purpose: To construct a Cartesian Diver, operate it, and demonstrate an understanding of the principles involved.

The Principles of The Cartesian Diver:

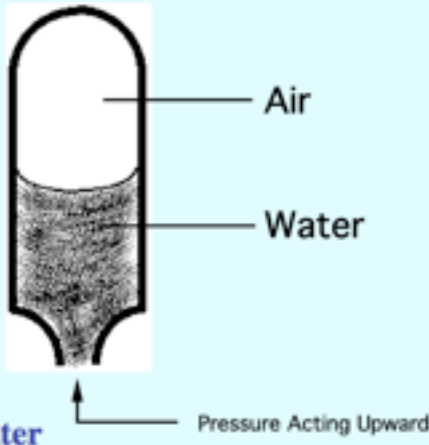
Pascal's Law--
The pressure applied to a fluid is transmitted in all directions, including up inside the diver.

Boyle's Law--
The gas in the diver is compressed as the pressure increases allowing more water to enter.

Archimedes' Principle--
The diver will sink when its weight is greater than the displaced water. The weight increases as more water is forced into the diver.

Lab: Cartesian Diver

Navy training about underwater depth charge detonation. Cover your...



The diagram illustrates a Cartesian diver, which is a teardrop-shaped object with a rounded top and a narrow neck. The top portion is labeled 'Air' and the bottom portion is labeled 'Water'. An upward-pointing arrow from the bottom is labeled 'Pressure Acting Upward', indicating the force that causes the diver to rise when the pressure is increased.

Procedure:

1. Observe the Boom's Demo of a diver in action.
2. Construct your diver with a two-liter bottle and operate it.
3. Write a comprehensive explanation of the three principles involved and how they apply to the operation of the diver.
4. Critique.