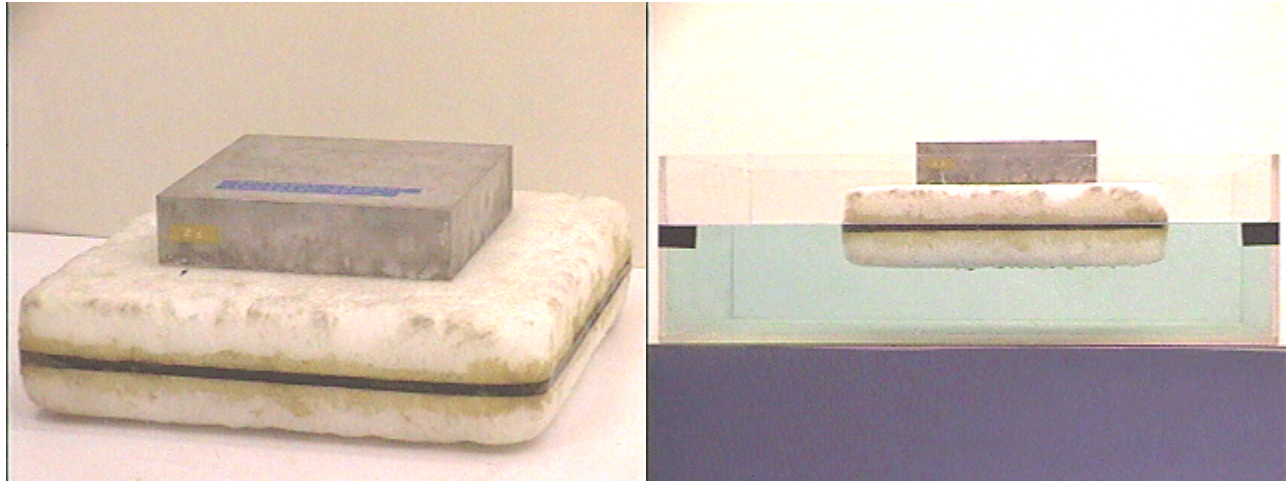


Question #32

A (very light) styrofoam block with a (much heavier) aluminum block attached to its top surface, as seen in the photograph at the left below, is placed into a container of water. The combined blocks float with one-half of the styrofoam block immersed in the water, as seen in the photograph at the right below. It's a bit ratty looking, but it works.



Now remove the floating block combination from the water, turn it upside down, and replace it in the water with the aluminum block underneath the styrofoam block. The question is what will happen? Perhaps it might float higher out of the water, so that the black line on the foam block is above the level of the water. On the other hand, perhaps the aluminum block will pull the foam block further into the water, so that the water level will be above the black line, or the blocks may even sink! Or, perhaps it will float with the black line at the water level, as in the original case.

When the inverted block combination is placed in the water (with the styrofoam block on top) where will the water level be relative to the black line in the center of the styrofoam block?

- (a) The black line will be *above* the water level.
- (b) The black line will be *at* the water level, as in the original case.
- (c) The black line will be *below* the water level.
- (d) The blocks will sink.

Here is a second question for extra bonus credit: The water level of the container with the blocks in their original configuration is marked by the top of the black tape on both sides of the tank. After the blocks are inverted and replaced in the water, will the water level in the tank be higher, lower, or the same?

Click here for [Answer #32](#) after October 2, 2000.

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For questions and comments regarding the *Question of the Week* contact [Dr. Richard E. Berg](#) by e-mail or using phone number or regular mail address given on the [Lecture-Demonstration Home Page](#).