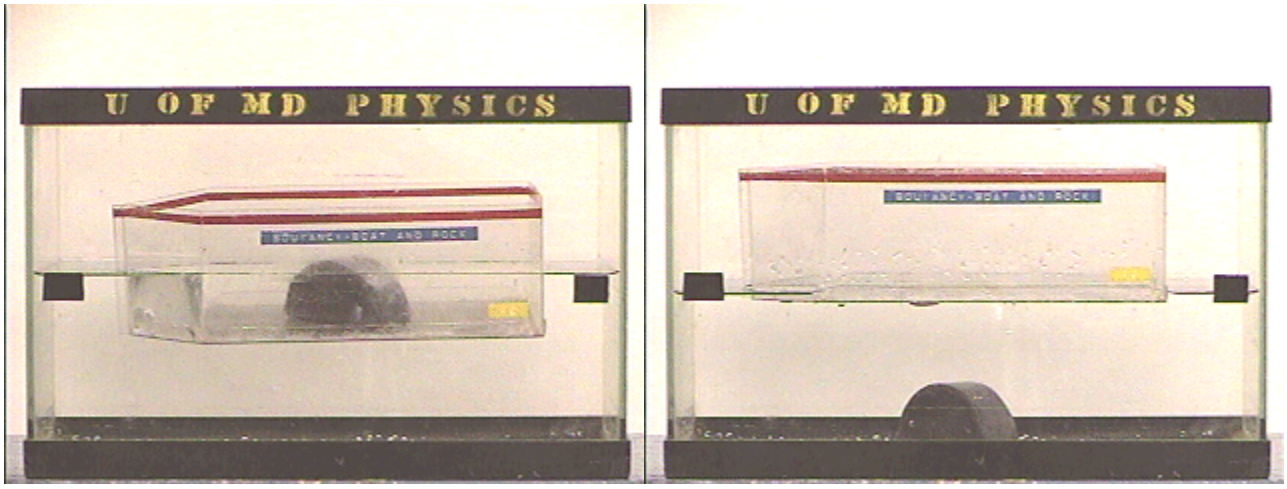
# Answer #17

The answer is (b); the water level in the pond will go down, as seen in the photograph at the right below. The original photograph with the rock *in* the boat is shown at the left for comparison.




Many middle school students are able to cite the relevant "laws of buoyancy:"

- A floating body displaces its weight in water.
- A submerged body displaces its volume in water.

However, many of those same students have never been taught exactly what "displacement" means. Note that if you push the boat down into the water, it *displaces* more water, and the water level in the tank (or pond) must rise.

When the rock is in the boat, it is floating, so it displaces its *weight* in water - a large amount of water. However, after it has sunk to the bottom of the pond, it displaces its *volume* in water - much less water, because the lead weight (or a rock) is much more dense than water.

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Archive 1

Question of the Week

Outreach Index Page

Lecture-Demonstration Home Page

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
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