

Density Concept Question

by Trish Loeblein

used with Density Activity

Learning Goals:

Students will be able to use macroscopic evidence to:

- Measure the volume of an object by observing the amount of fluid it displaces or can displace.
- Provide evidence and reasoning for how objects of similar:
 - mass can have differing volume
 - volume can have differing mass.
- Identify the unknown materials by calculating density using displacement of fluid techniques and reference tables provided in the simulation.

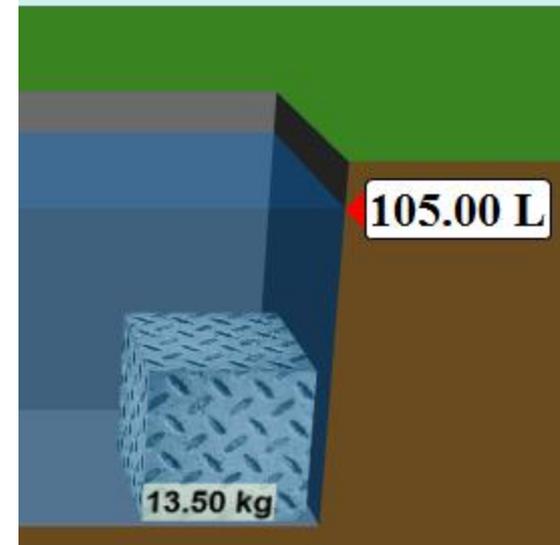
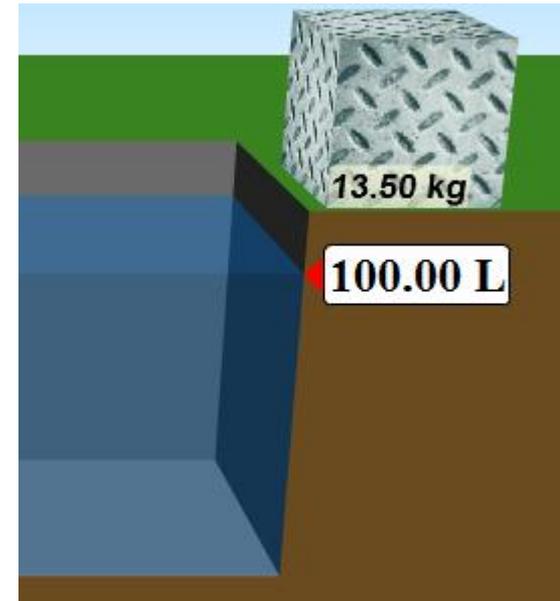
1. You put in a pool with 100 L of water. Then you drop an aluminum block in and the volume rises to 105 L. What is the volume of the block?

A. 5L

B. 105 L

C. Depends on block shape

D. Not enough information



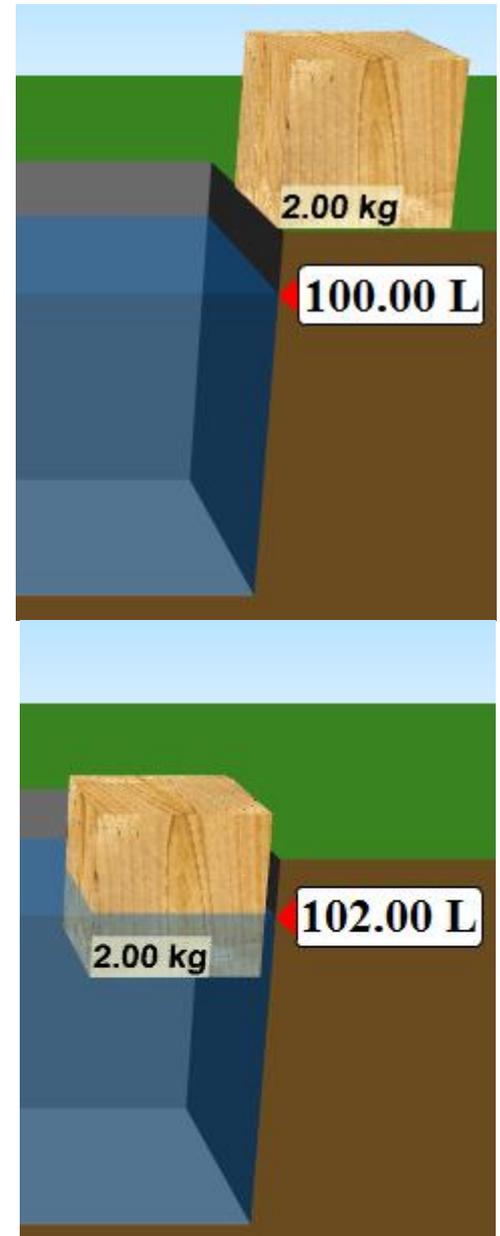
2. You put in a pool with 100 L of water. Then you drop an wood block in and the volume rises to 102 L. What is the volume of the block?

A. 5L

B. 105 L

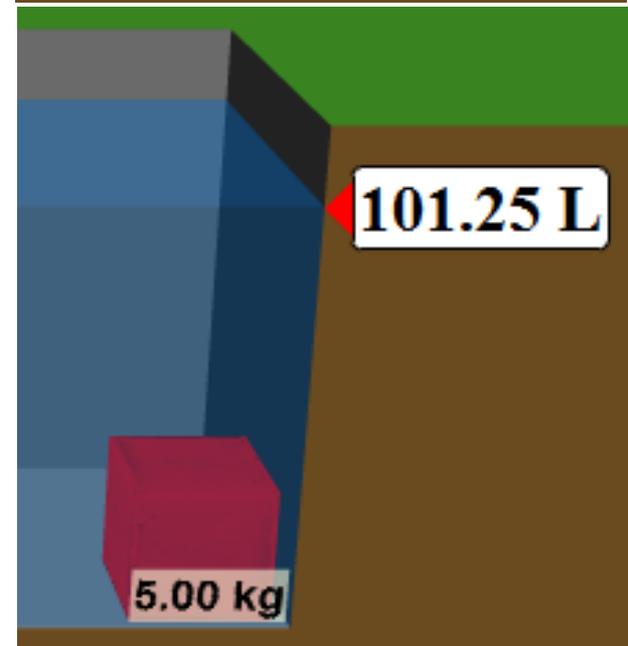
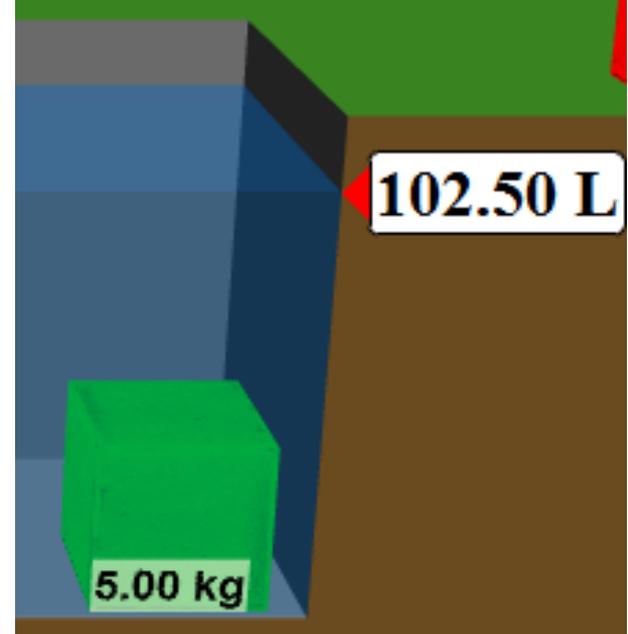
C. Depends on block shape

D. Not enough information



3. Two different blocks, both with a mass of 5 kg have different volumes. How is it possible?

- A. One is more dense**
- B. They are made of the same material**
- C. They are made of different material**
- D. More than one of these**
- E. None of the above**



4. Two different blocks, both with a volume of 3.38L have different mass. What would be a good explanation?

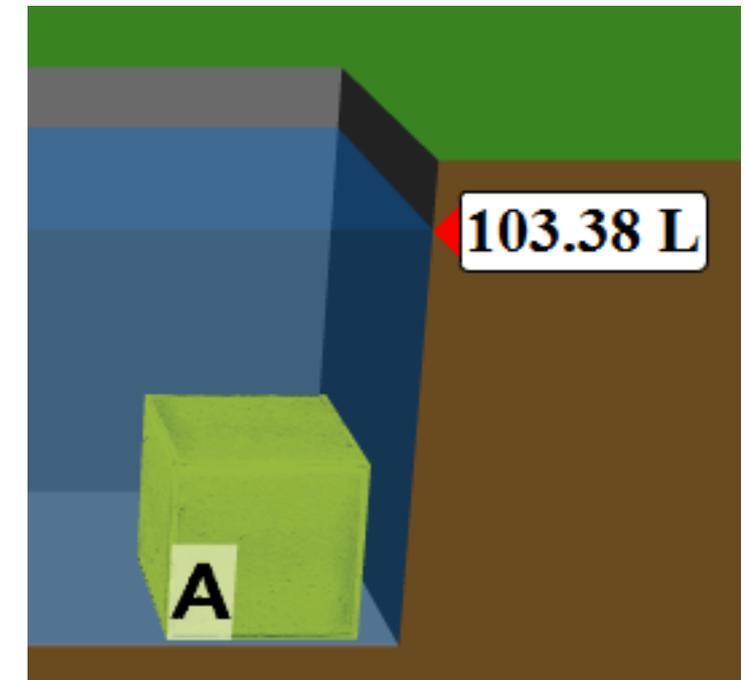
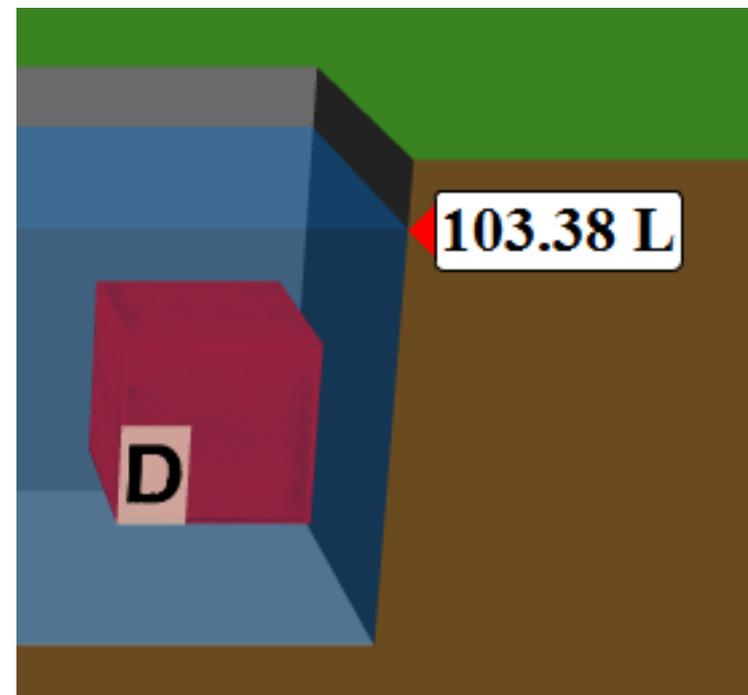
A. A is more dense

B. D is more dense

C. A sinks

D. D floats

E. More than one of these



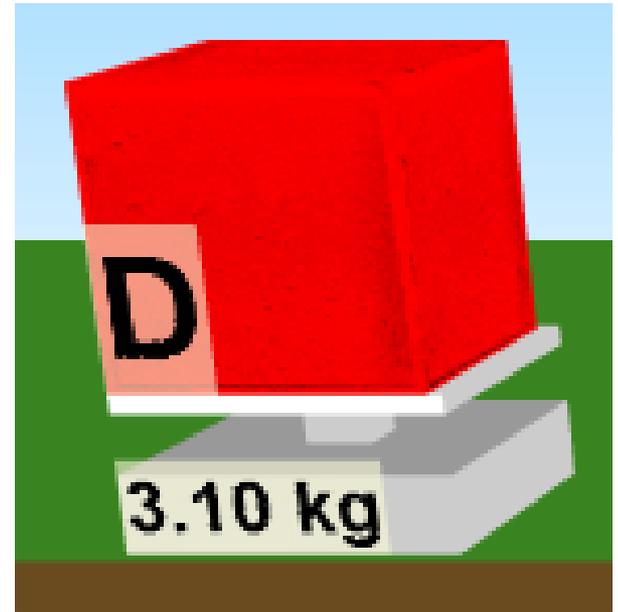
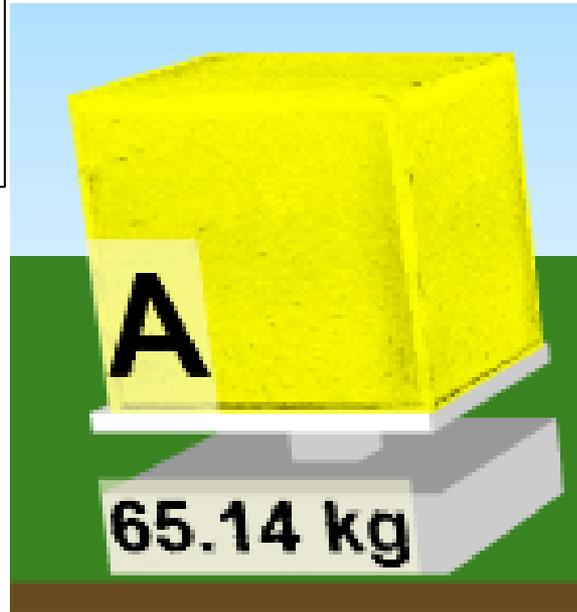
Some information for 4

Volume
changes when
submersed

103.38 L

100.00 L

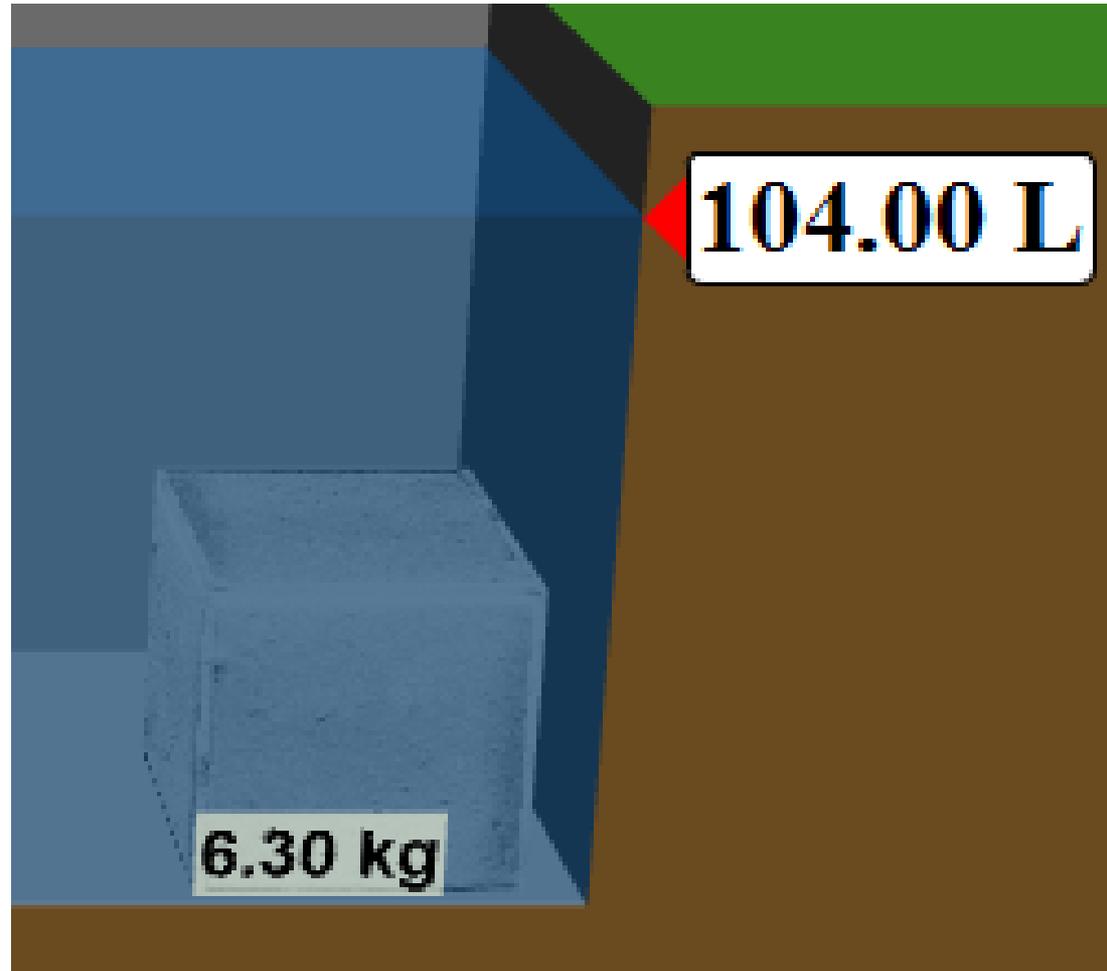
Mass found using scale



It is true that D floats, but it is irrelevant to question. The important thing is that A is more dense – it's mass is greater even though volume is the same.

5. What is the density of the block?

- A. 0.63 L/kg**
- B. 1.6 L/kg**
- C. 0.63 kg/L**
- D. 1.6 kg/L**



6. Joe was doing a lab. He massed an object and then pushed it into some water. He recorded- 3.5 kg and 5 L. What might the object be?

	<u>Material</u>	<u>Density (kg/L)</u>
A.	Wood	0.40
B.	Apple	0.64
C.	Gasoline	0.70
D.	Diamond	3.53
E.	Lead	11.3

7. What is the mass of the block if it has a density of 0.86?

- A. 5.0 kg
- B. 91 kg
- C. 0.15 kg
- D. 6. kg

