

ARCHIMEDES

SCIENCE DEMONSTRATION
LESSON 13

Objects weigh more in air than
they do in water. Why?

Because the water supports them more—this property is called buoyancy.

Suppose you were floating on an air mattress in a swimming pool while you were holding a laptop, when suddenly the laptop falls off and sinks to the bottom of the pool.

Will the level of water rise, fall, or remain the same?

The same principle would apply if a huge rock fell off of you on the air mattress into the water--would it cause the water to rise, fall, or remain the same?

MATERIALS NEEDED:

- Large kitchen bowl
- Small paper cup
- Weights such as marbles, stones, or coins
- Masking tape

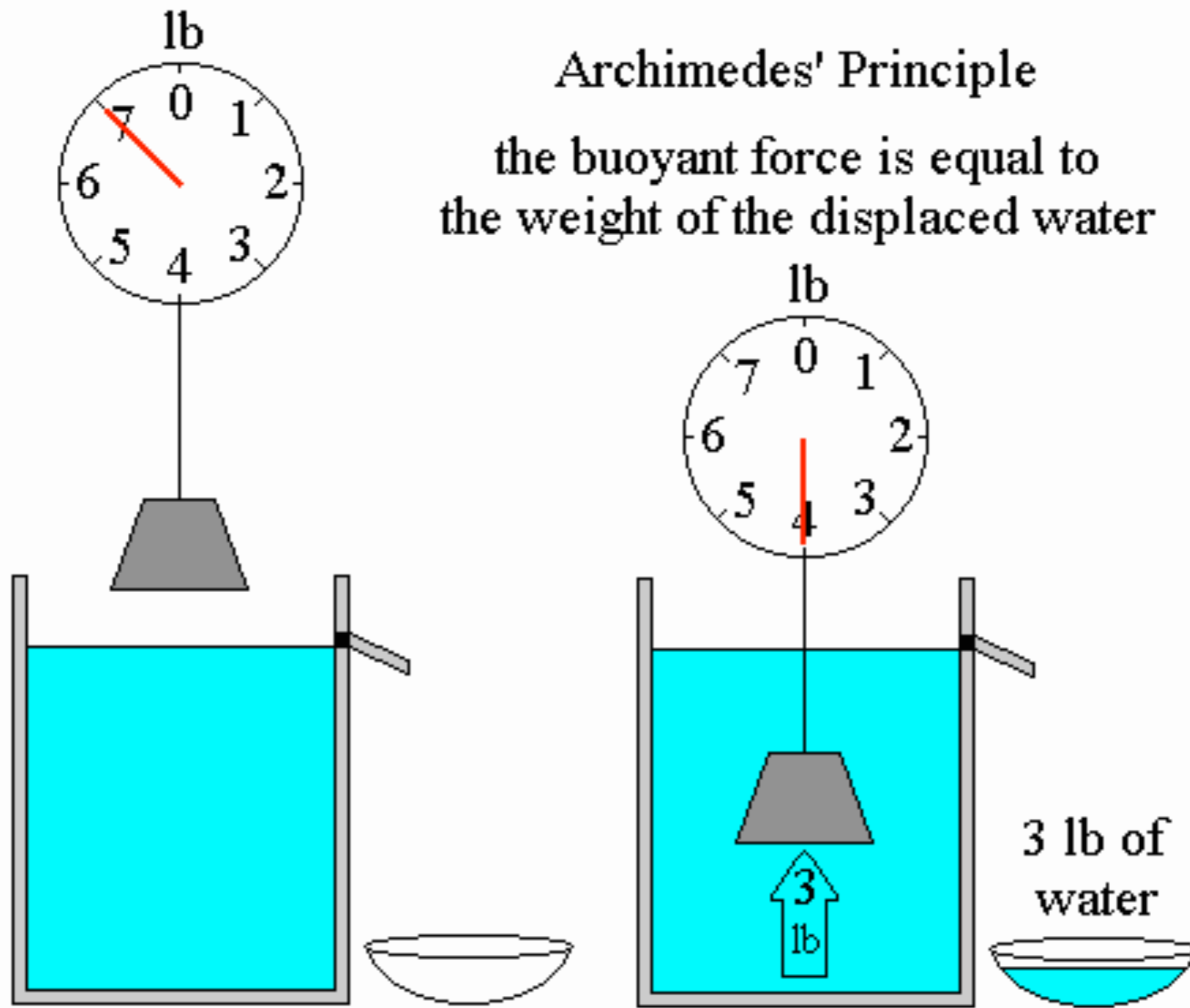
There is a principle in science called Archimedes' Principle and it states that something floating will displace an amount of water equal in weight to the part of itself that is submerged.

But once it is completely submerged and no longer buoyed up, its weight is no longer a factor, and the object will displace an amount of water only equal to its volume. That amount is less than the amount displaced while it floated, SO, the level in the pool will _____

GO DOWN!

Archimedes' Principle

the buoyant force is equal to the weight of the displaced water



This is like our sins—they are a heavy burden when we carry them, but if we repent and ask God to forgive them, what does he do with them?

He throws them into the bottom of the sea, where they are completely forgotten and have no weight at all!

Isn't God wonderful? He knew about Archimedes' Principle!

In fact, he is the author of it!

Jacob carried his burden of sin in obtaining the birthright by deception for a long time (twenty years), but he struggled with Jesus in prayer over it and was forgiven!