

## MUSEUM AT HOME

### Float My Clay Boat

Want to make water and clay play a little more scientific? Here's a hands-on experiment that will teach your child about displacement and show how an object's shape affects its buoyancy. Your child will use clay to design the most buoyant boat he can!

### What You Need:

- Clay (make sure that it won't disintegrate in water)
- Medium-sized clear bowl
- Tray
- Several clear glasses



### What You Do:

1. Fill your bowl all the way to the brim with water. Have your child take a lump of clay and drop it into the water. Ask your child what he notices about the clay (it should immediately sink to the bottom of the bowl).
2. Repeat step one (you will have to fish out the clay, dry off the tray and refill the bowl), and this time, ask your child to notice how much water drips onto the tray (very little if any). Collect this little bit of water in a clear glass and set it aside.
3. Tell your child that there is a way to make this lump of clay float—you just need to play with its shape! Have your child make different designs and test them out until he finds a shape that stays afloat.
4. When your child has successfully made the clay float, it's time to test its displacement. Make sure your tray is once again dry and your bowl is filled up to the brim with water. Have your child place the clay in the water and observe together how much water now drips onto the tray (it should be more this time). Collect this water in another clear glass

(it would be best if the glasses are identical so you can see the difference in water levels).

5. Ask your child to look at the different amounts of water collected in the tray after you placed the clay ball into the water (which sank) and the newly-shaped clay into the water (which floated). You should see that more water was displaced or pushed out from the clay shape that floated. Objects that float displace the same amount of water as they weigh. So, if the clay weighed 5 grams, it should displace 5 grams of water in order to float.

## What's Going On?

Kids always love messing with water and clay...but this simple science experiment gives them valuable practice not only in developing hypotheses and testing them with clear measurements, but also in understanding physical principles which we use every day. Is your child learning to swim, for example? This clay experiment demonstrates clearly why a kid doing a cannonball will go straight down into the water, while a diver can stretch across it and start speed swimming. And if you're demonstrating swim safety, here's a perfect chance to reinforce the benefits of a well-executed "dead man's float."  
After all, science really is all around us, and there's nothing like explaining it to make the world feel exciting...and easier to understand.