

Stay at Home Science



Aluminum Boats

What You Need

Aluminum foil	Water
Sink or tub	Coins or washers

What You Do

1. Plan a design for your boat. *What shape will it be? How long, wide and deep will it be?*
2. Fold a piece of aluminum foil into the shape and size you planned. Work carefully not to tear the foil or create a hole in any corners.
3. Place your aluminum boat in a sink or tub filled with enough water for it to float.
4. Add weight to your boat using coins or washers, until it no longer floats. Count how many coins or washers your boat held.
5. Try again! Create a new boat to see if it can hold more weight than your first boat.

Questions to ask

- *How many coins/washers do you think your boat will hold?*
- *What happens if you place all the weight in one spot? What if you spread the weight evenly across the boat?*
- *What else could you use to build a boat?*

What's the Science?

Did your boat sink? Try spreading the same amount of weight over a greater space. When you increase the volume (or amount of space a boat takes up) without changing its mass, it becomes less dense. The buoyant force, or the force of water pushing up on the boat, will be greater and allow the boat to float. The buoyant force is equal to the weight of the liquid displaced by the object (or boat in this case). This is why very heavy, massive ships are able to stay afloat!

Try This

Use science vocabulary: Use related science words such as mass, volume, density and buoyancy as you talk and play together. Children learn new vocabulary words when they hear grown-ups use them in context.

Extend your experiments: Can you think of any other household materials you could use to build a boat? Try using duct tape, masking tape, craft sticks or even paper! Build boats of the same size and shape, then see which one can hold the most weight.

Keep in Mind

- Children are natural scientists; let them lead the way in their experimentation! Encourage them to ask questions and make suggestions only when they are stuck/discouraged.
- The order suggested is not the only right or perfect way. Adjust the activity based on the age, ability, and interests of the children.

Additional Resources

What Floats in a Moat? by Lynne Berry

Who Sank the Boat by Pamela Allen

