

“In the Water”

Module 13, Boat Building

The logo for "EXPLORE IT" is enclosed in a black rectangular border. The word "EXPLORE" is in a bold, sans-serif font, with the letter "O" highlighted in green, the letter "P" in blue, and the letter "R" in purple. The word "IT" is in a smaller, simpler font to the right.

Prompt:

Make a simple boat out of tin foil and add pennies to it until it sinks. How many can you fit? What happens when you change the design of your boat? Experiment and see what happens!

Materials:

- Large container or bowl
- Water
- Tin foil
- Scissors
- Approximately 50 pennies, or other spare change. If you don't have enough change, consider using pebbles, paperclips, or a combination of materials.

Note for caregivers: This activity could get a little messy. Use a plastic table cloth or garbage bag to cover any surfaces you don't want to get wet or do this activity outside.

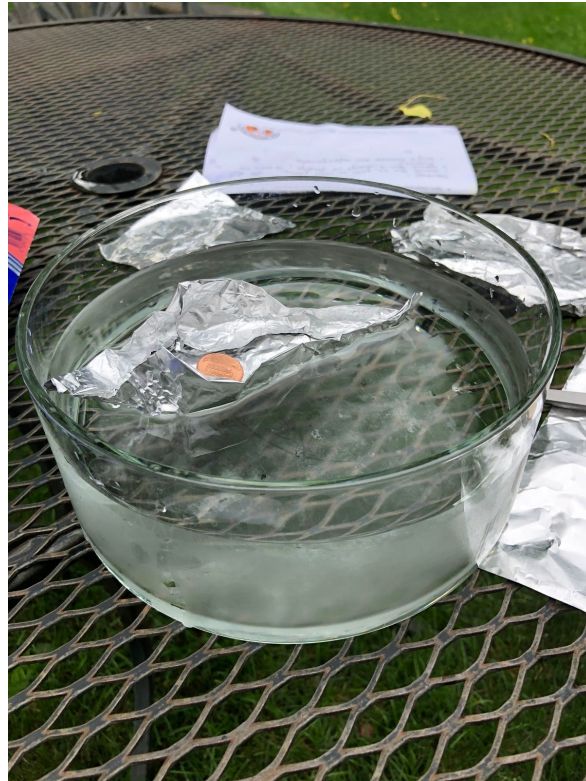
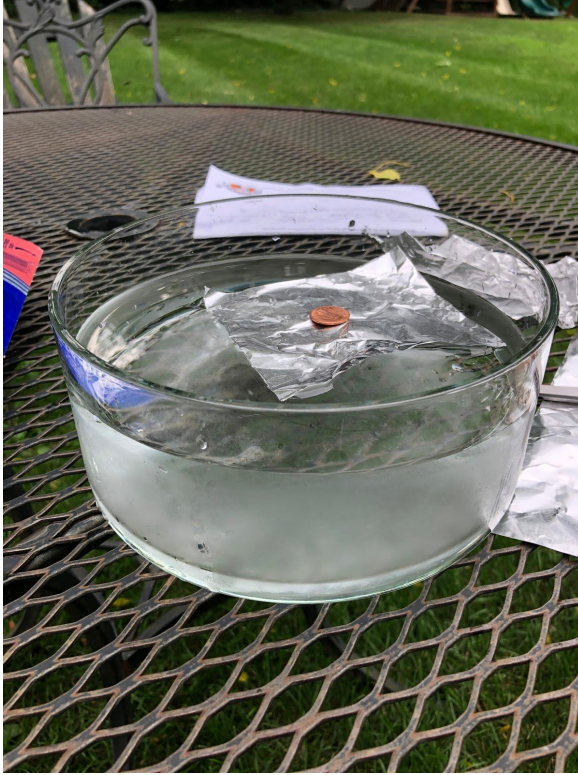
Instructions:

1. Read the prompt with your child.
2. Work together to create an “ocean”. Fill the container about halfway with water. If you are worried about splashing and spilling, set this activity up outside or inside on a surface with a plastic tablecloth or garbage bag.
3. Work together to cut the tin foil into smaller pieces. Start with some squares that are approximately 4 inches by 4 inches. Make 3 or 4 these squares to start.
4. Invite your child to use the tin foil square to build a boat, or something that floats on the water. Referring back to the prompt, remind them that their goal is to build something that can hold many pennies. Suggest they start with a simple design-- think about what a raft or a barge looks like!
5. When your child is satisfied with a design, encourage them to test their boat by floating it on the water. Then, slowly add one penny at a time. Does it matter where you place the pennies inside the boat? How many pennies until the boat sinks?
6. Once their boat sinks, encourage your child to build a new one or improve upon their

last design. Do they have a goal of how many pennies they want their boat to hold?
Create a boat that can accomplish this goal!

Resources:

Check out the three boat designs below for inspiration. One is a flat square of foil, one is a “barge”-- a square with folded up sides, and the other is a folded triangular design.



Extensions:

If your child needs more challenges to go along with this activity:

- Use different sizes of tin foil. Cut smaller squares and larger ones. Make small, medium, and large boats-- and see which holds the most pennies. Sometimes larger isn't always better!
- Invite your child to explore other things that sink and float. Gather (waterproof) objects from around the house and make predictions about what will happen when you place them in the water.
- Ask your child, "what else can your boat hold?". Pick something (like a waterproof toy) and design a boat that can hold this object without sinking.
- Try a different material for boat building-- what happens when you use paper, playdough, or popsicle sticks?

Together with your child, go to the "In the Water" topic on Flipgrid and share their tin foil boat.