

6th Grade Intro to Gateway  
Lesson: April 7 - Part 2 of 2

**Learning Target:**

Modeling, testing, evaluating, and modifying are used to transform ideas into practical Solutions.

**Warm-Ups:**

View Link: [Kitchen Foil Orgami Boat Build](#)

(note - do not use anything sharp without adult supervision like in the video!)

View Link: [Review of the Design Process](#)

## Lesson Introduction/Background Information:

We learned that design is a process, that involves lots of trying and re-trying different steps as a part of that process. This week, you are going to be designing some solutions to problems using materials you find around your house.

*Materials for today:*

Aluminum foil

Various small items like pennies, marbles, or beads

A sink or a container filled with water

Note - if you don't have aluminum foil, try the packaging of food boxes or parchment paper - anything that you might be able to get to float that you can also move and change.

## Practice:

Yesterday your goal was to design and build an aluminum foil boat that could float in water. We are going to expand on that goal and innovate (or improve) your original invention to meet additional design goals today. Feel free to sketch out your ideas first before trying them to meet each of these goals, and make sure you are taking notes on what worked and what didn't.

Goal 2 - Design (or re-design) your boat so it can hold cargo, like pennies, marbles, or beads.

## Practice:

Goal 3 - Change your boat so that it can hold more cargo than your original design could.

Goal 4 - Modify your design so that it would be a fun bath toy for a child.

Goal 5 - See if you can make a boat that floats and meets these other goals out of a different material than aluminum foil.

## Self-Assessment:

Go over your notes and decide what the ultimate best designs were. Did one design work best for all of the goals? Did different designs work better for different goals?

Show your met goals to your family members. If you have an interested family member, see if they want to compete with you to see whose boat can hold more weight (pennies, etc.).

## Extend Your Learning/Continued Practice:

Now that you've designed one or more boats using your own imagination, check out some of the ideas that Youtube has to offer for boat designs. Do they meet the goals that your boat design was able to meet? Compare the designs that others have come up with to your design.

Some examples:

[Origami Single Point Floating Boat](#)  
[Floating Foil Boat Experiment](#)