

Engineering and Design

Experiment. Fail. Learn. Repeat.

How many pennies can your aluminum foil boat carry?

1. Your team's job is to design and build four boats from four squares of aluminum foil. Only one square of foil can be used per boat. No other materials, such as tape, paper or staples can be added to the foil.
2. Talk with your teammates about how different boats look. What kinds of boats can your team make from foil? How might they look? Start by drawing the designs of Boat 1 in the box.

Boat 1	Boat 2
Boat 3	Boat 4

3. When your first boat is complete, test it by first floating it in the water. Then carefully load the boat with pennies until it sinks. Count the number of pennies the boat successfully floated and record that number in the data sheet.
4. Remove the boat from the water and put it in a safe place. You may need it later.
5. Use what you learned from the last boat to make a new, better boat. Draw your design for Boat 2 in the box. Use a new square of foil for each new boat.
6. The best boat will be demonstrated in front of the class, so don't throw your best boat away until we know which boat in this class held the most.

Boat #	Number of pennies held

What was the mean of the pennies held? _____

What was the median of the pennies held? _____

What was the mode of the pennies held? _____

Make a bar graph of how many pennies each of your boats held.

What was the main difference in the design of your least effective boat and your most effective boat?

What did you learn about engineering and design from this experience?

