

Intro (5 minutes):

- Why does a boat float even though it is heavy and full of people or items?
- What is buoyancy?
 - Do aluminum foil activity -> 1 crumpled, 1 flat (same mass) which will float or sink
 - Action/Reaction and brief force overview -> push against neighbor's hand

Design Matrix (7 minutes):

Order these in importance. Cost/Resources, Buoyancy, Time in Water, Appearance of Design

Categories:	Scores (1-5):	Drawing:

Build Design (10-15 min):

Testing the Design (10 min):

- Put heavier objects onto the boat
 - Weigh out some objects from lab (or marbles)
 - Competition: whose boat can hold the most weight
 - Record max weight, number of marbles, point of failure, time of failure (break, sink)

Re-Design (if time leftover):

- Re-build to beat prior number of marbles
- What should you change?
- Why?

Max Weight Held	# of Marbles	Resources (Total number):	Point of Failure:	Time of Failure	What to fix

Materials to get tonight:

Foil

To do:

Print copies of everything

Build one boat

Get large bin(s) for holding water

Grab timers

Maybe a scale → bring food scale + corks from home, Emily

Sunny bring marbles, corks