



# Flotation Innovation

## INSTRUCTIONS

During World War II, the Charlestown Navy Yard was a buzzing center of innovation. Over the course of four years, workers built 166 ships designed to speedily cross oceans, protect other ships, and transport soldiers and materials.

Using some of the listed materials, take some time to tackle each design challenge. What makes each innovation unique? What do they have in common?

**1. Plan Your Design.** Before you begin building your ships, consider the design needs. Sketch your idea out on a piece of paper. Think about shape, size and materials before you begin to build.

**2. Long Haul.** Landing ships were *amphibious* vehicles, meaning they could travel by sea and pull up on land. The landing ships built in Charlestown were the largest of their kind, with capacity to carry over 40 vehicles and over 200 troops. Your design challenge is to design a ship that can carry a heavy load.

**3. A Need for Speed.** Destroyers, like the USS Cassin Young, were designed to move *quickly*. Your second challenge is to create a ship that can move through the water quickly and efficiently.

**Time:** 30 minutes - 1 hour +

**Materials:** Tin foil, cardboard, paper, tape, string, pens or markers, and a small basin of water

**4. Call Me Mr. Fix-It.** Repair vessels were constructed to provide emergency repairs to ships at sea and abroad. If you received an SOS from a ship, what type of vessel would you need to quickly respond? Would it be fast? What type of equipment would you need to carry? Your third challenge is to create a ship that can adapt to different needs.

**5. Razzle Dazzle.** In order to make the distance between ships more difficult to identify, the Navy painted the American Fleet in patterns known as "Razzle Dazzle." What type of modern-day camouflage would you cover your ship(s) with?

**6. Fail Forward.** Building a boat is serious work. Part of the design process is learning from your mistakes and making improvements. What might make your design(s) better, stronger, sturdier, or faster? If you have materials remaining, try to make some changes and see how they work out.

**7. Share Your Designs.** Take a minute to share your creations with your fellow boat-builders on social media using #FindYourParkAnywhere.

### QUESTIONS TO CONSIDER:

- Part of the design process is all about creating a **prototype**. Prototypes are simple models that can help to identify strengths and weaknesses in a design before it hits the assembly line.
- What about your **prototype(s)** worked the best?
- How did your **prototype** change the way you thought about the design?
- How many **prototypes** do you think you would need before building a live-sized navy ship?

