

WORKSHOP EXTENSION ACTIVITY

Built by The Home Depot Kids Workshop

November 2020: Battleship

Ages 5-12

CONNECT.

Boats make floating look easy, but have you ever tried to do it? You may have been in a pool, lake, ocean, or even a big bathtub! Was it easy or hard to stay near the surface of the water? Why?

INVESTIGATE.

You'll need:

- Your Battleship
- A sink, bathtub, basin, or bucket filled with water
- Unfinished wooden block set
- Stopwatch (for the challenge)

While *you* may not have been specially designed to stay afloat, boats like your Battleship are! But even if ships have been built to stay above water, there are still some factors that could make this difficult—such as weather conditions or the weight onboard.

Pretend that you are the Battleship's Captain. While you may not be able to control the weather, you do have some control over the number of crew members and supplies onboard. In order to have a successful mission, you need to have a full ship...So let's see how much weight you can safely fit!

1. Pretend that each block represents important supplies or people. Hypothesize: How many blocks do you think you'll be able to take onboard without sinking? _____
2. Place your Battleship in the water. Then put two blocks aboard your ship and observe how this weight affects your boat. Do you want to change your hypothesis? If so, cross out your guess above and record a new one!
3. Continue to place blocks on your Battleship until it begins to submerge in the water. Then discuss:
 - How many blocks could your boat hold before it began to sink? _____
 - Did one part of your boat start to sink first or did the whole boat submerge at once? Why do you think it sunk this way?

INNOVATE.

You just received news that your Battleship will have to carry more people and more supplies than originally anticipated. Think about what you learned during your investigation and consider: How could you safely put more even weight on your Battleship?

If you said redistribute the weight or change the way the blocks are placed on your ship, you may be on the right track! Let's give this a try:

1. Remove all weight from your ship.
2. Then, one by one, carefully place the blocks back on deck—this time in a different configuration. Focus on how each block affects the ship and use this to help you decide where to place the next block.
3. Stop adding blocks when your boat begins to sink. Then consider:
 - How many blocks could you fit this time?
 - Did changing the placement of your blocks make a difference? Why or why not?
4. If you were *not* successful in increasing the weight that your ship could hold, remove everything once more and give it another shot!

Looking for a challenge?

Race against time: Predict not only how much weight your Battleship will be able to hold, but also how quickly you'll be able to successfully pack up your ship. Grab a stopwatch and time yourself, this time trying to beat the clock!

