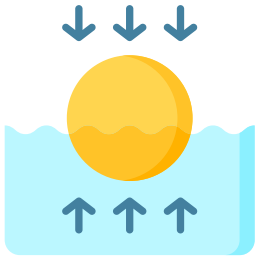
Float a Boat



Why do rocks sink in water but wood floats? Explore this activity and find out what causes some things to float and causes other things to sink.

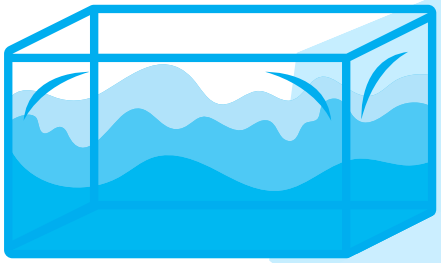
Materials:

- 6 Squares of Foil
- Pennies
- Container
- Water
- Paper
- Writing Tool

Procedure:

1. Fill the container with water. The container should be big enough to fit the boat.

1



2. Create a boat with one square of foil by folding the edges up.

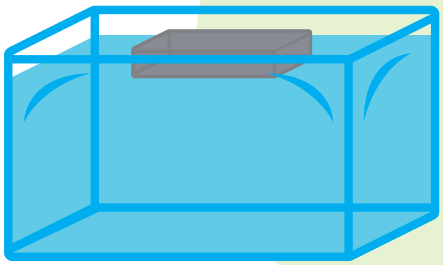
2

3. On your paper, write down how many pennies you think the boat will hold before it sinks in the water.

3

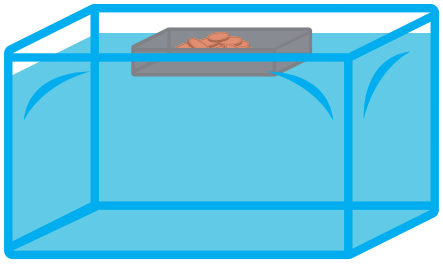
4. Try it out! Place the foil boat in the container of water so it is floating on top.

4



5. Gently add pennies, one at a time, to the boat until it sinks.

5



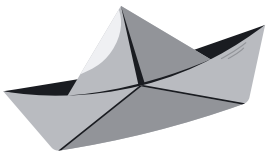
6. Count how many pennies the boat was able to hold and write it down. Was it the same or different from your guess?

6

Float a Boat

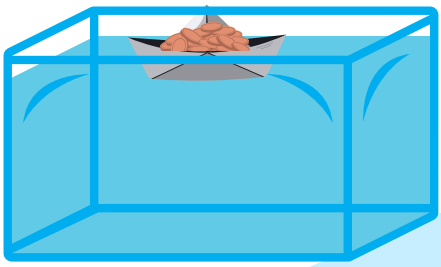
7. Redesign the boat and write or draw the changes. Guess how many pennies this new boat will hold.

7



8. Test the new boat and how many pennies it will hold before sinking. Did it do better, worse, or about the same?

8

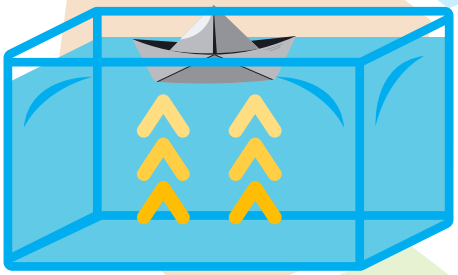


9. Keep testing as many times as you want, but keep track of the design changes and how many pennies each boat holds.

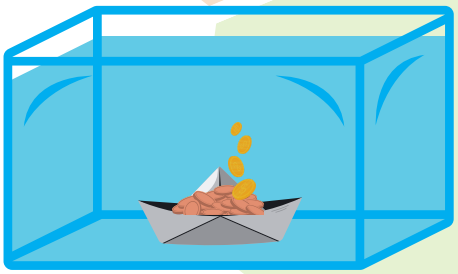
9

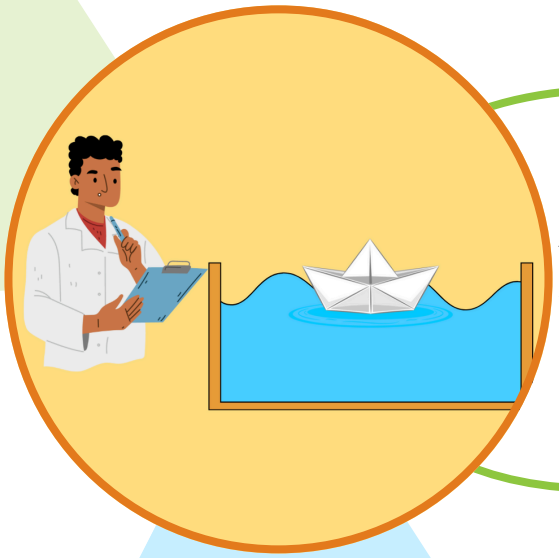
WHAT'S HAPPENING?

Archimedes' principle states an object that is placed in a fluid, like water, is acted on by an upward force equal to the weight of the fluid that is displaced. This is called **buoyancy**. The foil boat displaces just a little water, but it is enough to push back on the boat to keep it floating.



The boat also floats because the density of the empty boat is less than the density of the water. As pennies are added to the boat, its density increases and is eventually more dense than the water causing it to sink.





DID YOU KNOW?

An **hydrodynamicist** is someone who studies everything about buoyancy. If you liked this activity, maybe hydrodynamics is for you!