

## Praxis “Making Science Fun”

### Boat Load

What shape should boat bottoms be in order to float?

#### What you'll need:

- 3 or more sheets of aluminum foil 20 cm square.
- Large washers
- Pan of water
- Containers for used (wet) washers
- paper towels (just in case)



**Procedure:** (Remember to be sure to have your parent’s permission and they have the time to watch and help as you do your experiment.)

1. Build a boat out of one piece of the aluminum foil. Don’t test your design yet (that’s the experiment). Be creative but think of boat shapes you’ve seen.
2. Place your boat on the water and add washers to it until it sinks.
3. Try different designs and see if they will hold more washers.

#### What's happening?

Boats have always been important. Some are designed for speed, some for ability to hold stuff (cargo) and some designs depend on the material from which they are made. All boats float due to buoyant force. When a boat sits on water it pushes water out or “displaces it”. If the weight of the water the boat pushed out is more than the boat (and its cargo) then the boat floats. You likely discovered that the larger the area of the bottom of the boat, the more cargo (washers) it could hold.

#### Project Extension:

The depth of water a boat needs to float is called its draught. A large boat with a heavy load could extend quite far under the water. Look at pictures of large boats and you will see the markings on the side that indicate how low in the water the ship can safely go. Boats that carry large loads are often very long or wide to help reduce the draught.

This experimental activity was one of many based on our “Boats and Buoyancy” grade 2 Learning Kit. Our teaching kits are loaned out for FREE to help give classroom teachers and parents of home schooled children an opportunity to explore Science in interesting ways. Please consider volunteering to speak to a class about any one of our Science learning kits described on our website. Or consider volunteering to help out at one of our community events such as the Family Science Olympics on October 15, 10:00 am – 3:00 pm in the Taylor Science Wing of MHHS (5<sup>th</sup> Street entrance). We would be most appreciative to hear from you.

Lorne Cooper, Regional Executive Director

PRAXIS, “Making Science Fun”. Contact Praxis at [praxis@praxismh.ca](mailto:praxis@praxismh.ca), [www.praxismh.ca](http://www.praxismh.ca), Tweet or follow us @ PraxisMedHat, or friend us at Praxismh on Facebook. Address: c/o 200 7<sup>th</sup> Street S.W., Medicine Hat, AB, T1A 4K1 Phone: 403-527-5365, Fax: 403-527-6570.