

PATHFINDER STEM PROJECT 2025

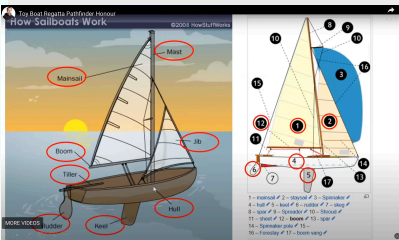
Toy Boat Regatta



YouTube Instruction Video

Gretel found out that the author of the Toy Boat Regatta honor has created an instructional video, and made it available on YouTube at:

https://youtu.be/nxdAR4NqnCc?si=_XEhmQ5m3KI4aP0g



Help your Pathfinders learn about the history and science of boat building while building and racing their creations at the fair.

This is a skill level 1 honor.

The Advanced Toy Boat Regatta honor is also available. It is skill level 2.



Mr. Hainey's Capsized Ping-Pong Boat

Photo: Meaghan Hallberg

STEM 2025

This year's STEM challenge is to build a couple small boats.

One wind powered, and one rubber band powered from a kit or recycled materials. Bring them to the Pathfinder Fair April 27th.

Race them to fulfill requirements 8 and 9 of the NAD Toy Boat Regatta honor.

Please keep your boat designs no wider than 3 1/2 inches. They should be able to race in 2" of water (no big keels please).

Wind power boats can be sailed using straws, if desired. A straw can make it easier to navigate some styles of sail boats.

The rubber band powered boat can be a bit more challenging to design. Some of the simple online kits are easy to make but they only propel the boat a couple feet.

At our Northern Area Rendezvous, a number of Pathfinders made and raced boats made from a section of a pool noodle.

After you design and build your boat, **be sure to test it.**

It may look nice but not float well at all.

See you April 27th to race your Toy Boat Regatta creation!

NAD Honor Requirements:

Basic:

- Draw a schematic of a wind powered (sail) boat showing pertinent features and how they function. Features should include, but not be limited to a boom, hull, jib, keel, mainsail, mast, and rudder. How do features commonly removed from toy boats affect functionality?
2. Draw a plan for a rubber band-powered toy boat of a design of your choosing showing pertinent features that differ from a wind powered boat.
 3. Be able to describe Archimedes' Principle of Buoyancy and how this principle applies to all boats.
 4. Be able to describe Newton's First Law of Motion and how this principle applies to all boats.
 5. Be able to describe Newton's Third Law of Motion and how this principle applies to a wind-powered (sail) boat.
 6. Be able to describe the difference between Potential Energy and Kinetic Energy. Discuss how and when a toy rubber band powered boat uses both types of energy.
 7. Use recycled materials to make at least one toy wind powered (sail) boat and at least one toy rubber band powered boat. Each toy boat will be no wider than 4 inches (10 cm) and suitable for travel in a 6-inch (15 cm) wide lane of water.
 8. Participate in an organized wind-powered (sail) boat race using a boat you have made to complete this honor.
 9. Participate in an organized rubber band boat race using a boat you have made to complete this honor.
 10. Identify and tell a short story of at least two instances in the Bible that describe floating boats/objects and two that defy Archimedes' Principle of Buoyancy.

Some Regatta Boat Ideas from the Internet:

