

Cardboard Boat Regatta



Saturday, August 11. Event Begins at 10:00 a.m.

Bonnifield Lake (Waterworks Park) - Fairfield

Registration and boat inspection: 9:00 a.m.

The Challenge: Design and construct a human muscle-powered boat made of corrugated cardboard.

Teams: Teams can be made up of two to 8 crew members. Kids must be 8+ and have an adult in boat. High school students may compete without an adult in the boat.

Build Your Boat: Build in advance. **Only** corrugated cardboard, tape such as duct tape or paper packing tape, wood glue, latex caulking, outdoor paint allowed. Polyurethane for topcoat is optional. **(Forbidden materials:** non-corrugated cardboard, wood, foam core boards or styrofoam. Cardboard that has been factory coated with wax, two-part glues, fiberglass resins and plastic epoxies, metal, plastic and pasteboard or chipboard types of cardboard. Flex-seal or other rubberized sprays or tapes.

Boats: Propelled only by canoe paddles, oars or kayak paddles. All boats must be muscle-powered from within the boat. NO

prone, surfboard or swimming positions may be used.

Fee: \$5.00 for individuals, families and youth organizations. \$20.00 for other organizations and businesses.

Registration: "Team Captains" must register boat at 9:00 a.m. at Waterworks Park. All "crew" members must sign a waiver.

Safety: Participants must wear lifejackets. All crew members must wear aqua socks or tennis shoes. Use of alcohol is strictly prohibited.

For more information contact Therese at 641-472-4421.

This event is co-sponsored by:



Tips on Boat-Building

The challenge is to build a person-powered corrugated cardboard boat that is capable of completing three trips around a 200-yard course.

Be as creative as you like in your design. Maybe you want your boat to look more like a racecar, or a spaceship, or an alligator! Who knows? It is all up to you!

Supplies needed

corrugated cardboard
wood glue
duct tape
long straight edge (ruler, yardstick, etc.)
cutting tool (utility knife, box cutter, tin snips, etc.)
quick dry caulking (latex)
paint and brush/roller (outdoor paint)
marking pens/pencils
weights
binder clips/clamps
putty knife
polyurethane for topcoat (optional)

Forbidden materials

non-corrugated cardboard
wood
foam core boards or styrofoam
cardboard that has been factory coated with wax
two-part glues
fiberglass resins and plastic epoxies
metal
plastic
pasteboard or chipboard types of cardboard
Flex-seal or other rubberized sprays or tapes

When to start building

Although you can build a boat in a weekend, building a good boat that will last through multiple races will take a bit more time. Allow at least a couple weeks so the glue will dry.

Boat-building process

Step 1: Draw a design on paper and use this design to build a small mock-up. Use this scale model to determine how many sheets of cardboard you'll need. Hint: Building a scale model of your boat will save you time and cardboard in the long run!

Step 2: Once you have a model that looks good, transfer the design to graph paper using appropriate dimensions. This can be used to draw a pattern on the cardboard sheets. Hint: Lines to be cut should be identified differently than bend lines.

Design considerations:

+set a goal - are you building a "fun" boat or a "speed" boat?



+plan the right size boat - a cardboard box with dimensions of 1'x1'x 3' will float 180 lbs. So, if your boat is big enough to hold you, it should be big enough to float. If you plan to have a 6-person crew, build a boat that will fit 6 people. Be sure that you account for everyone's weight.

+flat bottoms tend to be less "tippy" than V-shaped bottoms.

+dimension considerations - longer boats go faster, but they are harder to turn. Boats shorter than 10' are difficult to steer straight. 10-12' in length seems to be just about right. Don't make your boat sides too high. For example, 18" in height will allow room to sit and paddle without the edge of the boat blocking your arms. Plan width based on the number of people. If there will be just one paddler, don't go wider than 30". If there are two, try about 48".

Step 3: When you are ready to go, start with flat sheets of cardboard. Hint: To bend cardboard cleanly, make a dent or a crease in the flat cardboard using a blunt rounded tool like the handle end of a crescent wrench.

Step 4: Usually a boat will be made up of multiple pieces assembled together and glued. Hint: After gluing use a clamp to hold the glued parts together until dry (1/2 - 1 hour).

Waterproofing tips:

+paint all surfaces of the cardboard before gluing. Deck enamel works well. Use 3 coats.

+caulk edges

+glue after painting and caulking. Squeegee glue across entire surface to be glued.

+avoid oil-based stains. The oil soaks into the cardboard, may never dry, and this will weaken the cardboard. Also, hot-glue from glue guns are not allowed and will melt on warm days.

+reinforced paper tape works best over caulked edges and seams. Duct tape will shrink when painted. Clear tape will melt when painted.

Step 5: Paint and decorate the outside of the boat!