

SHOAL CREEK WATER FESTIVAL

INTRODUCTION, BOAT BUILDING & RULES



WHEN:
SATURDAY
AUGUST 10, 2019

WHERE:
WILDCAT PARK
JOPLIN, MO



Being a part of the Cardboard Boat Race can be a great Team Building activity for your organization. You get to design, name, build and sail your own boat. On Race Day, families, other members of your organization can come cheer your boat on. There are a number of organizational benefits:

- Facilitates better communication
- Promotes creativity
- Deepens relationships
- Increases morale
- Improves problem-solving skills
- Celebrates giving

Boats are made entirely of cardboard and powered by paddlers. They will race down a section of Shoal Creek. Boats compete in different categories in heats for honor, glory, bragging rights and interesting trophies. Categories include: Solo, Tandem, and Team.

As a part of our fleet you will:

- Have a boatload of fun
- Compete in an amazing event
- Receive fame and glory
- Have a chance to support Wildcat Glades Park
- Have a safe racing environment on race day

COMMITMENT

Captains and Crews who wish to participate in the Shoal Creek Water Festival Cardboard Boat Race event make a commitment to the following:

- Construct a boat out of cardboard and duct tape.
- All boats are human powered (oars and paddles are acceptable as propulsion tools; you provide the oars/paddles)
- Participate in the entire event which includes:
 - Bringing completed boat to the wharf on Saturday, August 10 by 9 a.m.
 - Stay for brief awards ceremony after the race
 - Dispose of or remove boat from property after the race
 - Register your boat by August 8th



IMPORTANT DATES

August 8, 2019

Last day for boats to register. All boats must have submitted their final Name of Boat (or boat will be only known as the business name) and paid the \$25 registration fee.

August 10 -Boat drop-off

Boats must be brought to the Shoal Creek Water Festival Staging Area by 9:00 A.M. From 9:00-9:30 there will be a Boat Crew Orientation. During this time, we will collect team members' signed wavers and cover general instructions.

August 10 - RACE DAY!

From 9:00 am through the race, guests will have the opportunity to eat a variety of foods from the best Food Trucks in our area, check out the boat displays and "vote" for their favorite boat with dollars. This is a great opportunity for boat builders to solicit "votes" for the People's Choice Award.

The first boats hit the water at **1 p.m.** Awards ceremony begins immediately after the final race. *** Time subject to change. All participants will be notified if the award time changes. ***

AWARDS

First, Second and Third Place Trophies will be awarded for the top three boats in each division (solo, tandem, and team). A cardboard boat must complete length of the course to qualify as a "finisher." Swimming crewmembers pushing a boat (or some portion of it) through the course is not considered "racing." The boat (or some portion of it) must be maneuvered and propelled by at least one paddling crewmember.

Race Medals - Guaranteed to all registered participants including crew members and boat builders. These are handed out during the awards ceremony- and each crew is recognized.

Special Trophies will be awarded for the following:

- **Judge's Choice Award** - Awarded by the judges based on creativity, showmanship and team spirit. Costumes and props are encouraged!
- **People's Choice Award** - Awarded to the boat that receives the most "votes" (in monetary terms) cast by the spectators throughout the day until the conclusion of all races. Boats may do outside fundraising prior to the event for their boats.
- **The Titanic Award** (Most Spectacular Sinking) - Awarded to the crew who, in the opinion of the staff, was the most spectacular in the way the ship and its crew went down. (As long as the boat or some part of it is propelled by at least one paddling crewmember, the boat may continue to the finish line.)

Awards Ceremony - will be held after the race in the Event Tent.



- The ENTIRE boat must be built of cardboard, duct tape, and one-part polyurethane. (Any part of your boat that touches the water must be cardboard. This includes the hull, decking, keel, cowling, superstructure, oar locks, seating and rudder. Nuts, bolts, washers and staples are **NOT** allowed in hull construction. The cardboard may be as thick as you want, but may **not** be glued or attached to wood, plastic, fiberglass, etc.)
 - Only exceptions are the paddles & decorations
- Use cardboard boxes, “blocks”, carpet tubes
- NO pre-treated cardboard allowed
- NO wood, plastic, Styrofoam or fiberglass
- NO caulking compounds or two-part/mixed adhesives
- NO wrapping in duct tape, plastic or fiberglass or similar product
- Duct tape may be used to reinforce seams
- Duct tape, masking tape, or adhesives such as ‘liquid nails’ CAN be used to connect cardboard to cardboard and CAN be used to reinforce all seams & stress points.
- Waterproof the boat with Varnish, Paint or Polyurethane (one-part, paint-like substance).
- Decorations are encouraged –as long as they don’t effect structural strength or buoyancy
- Boats CANNOT tow anything behind them for the safety of other boats.
- **Every crewmember must wear a PERSONAL FLOATATION DEVICE (PFD)** & proper footwear. Please provide your own PFDs.
- All crew members MUST sign a Participant Waiver/Hold Harmless Agreement on race day. Boats will not be allowed to race without a signed agreement from each race participant
- All boats are human powered (oars and paddles you provide are acceptable as propulsion tools)
- Alcoholic beverages are NOT permitted at any time



RACE DAY—Please check in at the registration table on race day no later than **Noon** (Boats have the option to arrive the day before the race at 4PM). Unload your boat in the display area. After unloading, please move your vehicle to the parking lot. Set up your boat display. You will be led to the starting area by a volunteer. Please have enough help to get your boat safely in the creek. After the race, the boat crews must remove all cardboard, decorations and other materials from the water and the grounds. Volunteers will be on hand to help. You can take your boat home with you or dispose of it in on-site recycling bins.

If there is any doubt about the construction, the judges reserve the right to use a probe, such as an ice pick, to test and verify that only cardboard has been used. Failure to abide by any design, race rule or the direction of a race official shall be cause for disqualification. The Judges' decision shall be final. Please contact the Wildcat Glades Friends Group office if you have any questions.

Boat decorations and crew costumes are encouraged
- use your imagination;
you will be awarded for your creativity!

Construction Materials

Permissible Materials

Corrugated Cardboard
Appliance or grocery stores

Cardboard “blocks”
Furniture stores

Cardboard Tubes
Carpet/linoleum stores

Fastening material
Duct or masking tape
Liquid nails adhesive

Latex Paint, Varnish

Materials NOT Allowed

Wood, Styrofoam

Plastic sheathing

Fiberglass

Sona-Tubes, coated cardboard

Silicon, Wax, Tar

Caulking compounds

Metal

Staples, clamps, screws

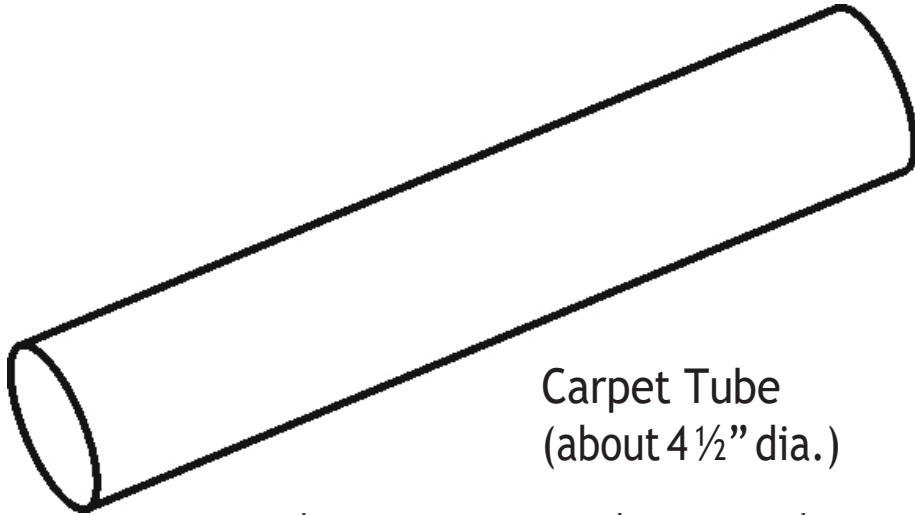
Judges decide on the interpretation of the rules



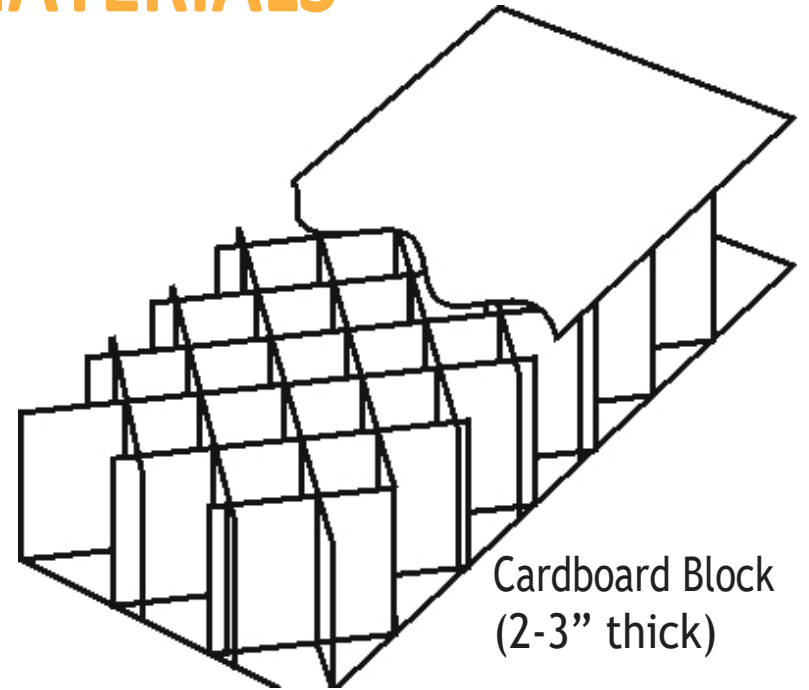
Just a few examples...

CONSTRUCTION MATERIALS

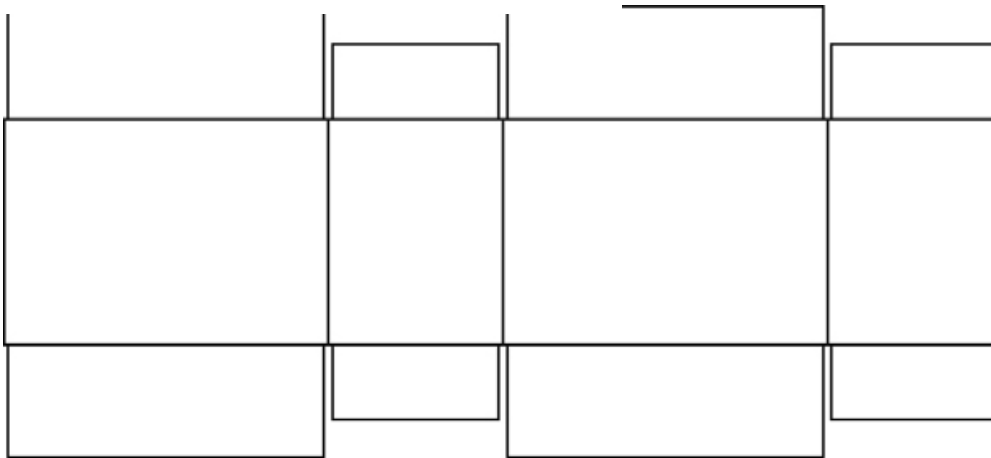
EXAMPLES



Carpet Tube
(about 4½" dia.)



Cardboard Block
(2-3" thick)



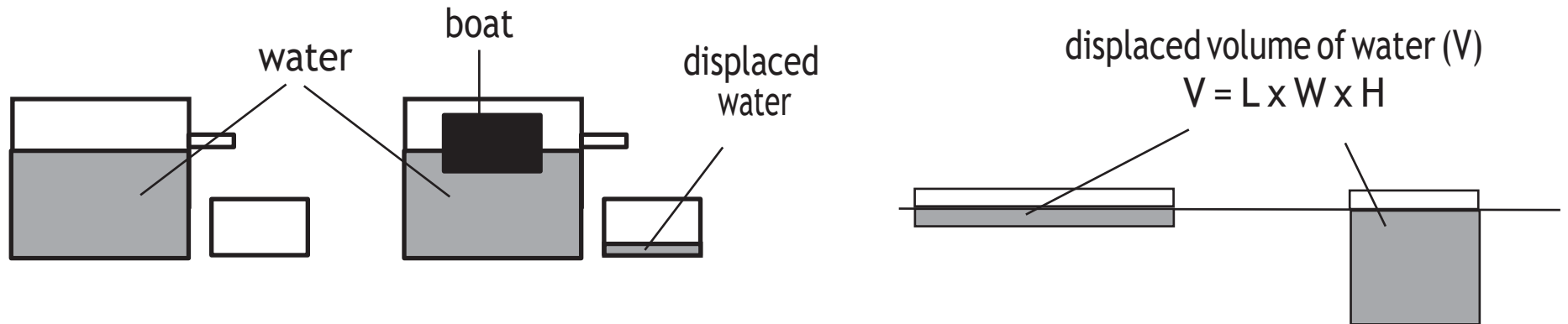
Cardboard Box - cut open

CARDBOARD BOAT DESIGN

- Set the Design Goal: Fun, Speed and Appearance
- Sketch out your design
- Build a scale model from Manila paper:
- Estimate materials or plan how to use what you have
- Plan out what construction techniques will be used
- 1'x1'x3' box will float 187 lbs.
 - If it'll hold you, it's big enough to float
- Flat bottom, sit-to-paddle & canoe styles - are the best/easiest
- Rudders help keep you straight but make turning difficult and add complexity to your design.

CARDBOARD BOAT PHYSICS

“How much will you sink?” - Displacement



Weight of Water =
62.4 pounds/cubic-foot

Water Displaced (ft³) =

$$\frac{\text{Weight-of-boat-}\&\text{people-lbs}}{62.4\text{lbs/ft}^3\text{-H}_2\text{O}}$$

Depth (ft) boatsinks

EXAMPLE:

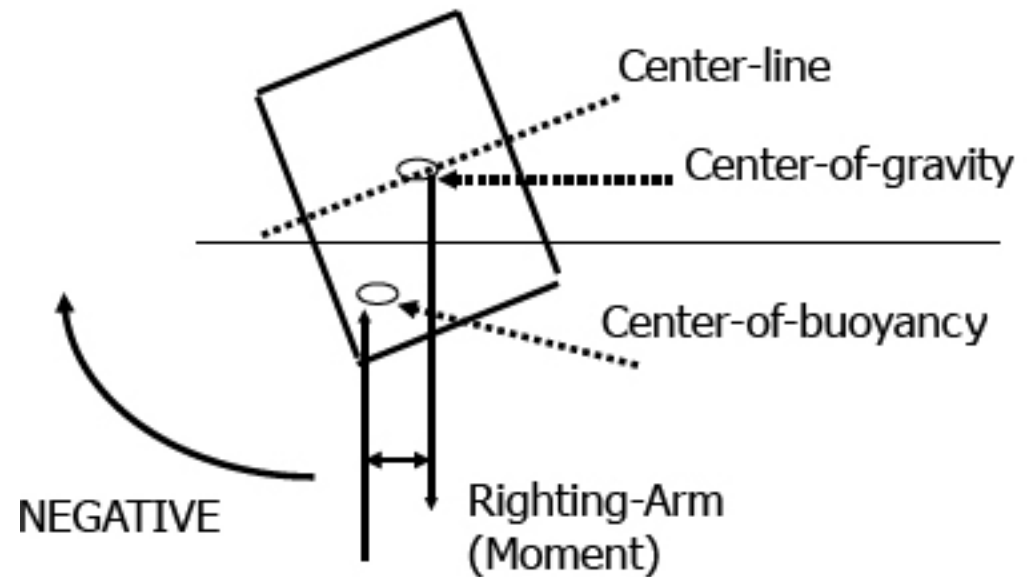
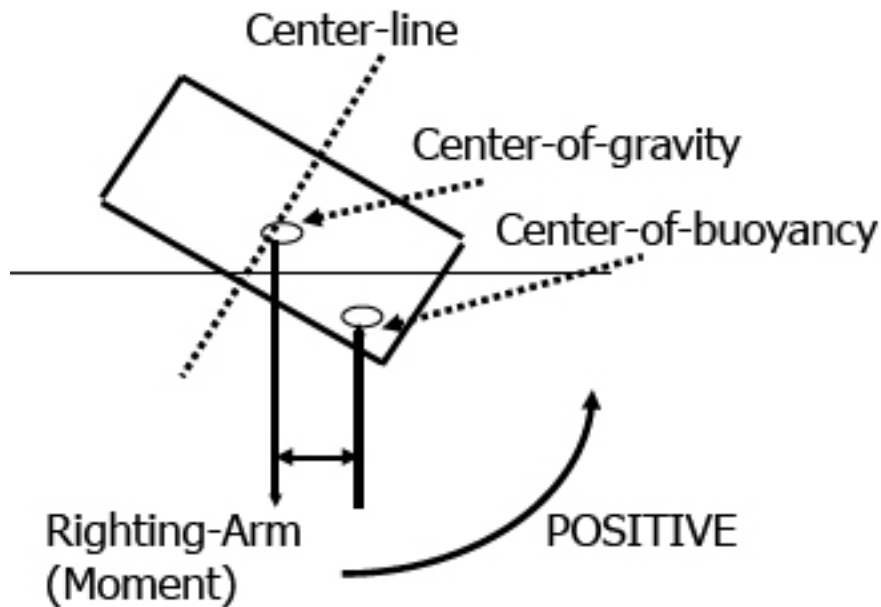
Box boat, 3ft x 6ft, 1 ft tall (high)

Boat volume = 3' x 6' x 1' = 18 ft³

Boat displacement = 18 ft³ x 62.4 lbs/ft³ = 1123.2 lbs

Which equates to 93.6 lbs per inch of boat height

“Wider is Better” - Center of Buoyancy



Movement Through the Water



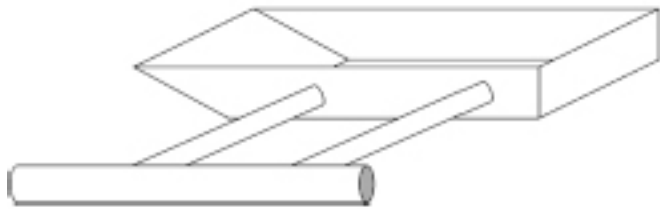
Simple
Box



Slanted
Box



V-Shaped
Bow



Outrigger
Design



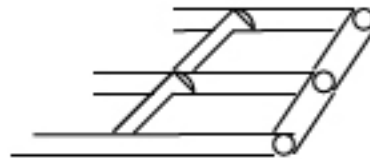
Pontoon
Design



Raft
Design



Solid Tube
Frame



Center/Cross
Beam
Frame

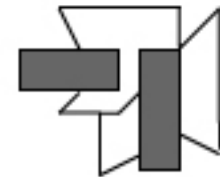
FRAMES

CONNECTING TUBES

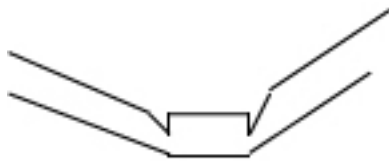
Cardboard
Wrapper for Tubes
End-to-End



Cardboard
Wrapper for Tubes
At Right-Angles



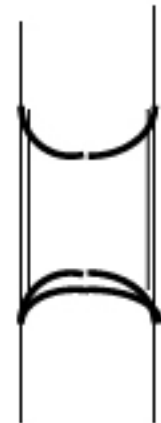
FRAME ANGLES



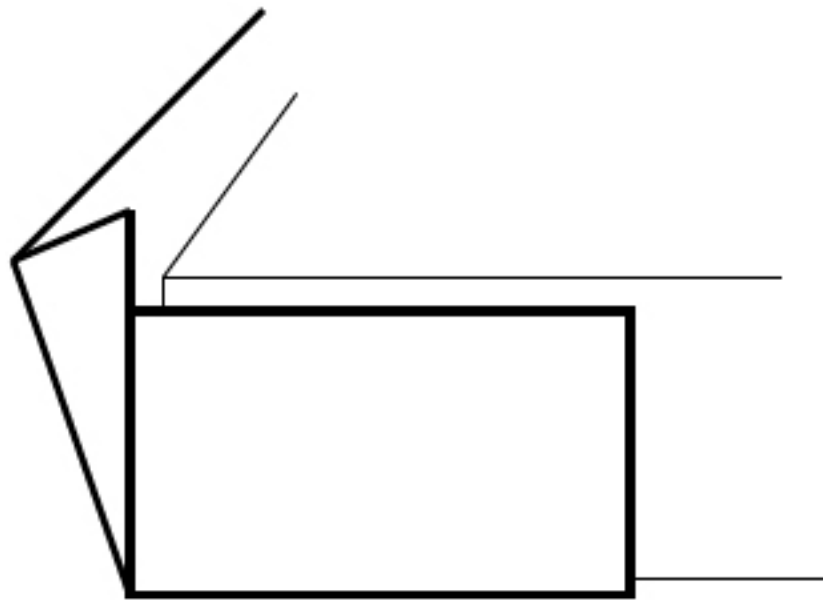
V-Shaped Cuts



Multiple Cuts
for Sharper Angles



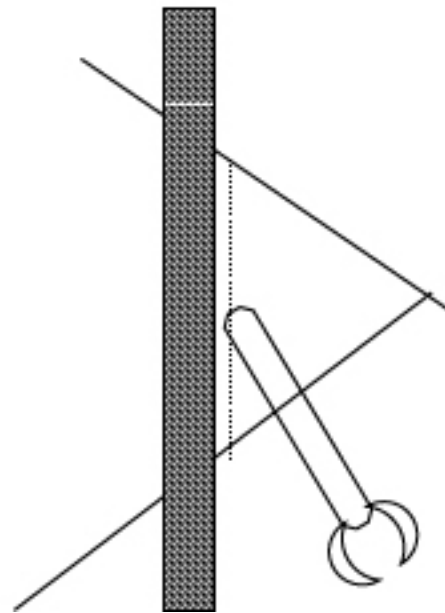
TUBE CUTTING TEMPLATE



FOLD & OVERLAP
CARDBOARD
AROUND CORNERS

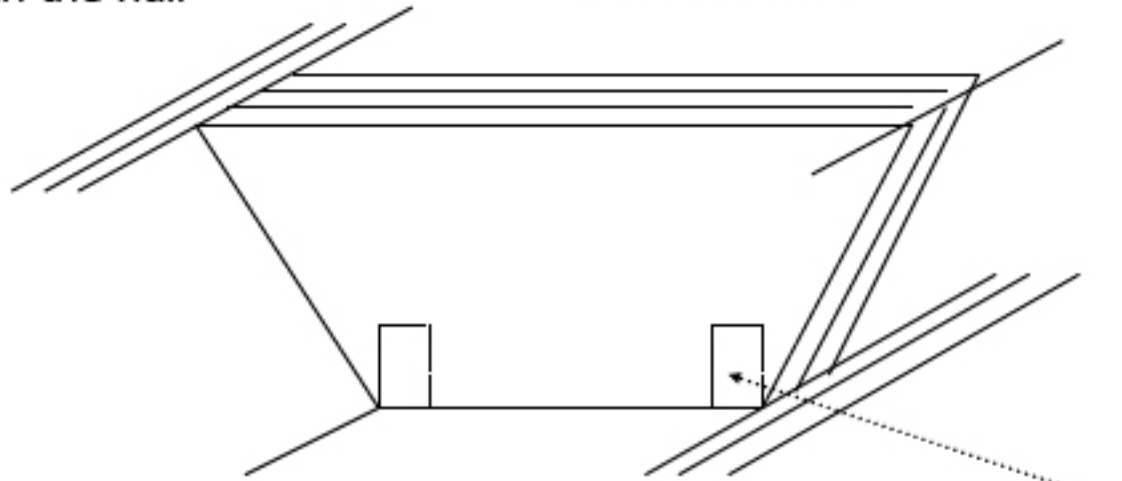
Crease/Score a line
for a nice

STRAIGHT
FOLD

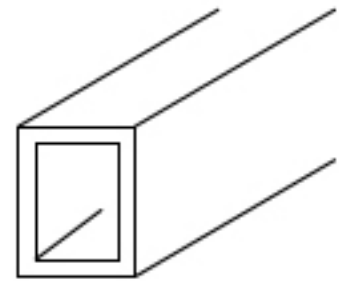


Multiple cardboard layers
"glued" together on the sides
strengthen the hull

Multiple trapezoid-shaped pieces
"glued" together to form a
"support block"



A sheet of cardboard
could be folded &
"glued" together to
form *tubes/beams*





WE'LL SEE YOU AT THE CREEK
AUGUST 10, 2019

Boats arrive August 10th at Wildcat Park, 9:00 a.m.

If you have questions, contact:
Lauren or Robin

Wildcat Glades Friends Group
PO Box 3063
Joplin, MO 64803
417-708-7713
www.Wildcatglades.org



Boat Name: _____

Captain's Name: _____

Contact Phone Number: _____

Contact Email: _____

Crew Members: (can have substitutes)

Race Division (Please indicate which race(s) this boat will be utilized by circling the race(s)):

Solo

Tandem

Team

Total Fee Due: _____

All crew members must wear a life jacket. If participant is under the age of 12, a guardian or responsible adult must be in the boat with the minor.

Fee for each entry is \$25. The fee is not per crew member, but per race. For example, if you have a crew of eight for the Team race, the fee is \$25. If you are using the same boat, but will be entering that boat for both the team and the tandem race, the fee is \$50. Fees may be paid in cash or by check. Checks must be made payable to Wildcat Glades Friends Group. If you have any questions, please contact us at 417-708-7713 or email robin@wildcatglades.org. Or message us on Facebook. www.facebook.com/wildcatglades