

## HOW TO BUILD A MILK CARTON BOAT

### Create Your Design:

Study the rules and regulations. Remember, your boat must float entirely from milk cartons/jugs. Racing boats are usually lightweight - long and narrow - like a kayak.

Begin by sketching a design of your boat, noting the dimensions. Make a list of the ties needed to complete the vessel, as well as their weight. Frame, decor, and person(s) operating the boat should all be accounted for.

Calculate the number of milk cartons/jugs you will need. The weight of your vessel and crew must be fully supported by the buoyancy of the milk cartons/jugs.

SIZE	WEIGHT
1 one-gallon plastic jug	floats 8 lbs.
1 half-gallon paper or plastic carton	floats 4 lbs.
1 one-quart paper carton	floats 2 lbs.

Keep in mind larger boats will need more milk cartons/jugs to float.

Kayak paddles and oars are two ways to power your boat.

### Gather Your Supplies

Frames can be built of wood, plastic or aluminum. Above the water line you may decorate however you choose. Be creative! You may use glue, nails, tape or other construction materials. Be sure, however, that all parts are securely fastened.

**Milk cartons/jugs are the most important materials for your boat.** It's easy to collect enough cartons/jugs if you save throughout the year. If you haven't started a collection, ask your friends, family and neighbors to help you. You can also find milk cartons/jugs at coffee stands, restaurants, hospitals, cafeterias, etc. Simply ask for their empty containers.

**Alpenrose** will provide up to 50 free jugs or cartons to all participants - containers available for pickup through June 17th, while supplies last:

[Alpenrose.com](http://Alpenrose.com)

### Construct Your Boat:

Here is an example of how to build a milk carton boat. You may choose to build your boat differently, and that's okay. These general instructions will get you started.

Frames should be joined together with wood screws. Use wooden 2x4s for the main structure. Follow these instructions to make a basic frame and/or visit:

<https://www.instructables.com/id/Build-a-Milk-Jug-Raft/>

### SUPPLIES NEEDED FOR FRAME

(3) 2"x4"x8' boards

Wood screws

Screw driver (power is recommended)

Cut one board into 4 equal lengths.

Place two 8' boards parallel to each other, approximately 20" apart. Using the 4 short pieces, attach one board at either end with wood screws, keeping the 8' boards 20" apart. Attach one short board mid-length as the seat and the short final board 14-18" in front of seat board.

Finished frame will loosely resemble a rectangular ladder.

Keep **milk cartons** water-tight by hot gluing and stapling the mouths shut. Use hot glue to keep lids on **milk jugs**. Then hot glue the cartons/jugs together in bundles or wrap the cartons in duct tape. Use duct tape or hot glue to connect the cartons to the frame. Prevent cartons from breaking loose by using chicken wire or mesh on the bottom of the boat. **DO NOT enclose the cartons completely within the frame, as they must be visible. If not, it will result in a disqualification when inspected.**

You can make your boat as a single unit or pieces that can be put together at the park. Bring all of your supplies and allow adequate time for construction on race day.

### Do a Trial Run

Before Race Day, test your boat with a trial run. Look for flooding in milk cartons, breaks, cracks, stability in water, and how the boat handles in the water. Plan a trial run with enough time to fix anything before race day. **Trial runs may NOT be done at the casting pond on Race Day.**

### HELPFUL HINTS

#### PRE-REGISTER

Register online by June 19th, with your attached signed waiver, to guarantee your spot in the Milk Carton Boat Race! You will receive your participant boat-number and guaranteed entrance into the Race.

#### LIMITED REGISTRATION ON-SITE

Limited Registration will be available on-site, depending on open slots.

**Each participant must check in at the registration tent between 9:30 and 10:30am on race day. You will receive your printed participant number for your boat. At this time, an inspector will examine every boat to see that it meets the rules and regulations.**

