



CBYA 2022 CHAIRMAN'S CHARITY CHALLENGE -

CARDBOARD BOAT RACE RULES

Objective: Build a vessel out of cardboard capable of supporting at least one person to follow a **200-metre race course**.

This is **NOT** a model boat! This is an actual passenger carrying vessel!

ONLY 100% made out of cardboard.

No wood, metal, plastic of any kind! No foam or glass fibre. These items are all **strictly** prohibited.

Wax coated or pre-treated cardboard **NOT** allowed.

Only bare, brown, fibrous cardboard permitted.

Various tapes/adhesives allowed, but you cannot just wrap the entire craft in layers of duct tape.

Accessories for decorations allowed.

All members on their boat must wear personal flotation devices.

You can paint your boat with latex paint – not oil-based and must be appropriate for the sea

Items such as cardboard tubes (wrapping paper tubes) and string are allowed.

You can use oars or paddles for moving..... or build a sail! You can also use your own arms and hands as paddles!

There will be heats. Boats with the fastest times in the preliminary heats will advance to the semi-finals. The fastest semi-finalists will advance to the finals.

There will be awards for:

- Single boats (only operated by one person)
- Tandem boats (consisting of two people)

- Galleon Ship (large, group of people, minimum four people..... no maximum!)

Awards:

- **The fastest single boat.**
- **Fastest tandem boat.**
- **Quickest Galleon ship.**
- **Submarine Award** – most spectacular sinking.

The science of the yacht building:

1. 28 kilograms (60 pounds) of mass displaces about 1 cubic foot of water
2. Add the weight of all the crew.
3. Divide by 60.
4. This provides the number of cubic feet that a boat will displace or sink into the water.
5. That may not make much sense yet, but wait, there's more to it than that.

Take this example:

We have a four-man crew on a Galleon. Our total crew weight was 900 lbs. Divide that by 60 and we get 15 cubic feet of water displacement.

That means we could have a boat that is 5 foot long, 3 feet wide and 1 feet tall making a volume of 15 cubic feet ($5 \times 3 \times 1 = 15$) and still theoretically stay afloat. I say theoretically because the water level is to the top edge. That does not even take into account the boat will also have mass.

But make the sides of the boat too tall to accommodate the displacement, and we may not be able to reach the water with our oars.

We finally decided on the measurements. The rectangular hull of our boat was 8 foot long, 3 feet wide and 15 inches tall. It had another 2 feet of bow after that.

Plan ahead before you make your first cut!

You **MUST** name your boat!!

Boats with the fastest times in the preliminary heats will advance to the semi-finals. The fastest semi-finalists will advance to the finals.

Things to build a cardboard boat:

- Your ideas. Draw a picture. Make a model if you want. Name it.
- Cardboard (mattress boxes, refrigerator or stove boxes, large packing boxes, and smaller boxes, the thicker the better)

- Utility knife
- Paintbrush (old or cheap one for glue application)
- Caulking gun
- Measuring device and square
- Rope or bungee cords to hold things together while they dry
- Duct tape for the seams only

IMPORTANT NOTE: *You will be able to build your boat in advance if you wish, and assemble it on the beach the morning of the race. All boats and galleons can be templated and cut to fit and decorated prior to the event, with simply putting it all together the day of the event, beachside. The judges and inspectors need access one hour before the race to be able to watch the final assembly take place, to ensure all rules and regulations are followed.*

Help needed:

- Judges to decide the awards.
- Inspectors for scrutineering the boats to make sure that all contestants comply with the building rules.
- Water team – making sure that NO debris gets left in the sea.
- Assistants in the water – in the case of a sinking, priority to get the crew members to safety and then the water team can ensure the clean-up of the debris zone.
- Megaphone to inform the spectators of the races.
- Needed: a floating moored ball for the race to proceed from the shoreline, out 100 metres, around the mooring ball and back to the shore again.
- We will need a small raft/ kayak positioned by the mooring ball to ensure that the yachts get around the ball, and also be close by for emergency assistance if required.