

## **HANDS-ON Problem: WHATEVER FLOATS YOUR BOAT**

Tell the team: This is a hands-on problem. You have one minute to decide which 5 team members will participate in solving the problem.

JUDGE READS (after team selects 5 participants): This is a two-part problem. In Part 1, you will have 5 minutes to build solutions and practice with the materials. In Part 2, you will have 4 minutes to accumulate score. Any materials damaged during Part 1 will NOT be replaced for Part 2.

Your problem is to build two items. One item will be a structure used to float objects on top of the water. This will be known as the boat. The second item will be used to lower objects down onto the floating structure. This will be known as the crane. You may use any and all the materials provided to build either item. When part 2 begins, each of you will choose a foul area in which to sit or stand. Once time begins you may not touch the floor outside of your foul area.

To receive score, your boat must float in the water provided. Then, the items used for weights will be lowered down on to the boat using the crane that you built. The weights must remain on the boat for 5 seconds to receive score for that item. Once an item is placed on the boat, it must remain on the boat to receive score. If an item falls out of the boat, you may still continue, but only items that are on the floating boat will be counted for score. You may stop at any time before time has expired. You may not touch the weights once the item passes over the foul line.

Score will be as follows:

The structure floats: 50 points

Creativity of boat: 1-50 points

Creativity of crane: 1-50 points

Teamwork during Part I: 1-20 points

Total weight score: Total of all items held for 5 seconds after time is called.

### **REREAD THE PROBLEM**

Give teams the following materials to build with: (Vary as needed)

10 pencils, 2 sheets of paper, 4 paper cups, 2 water bottles,

6 mailing labels, 3 small pieces of cardboard,

24" piece of string, 16" piece of masking tape,

10 soda straws, 15 toothpicks, 5 marshmallows

1 yard stick, 1 broom, 1 spatula, 4 safety pins

36" long wooden dowel rod, 2 coat hangers

The Foul Line may be altered according to the space you are using. Foul Areas should be 3 feet away from the water. You may use a tub, sink, pool, or a large plastic storage bin to hold the water. Vary the items used for the weights. The following are some suggestions for weights. Assign the points as you see fit.

A fork, Soup can, Empty soda can, Marshmallows, A plastic cup  
Marbles, Plastic credit cards, Empty coffee can  
Plastic 1 liter soda bottle (full), Paper clips, dice, coins

(The crane may be altered during the weight placement as needed by using any materials not used for the boat, but do not tell them this unless asked. They may also build more than one crane if they choose.)

Thought of the day: An optimist may say the cup is half full. A pessimist may say the cup is half-empty. A well-trained Odyssey of the Mind response might be that we are just using the wrong size cup.