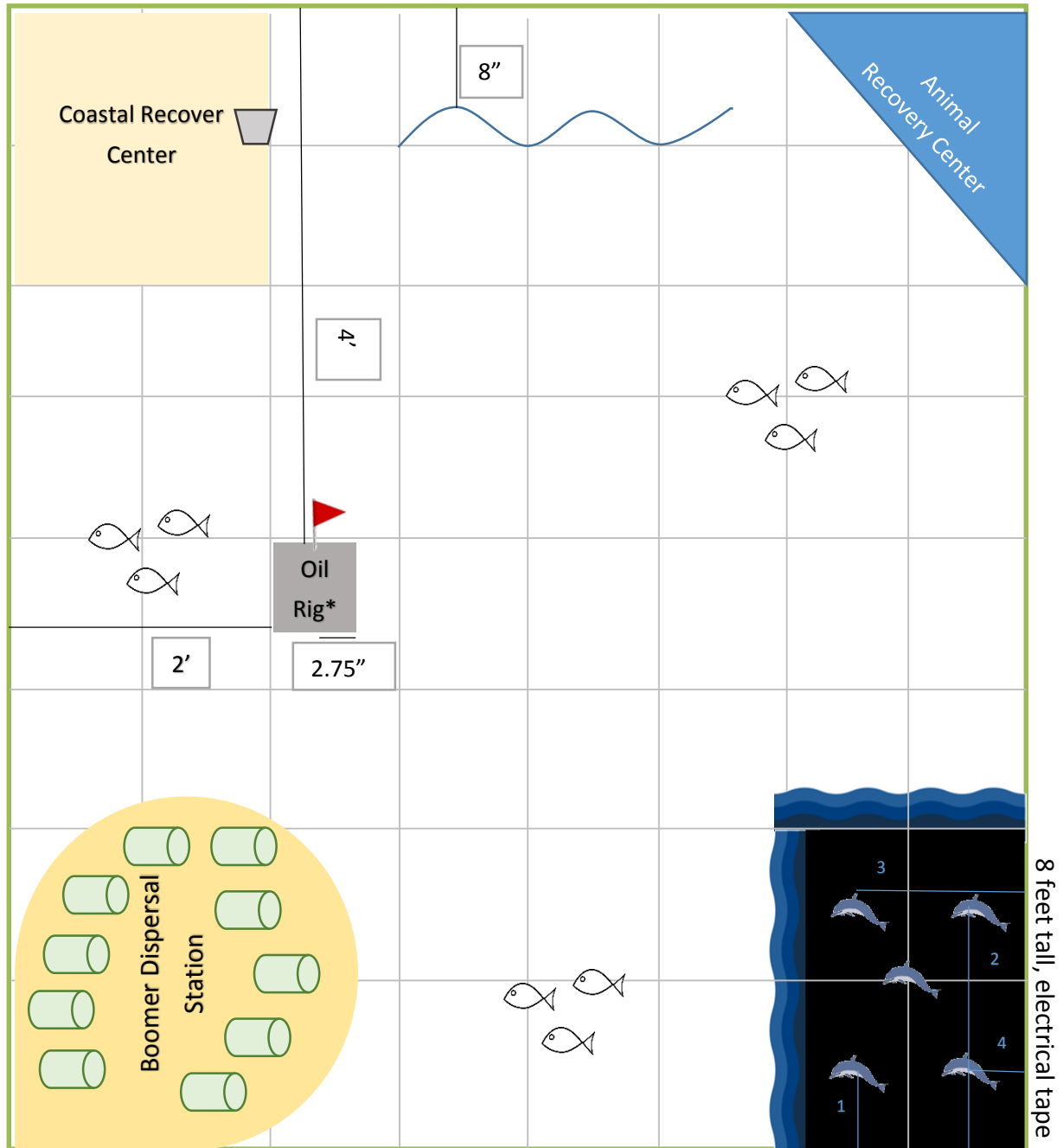


Where Did That Come From?

Finding the Pieces and Part for Your Contest Mat

Ocean Rescue Senior Robotics Challenge



8 feet wide, electrical tape

(1) 7" (3) 16.5"
(2) 21" (4) 5.50"



Some objects have been not been defined with lines on the map. That is because the map is on a grid with squares that are 1' x 1'. Therefore they have been measured by the grid. Also, the boomers and fish will not have a specific location, but are within the general area described on the map. This unknown specifics is a part of the contest and will require YOU to figure out what to do and develop a strategy to accomplish the task.

Ocean Rescue (Seniors) Rubric:

*In order to raise the flag, teams must achieve the following first:

- move 2 dolphins from the oil spill to the Animal Recovery Center
- deploy at least 3 boomer to impacted oil spill area
- establish the oyster reef

Once these three goals are met the team can then attempt to raise the flag.

Challenge	Points Possible	Points Achieved
(#1) Move the dolphins from the oil spill to the recovery center	(5 dolphins at 3 points each) 	_____/15
(#2) Place boomers around oil spill	(10 Boomers at 3 points each) 	_____/30
(#3) Restore oyster reef	(25 points if the line is filled)	_____/25
(#4) Raise the flag	(30 points)	_____/30
(#5) Hit the oil rig	(-5 points)	_____
(#6) Hitting the Fish	(-2 points per touch)	_____
Total		_____

Materials:

(1) Black Poster Board 28" x 22"
 (5) Dolphin and whale water toys
 (6-9) Robo-Fish
 45" of pipe insulation for boomers
 Small pail for rocks
 Pail of medium-sized rocks
 Electrical tape
 Tape measure and/or ruler

For the Oil Rig:

Duct tape
 (3) Large paperclips
 (28) Popsicle sticks (I would buy extra in case you break some)

(2) Tongue depressors (jumbo craft sticks)
(1) Wooden dowel rod for flag (you can probably substitute a straw)
Wood glue
One rubber band
Hot glue gun with glue

The oil rig at competition will have a simple circuit attached to the tower on the oil rig to light up an LED. This is cosmetic and will have no effect on the operation of the flag. If you wish to copy the design, you will need:

(1) 4-cell AA battery pack (cut ends)
(1) Container of play-doh
(1) Container of modeling clay
(1-3) LEDs

Directions on how to build the oil rig:

1. Assemble components above and plug in hot glue gun.
2. Lay two popsicle sticks parallel and 3.75" apart.
3. Lay two popsicle sticks across the first two, also 3.75" apart
4. Glue joints with wood glue.
5. After glue has been given a few minutes to dry, glue a diagonal piece as shown. The orientation does not matter, so long as the popsicle stick is diagonal.
6. Repeat steps 2-5 three more times till you have 4 trusses like Fig 1.
7. Set trusses aside and let them rest for several hours to let the glue set. This will make them significantly stronger
8. Take tongue depressors and drill holes in them. In one, make the hole half an inch from the end. The other, make a hole 1.75" from the end.
9. Take a paperclip and bend it to the shape shown in Fig 2.

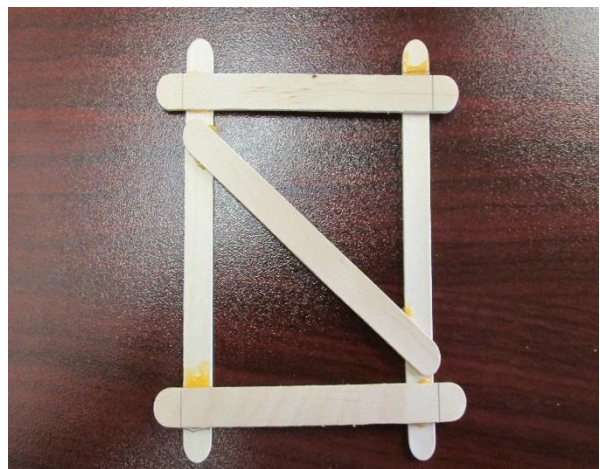


Fig 1

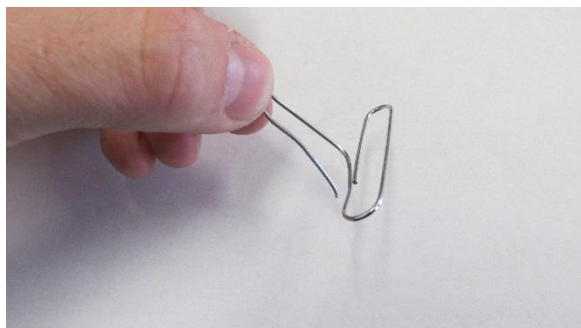


Fig 2

10. Thread the bent paperclip through the popsicle sticks to tie them together like shown in Fig 3.
11. Add a piece to the back of the paperclip to help it remain in place (the backside is shown in Fig 3)
12. Fold a piece of duct tape over one end of the dowel rod then use duct tape to attach the dowel rod to the short end shown in Fig. 3. Your flag should look like Fig 4.
13. Cut slits in your meat tray for the trusses and the flag. You will make 8 cuts for the truss ends and one for the flag. These measurements will depend on the meat tray you get. Fig 5 is a picture of mine. So long as your flag placement correlates with the position in the mat, the measurements are negligible. You can see where my truss popsicle sticks are and you can see the large cut for the flag on the opposite side. Also, how far you insert the flag is relative the meat tray you get.
14. Insert truss into holes and the have everything held together with a rubber band. Now you are ready to go!

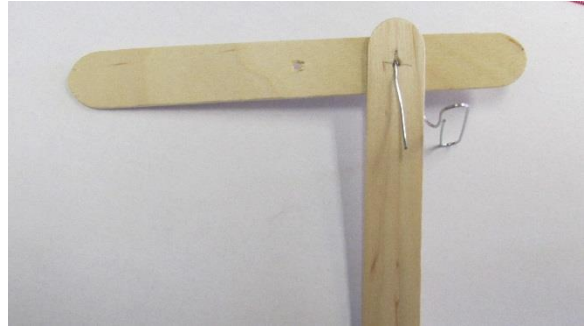


Fig 3

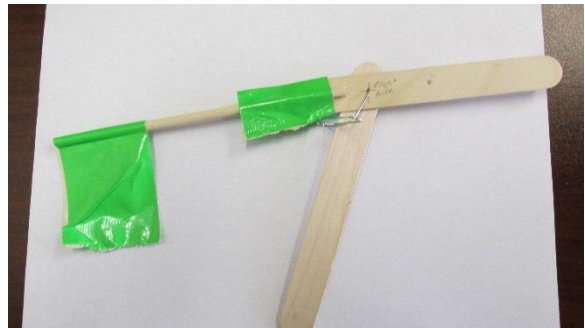


Fig 4



Fig 5

You will notice in our model that we also have a tower with the LED fixture. As stated, this is cosmetic. You can substitute a paperweight in its place, unless you would like to make your own tower too.



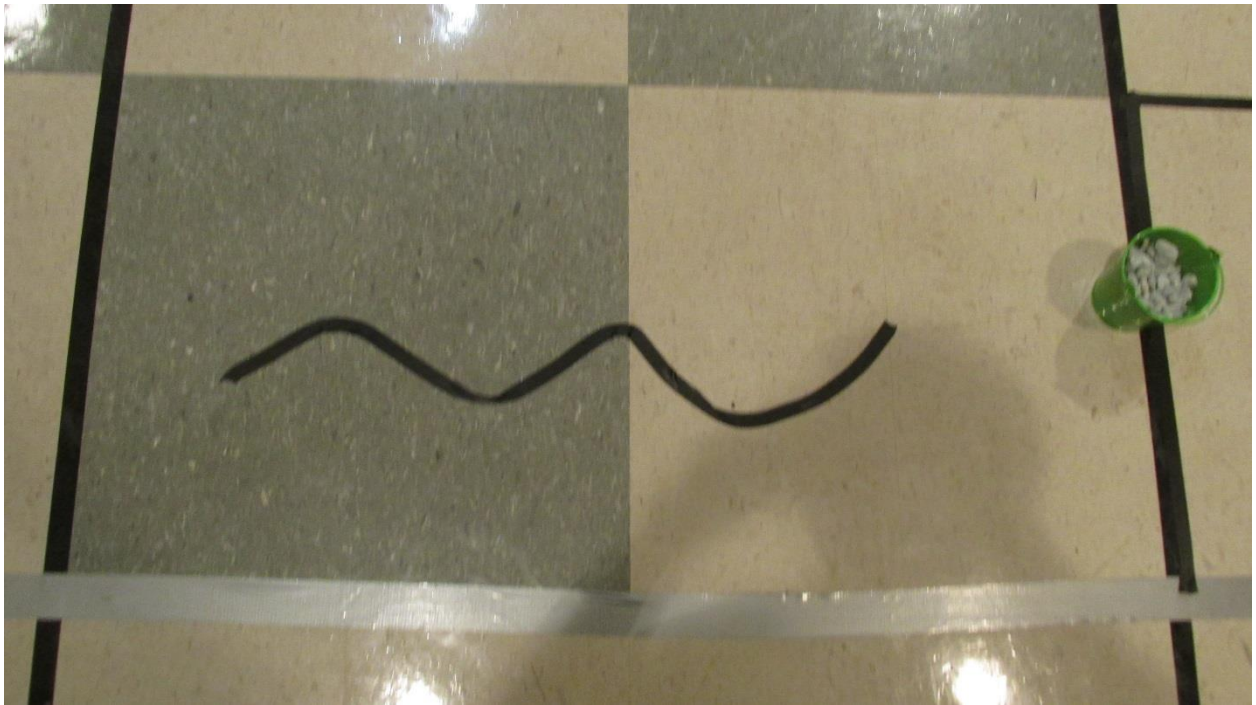
Finished oil rig



Top view of rig



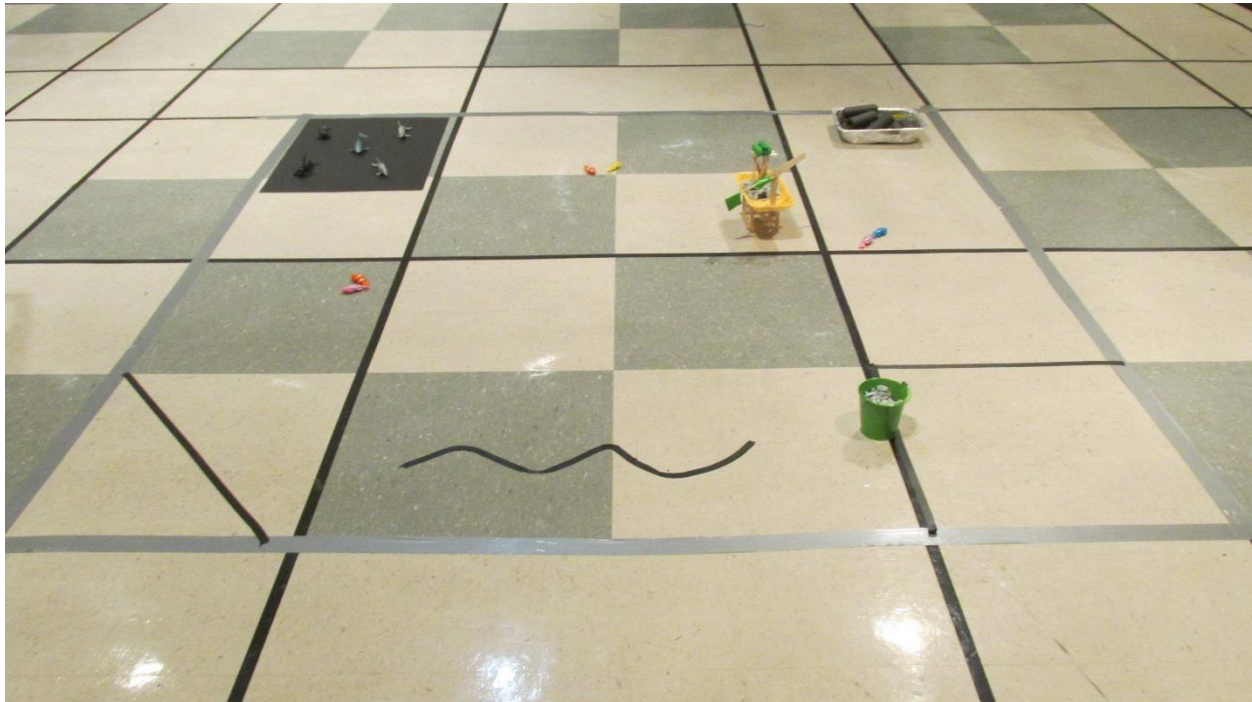
Oil rig in position



Gravel Line and gravel bucket



Dolphins in position on poster board



Ocean Rescue Senior Robotics Challenge Contest Mat