**Build Instructions:**

1. Cut plywood sheet into the following dimensions:
* (1) 6’x4’
* (2) 12” x 14” , (4) 4” x 14” , (2) 4” x 11.5”
* (2) 5” x 8” , (1) 10” x 8”
* (2) boards of this shape:

10”

5”

5”

45°

45°

≈17.07”

1. Bevel the edges of the (1) 10” x 8” and the (2) 5” x 8” boards to 45 degree angles in shown orientations:

10”

.25”

5”

.25”

1. The pieces for the ramp put together in this configuration:

10”

5”

5”

45°

45°

5”

5”

First, cut and sand down the vertical portion of the trapezoidal pieces so that they fit flush with the 5” peices:

 Use the wood glue to fix the pieces in place

10”

<5”

5”

45°

45°

5”

<5”

1. The rectangular non-beveled pieces will be used to make the raised platforms in the end zone. (2) 4” x 14”,(1) 4” x 11.5”, and (1) 12” x 14” will be used for each one

The walls will be arranged like so:

14”

11.5”

14”

14”

11.5”

14”

glue them together in this configuration and then glue the 12”x14” pieces to the top, the sides of the 14”x12” should sit flush with the external surfaces of the walls.

1. The outside of the ramp will be painted white, the outside of the platforms will be painted one yellow and one Sail Blue.
2. The main body of the course is painted according to the attached color map. Each color section is taped off and painted in turn. Special attention is paid to the white portions, multiple heavy coats to ensure good sensor reception. A foam brush is used to clean up edges.

Main area-Hunter Green

River-Sapphire Blue

Start area, Stepping Stones and lines- White

1 end zone area, 1 block area - Sail Blue

1 end zone area, 1 block area - Sunburst Yellow

1. The platforms are glued in their spots on the course. They placed flush against each other and oriented with their open ends facing the other. The external surface forms a 28”x12”x4.25” box
2. The ramp is glued in place. The bridge is slightly wider than the 16” River, but is centered on the midway line and the axis of symmetry.
3. The blocks are painted 2 Sail Blue, 2 Yellow and stored for later use.
4. The outlines of the blocks’ starting positions are marked in Sharpie
5. The second piece of plywood is cut to 6x4 and glued to the underside of the first, this provides greater stability during transport, not necessary for the course itself.
6. Additional boards are cut and bevelled to add to the profile of the bridge (shown in diagram), while maintaining the 8” width. Boards are placed within the formed shapes as walls in the same way the bridge was constructed. Given values are only approximations, overestimating as a rule so that the remainder can be carefully cut away and sanded for a good fit.

10”

<5”

45°

45°

5”

<5”

5”

Side A of the river

10”

~13.5”

10”

<5”

5”

45°

45°

5”

<5”

Raised platforms

Endzone

~19”

~16”

Side B of the river

1. To aid in judging, lines were drawn vertically up the sides of the bridge where they cross lines A and B

Bridge

A

B

river

raised

raised

river

Start

river

river

stone

stone

stone

stone

flat

flat

28”

 10”

 14”

 10”

 14”

5”

 10”

 8”

8”

 10”

 8”

Axis of symmetry

4”

8”

12”

8”

12”

28”

16”

Midway line

 36”

36”

 24”

 24”

10”

Close up of the stepping stones

4”

4”

1”

1.5”

1.5”

Top Left Block starting area:

1.5”

10”

1.5”

5”

1.5”

1.5”

block

block

1.75”

1.75”

1.75”

1.75”