Date: 8-10-16

Wednesday Challenge Form

Group Members: Michael, Arren, Max, Edgar

Problem Statement:

Design a bridge made of spaghetti and wood glue. Goal is to make the highest efficiency bridge. Efficiency is defined as the ratio of the supported bridge weight to the mass of the bridge. The supported weight will be provided by water. The span distance will be 24". Each group will be provided 100 pieces of spaghetti, however only 20 can be used in the final design. In addition, the bridge must accommodate the weight attachment hardware provided by me. Refer to the JPL Invention Challenge Bridge Challenge for reference. Duration was 2.5 weeks.

Approach:

We first started by brainstorming ideas. We did this by exchanging ideas for bridges and then drawing them on the board since we were in the room with the computers in the old garage. We first thought of a bridge that basically looked just like the Golden Gate Bridge. This is what we had in mind:

But, we didn't actually follow through with it by trying to build it with 20 spaghettis.

We also thought of another design that looked like this:

but didn't follow through with it either.

Then, we decided to build a log and used a lot of glue to hold it up. It kind of looked like this:

We had another design that we were working on that required us to put glue on our hands and then mix it up. This is what it looked like but we didn't have time for it to dry. This is what it looked like:

Solution:

We ended up using a simple log bridge design in our final bridge to be tested. It held 43 grams of weight and the score was 1.075. It ended up bending and touching the ground due to all the glue we used, therefore disqualifying the bridge from the competition.

Lessons Learned:

If I were to do this again I would not use so much glue on the bridge because the glue the bridge bend. It wouldn't get a high score because the ground would be touched due to the bend and the bridge would be disqualified.