

Group Members: _____

POPSICLE STICK BRIDGE CHALLENGE 2015!

Challenge:

- 1) You and a partner will design and construct a bridge made of popsicle sticks (250 maximum) and wood glue (and some string if you want to make a cable stayed/suspension bridge). No other materials can be used.
- 2) Your bridge must span a gap of 60 cm (two rulers long)
- 3) The load will be applied to the deck of the bridge by rope/strap and weights hanging below. An opening of about an inch should be left open near the middle of your bridge for the rope to fit through.
- 4) Your group should use structural elements that you learned about in class (bridge types, structure types, etc.)
- 5) Your group will also be challenged to write a one page description of your bridge. You will find some helpful questions in this booklet to help you create ideas to write about.

We will test our bridges as a class on Thursday, February 12th

Step 1

Get together with your group, and create a design for your bridge. You should use your notes/readings from class, and design a diagram for your plan.

About how many popsicle sticks will you need?

What types of structural strategies will you use?

Which type of bridge are you going to build?

Who will be taking on the different parts of the build?

Step 2

When finished, show your design to the teacher for feedback and tips.

When approved, get started!

***You will have 3-4 60 minute periods to work on your bridge.

Step 3

Along the way, stop as a group and discuss your plan/build.

Do any changes need to be made?

Can people help out in different ways?

Step 4

- You will have 2-3 computer lab periods to work together as a group on your written reflection for the project
- The written reflection will be due a few days after we test the bridges, so you have time to add your final thoughts.

Questions for Written Reflection

***1-3 descriptive sentences for each question

1. Did your group succeed in creating a bridge that held the required weight for a full minute? If not, why did it fail?
2. What types of design elements helped make your bridge structurally strong?
3. Did you decide to revise your original design plan while in the construction phase? Why?
4. How many popsicle sticks did you end up using? Did this number differ from your plan? Why?
5. Do you think that engineers have to adapt their original plans during the construction of structures or other products? Why?
6. If you had to do it all over again, how would your planned design change? Why?
7. What designs or methods did you see other teams try that you thought worked well? Why?
8. Do you think you would have been able to complete this project more easily if you were working alone? Why?
9. What sort of trade-offs do you think engineers/designers make between functionality, safety and aesthetics when building a real bridge?

****Your group will need to hand in their design with their written reflection.

****Take a good look at the rubric as a group! What do you need to do well to get a level 3 or 4???****