Golf Ball Bridge

**Your Task:** *Use class time to plan your bridge with your partners. Discuss any potential flaws and make a plan to solve problems on the fly.*

**Materials:**

* 20 plastic straws
* 15 small paper clips
* 60 cm masking tape
* 1 golf ball
* 1 pair of scissors
* 1 meter stick

**Procedure:**

1. Use 1 class (47 minutes) to build your free standing structure, ensuring you meet ALL design specification found below.
2. Test your bridge and evaluate your design.

**Specification Checklist:**

* Spans 30 cm distance
* Free standing (cannot attach to desks)
* Track must be 5cm above the desk
* Track must support a golf ball as it rolls from 1 side to another
* One end of the bridge must be higher than the other
* You used ONLY the materials provided
* Construction must be done in 35 minutes or less
* 3/5 trials must be successful
  + 1
  + 2
  + 3
  + 4
  + 5
* Golf ball must roll without being pushed
* The bridge cannot fall over during the test

Total \_\_\_\_\_\_\_/10

Bonus \_\_\_\_\_\_/+2

**Evaluation:**

1. Is it reasonable to expect a bridge to carry a golf ball 30cm with only 35 minutes of build time? Explain why or why not. (2 marks)
2. Which design specifications did you find the most difficult to meet? Explain (3 marks)
3. Describe 2 changes you would make if given the chance to re-construct the bridge. Give a reason for each change. (4 marks)

**Extend your Thinking**: If your bridge prototype was actually being built across a deep river gorge and the track had to support a heavy train, what additional criteria would you have to consider? List as many considerations as you can **and** explain why they would be important to the design and construction process. (6 marks)

Total: \_\_\_\_/25