**Buffon’s Analysis**

Buffon's Needle is one of the oldest problems in the field of geometrical probability. It was first stated in 1777 and involves dropping a needle on a lined sheet of paper to determine the probability of the needle crossing one of the lines on the page. As Buffon began dropping more and more needles, he realized that a probability pattern was arising.

We are going to replicate his experiment with toothpicks instead of needles. You will follow the instructions below to complete the experiment. Afterwards, you will make a presentation of your findings, the rubric will be below for you to follow.

**Instructions**

1. **Set up**
   1. Things to pick up from the front of the class:
      1. One piece of paper
      2. 10 toothpicks for each person in your group
   2. Measure the length of a toothpick.
   3. Draw straight parallel lines extending the length of the paper.
      1. The distance between the lines must be the same as the length of your toothpick.
   4. Make a copy of the [Google Spreadsheet](https://docs.google.com/spreadsheets/d/1lr1O2zr7ujXikG6ItsZW4FE45K3W9Uv_PQFkqRxGcbs/edit?usp=sharing) to record your results. DO NOT CHANGE ANY FORMULAS.
2. **Commence Tossing**
   1. Drop no more than 3 toothpicks at a time from knee height.
   2. Once all ten toothpicks have been dropped, count the number of toothpicks that are intersecting a line. Record the number on the Google Spreadsheet.
   3. Gather your toothpicks and the next person begins dropping.
   4. Your group needs to have at least 40 records on your spreadsheet.
      1. If you have time and want to record more, be my guest (It will make the data more accurate if you do).

\*\*\*\*\*\* Send the Google Spreadsheet to me and I will combine all the data. \*\*\*\*\*\*\*\*\*