Skyscraper Hands-on Activity

Task:
Using only the materials provided, teams of students will design and build a structure as tall as possible using the materials supplied (same materials for each group). The activity can be framed as a competition (for tallest structure, as measured vertically from the tabletop) if appropriate.

1. Divide students into groups of 3 or 4.
2. Explain the rules:
   >Build as tall a structure as you can in time allotted (15 minutes is good, but could be any amount) with marshmallow on top
   >Use only the materials provided
   >The materials can be subdivided (the marshmallow on top can be a piece of the original marshmallow)
3. Call time and measure the structures
4. Relate this activity of the challenge of having to build up during a period of urbanization such as the industrial revolution
   >Have the students consider how they were constrained by both the types of raw materials and the amounts of raw materials available.
   >Have the students consider how they were constrained by time
   >Was there more than one possible solution, given the same materials? Were some better than others? Why? What were some possible trade-offs in choosing a solution?

Instructions:

Materials Needed:
Table or desk top for each group
25 sticks of spaghetti per group
1 large marshmallow per group
1 yard of masking tape per group

Note: When engaging in the hands-on activities contemplated in these lesson plans, please proceed with caution and use all reasonable safety precautions. Please be advised that IEEE shall not be responsible for any injuries or damage related to the use of these lesson plans or any activities described herein.