Lesson 1

El Pueblo: The Watts Towers
By Sam Simon
Project Description

A Community of Towers

Project Description:

As an inquiry into the properties of different solid matter you and your team will work together to create a tower out of “trash.” After your tower is built, you and your team will present your work along with the commentary about what you learned as a team member, an artist, a scientist, and an engineer. As a culminating activity, all the towers will be arranged together to create a “pueblo” or “town” that represents your community.

You will need to work together collaboratively to

• Create a design of your tower
• Consider the structural integrity of your tower (how strong and stable it is)
• Consider the aesthetic impact (how it looks and how people respond to it)
• Plan the construction of your tower
• Build and test your tower to ensure that it can withstand an earthquake test
• Create and give a presentation about your work and learning process
• Reflect on your understanding of solid materials throughout this process

You will be evaluated on

❖ How you collaborate with your team
❖ The detail and completeness of your design
❖ Your project plan
❖ Your explanation of how and why you included certain elements in your design
❖ Your interactive notebook responses
❖ Your final presentation
## Project Description

### Construction Criteria and Constraints

<table>
<thead>
<tr>
<th>Structure</th>
<th>Materials</th>
<th>Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reach a minimum height of 3 Feet *Must fit a 1ft by 1ft platform *Must be able to be transported across the room Can have little or no visible evidence of stress after an earthquake test (torsion, shear, compression, bulge) Must be the structure depicted in written/drawn plan</td>
<td>Incorporates a variety of materials *Materials are chosen based on their properties Must be made of T4T materials or found materials</td>
<td>Uses at least 2 connection types *Cannot use tape or glue</td>
</tr>
</tbody>
</table>

### Design Criteria and Constraints

<table>
<thead>
<tr>
<th>Plan</th>
<th>Drawing</th>
<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Must have an idea or feeling to be expressed Must create a design that expresses the focus idea or message Includes ideas or elements from all team members Considers the aesthetics and color of material type Considers how materials function and interact</td>
<td>Must include all the component parts Must depict and label materials used Must depict how pieces will be connected Shows more than one perspective Has close ups of details Must include a rational for decisions</td>
<td>Every change is depicted in the plan Changes are documented in different colors If necessary revisions are documented on new paper or overlaid with post-it/taped papers *Cannot erase</td>
</tr>
</tbody>
</table>
How and why would understanding your materials help you build a better tower?