Deformation: Foam Compression Worksheet

Pre-Activity Define stress and strain.
Stress is:

Strain is:

Hypothesis
What type of object, hard or soft, requires the most compression? Why?

List Materials

Write the Procedure
1.

2.

3.
Data Collection

Equation 1: \[ \text{Strain} = \frac{\text{L}_{\text{change}}}{\text{L}} \]

<table>
<thead>
<tr>
<th>Object (hard or soft)</th>
<th>Number of motor rotation for compression (power)</th>
<th>L (cm)</th>
<th>L_{\text{change}} (cm)</th>
<th>Strain</th>
<th>Does the object go back to its original shape?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play-Doh</td>
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</tr>
<tr>
<td>bread</td>
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<tr>
<td>marshmallow</td>
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<tr>
<td>foam</td>
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Graphing

Create a graph of the number of rotations (x-axis) vs. the strain (y-axis) for the objects listed in the above table.
Results & Conclusions
1. Which object had the greatest strain/deformation?

2. Which object had the most rotations?