Build a Boat
Hope it Floats

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Guidelines and Regulations
Guidelines

Build a boat capable of floating as many pennies as possible.

Provided a list of materials and their "prices".

Build your boat to meet the time and size regulations . . .
Regulations

The Build a Boat Hope it Floats Boat Float-Off begins 15 minutes from the time I say "Build Your Boat".

Boats cannot be larger than 4 x 6 x 10 centimeters.

Calculate the total cost of your boat.
How to Win

The winner of the Boat Float-off is the group earning the lowest score based on the following equation:

\[
\text{Score} = \frac{\text{Total Cost}}{\text{# of pennies floated}}
\]
## Material Price List
(Boat dimensions cannot exceed 4 cm x 6 cm x 10 cm)

<table>
<thead>
<tr>
<th>Material</th>
<th>Price Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>$0.10 for each cm²</td>
</tr>
<tr>
<td>Aluminum Foil</td>
<td>$0.20 for each cm²</td>
</tr>
<tr>
<td>Clear Plastic</td>
<td>$0.30 for each cm²</td>
</tr>
<tr>
<td>Cardboard</td>
<td>$0.50 for each cm²</td>
</tr>
<tr>
<td>Paper Clips</td>
<td>$0.25 each</td>
</tr>
<tr>
<td>Rubber Bands</td>
<td>$0.50 each</td>
</tr>
<tr>
<td>Plastic Straws</td>
<td>$0.10 for each 1 cm length</td>
</tr>
<tr>
<td>Clear Tape</td>
<td>$0.15 for each 1 cm length</td>
</tr>
<tr>
<td>Duct Tape</td>
<td>$0.75 for each 1 cm length</td>
</tr>
</tbody>
</table>
Presenting Your Results

Your whiteboard must include the following:

- A complete list of materials and the individual costs as well as your total cost.
- Your calculated score = \( \frac{\text{total cost}}{\# \text{ of pennies}} \)
- A list of things you discussed when designing the boat.
- A list of any obstacles that kept you from building a better boat.
- What were your boat's best/worst features?
Take Away

How many of you built the best boat possible?

How many of you could build a better boat now that you’ve tested yours and seen others tested?
Why did we do this?

In a modeling classroom, students will learn from each other.

We construct models, test them, then improve upon them - just like we have done in this activity.