4-17-2013

Research exercise: Infant Cause and Effect Toy for Bombeck Family Learning Center

Daniel J. Buck  
*University of Dayton, stander@udayton.edu*

Joel F. Visser  
*University of Dayton, stander@udayton.edu*

Paige N. Yaeger  
*University of Dayton, stander@udayton.edu*

Follow this and additional works at: [http://ecommons.udayton.edu/stander_posters](http://ecommons.udayton.edu/stander_posters)

Recommended Citation

[http://ecommons.udayton.edu/stander_posters/227](http://ecommons.udayton.edu/stander_posters/227)
Infant Cause and Effect Toy for Bombeck Family Learning Center  
Dan Buck, Joel Visser, Paige Yaeger  
Advisor: Beth Hart  

Project Objective: To create a fully functional toy safely demonstrating principles cause and effect to infants 3 to 16 months old  

Design Requirements:  
- Fulfill objective  
- Be within $50 budget  
- Be constructed with child safe materials  
- Easily built within allotted time  

Designs:  
1. Interlocking Mesh  
2. Resonating Tubes  
3. Boxes  
4. Track  

Design Selection Matrix:  

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
<th>Boxes</th>
<th>Interlocking Mesh</th>
<th>Track</th>
<th>Resonating Tubes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rank</td>
<td>Value</td>
<td>Rank</td>
<td>Value</td>
</tr>
<tr>
<td>1 Safety</td>
<td>10</td>
<td>9</td>
<td>90</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>2 Simplicity</td>
<td>9</td>
<td>9</td>
<td>81</td>
<td>9</td>
<td>81</td>
</tr>
<tr>
<td>3 Cause/Effect</td>
<td>10</td>
<td>10</td>
<td>100</td>
<td>8</td>
<td>80</td>
</tr>
<tr>
<td>4 Cost</td>
<td>8</td>
<td>7</td>
<td>56</td>
<td>7</td>
<td>56</td>
</tr>
<tr>
<td>5 Feasibility</td>
<td>3</td>
<td>7</td>
<td>21</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>6 Size</td>
<td>4</td>
<td>10</td>
<td>40</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>7 Aesthetics</td>
<td>6</td>
<td>8</td>
<td>48</td>
<td>9</td>
<td>54</td>
</tr>
<tr>
<td>8 Durability</td>
<td>7</td>
<td>9</td>
<td>63</td>
<td>10</td>
<td>70</td>
</tr>
<tr>
<td>10 Washable</td>
<td>8</td>
<td>8</td>
<td>64</td>
<td>10</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>563</td>
<td>579</td>
<td>575</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>532</td>
</tr>
</tbody>
</table>

Final Design:  
- 6”x7”x1.5”  
- 8 metal chimes  
- 20 washers  
- Clear, safe plastic with guards on edges  

Conclusion:  
- Results were inconclusive due to inconsistent testing parameters.  
- Building techniques need improvements.