"The Big Haul"

Purple Team A

Sarah Cole
Brian Demers
Brittany Guyer
Robert Hummel
Zack Jackowski
Jarrell Johnson
Dan Klenk
Jason Ku
“The Big Haul”
The Potential Market

- Product caters to a different market than Power Wheels
- Expected price less than the Power Wheels’ Monster Traction
- Product combines exercise with fun and play
## The Product Contract

<table>
<thead>
<tr>
<th>Customer Need</th>
<th>Product Attribute(s)</th>
<th>Engineering Specification(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can be pedaled uphill on grass</td>
<td>Drive train/weight</td>
<td>Gear ratio to match operating weight</td>
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<tr>
<td>Can be easily steered</td>
<td>Steering system</td>
<td>Presents a torque that can be turned by a child</td>
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<tr>
<td>Visually appealing</td>
<td>Aesthetics</td>
<td>Looks match user preferences</td>
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<tr>
<td>Fits wide range of user sizes</td>
<td>Ergonomic flexibility</td>
<td>Adjustable seat</td>
</tr>
<tr>
<td>Can be stopped</td>
<td>Braking system</td>
<td>Ability to stop vehicle in motion and prevent unwanted motion</td>
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<tr>
<td>Can store and unload materials</td>
<td>Dump truck bed</td>
<td>Pneumatic powered bed</td>
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<tr>
<td>Vehicle wont tip</td>
<td>Stability</td>
<td>Low center of gravity</td>
</tr>
<tr>
<td>User will not hurt themselves</td>
<td>Pinch points</td>
<td>Enclosed drive train/dumping mechanism does not present pinch points</td>
</tr>
</tbody>
</table>
Risks Associated with the Product

- Exposed Chains
- Improper Use
- Supervision Required
- Aesthetics (likeness)
- Safety (doors, pinch points, etc.)
- Ergonomics
- Controllability
- Maintenance

- Power Required
- Sticks Getting Caught in the Drive Train
- Goes Uphill
- Drives in Grass
- Costs
- Power Takeoff for Dumping
- Accessories Possibility
The MockUp

Technical Risks

Design Risks
"The Big Haul" Testing I

- Develop a model that...
  - is suitable for *most children*
  - is easy to operate (steering, drive, etc.)
  - easily operates on child’s power
Results of Technical Testing

- Some things were effective
  - Ease of Steering

- Some things still need to be adjusted
  - The Seat
  - The Gear Ratio
  - Steering Limiter
"The Big Haul" Testing II

Design Tests:

• Avoid pinch points
• Minimize excessive horizontal surfaces
Results of Design Testing

• Girls attracted to different structure than Boys
• Difference in age groups is negligible in results

Product design combines likeness of top two choices
Conclusions

- Feasible and challenging product
  - Suitable for a 2.009 project

Kids Love It!
....even the delivery guy wants one!