

Assignment #3

Pull Toy Challenge

Design Brief

Pull Toy Design Brief Template

Client

John B.

Target Consumer

children

Ages:

2-8

Designer(s)

Problem Statement

Identify the design problem or opportunity and create a brief statement to summarize it.

Kids are sitting around without enjoying physical models, like pull toys.

Design Statement

Create a statement that briefly describes the optimal design idea that can address the problem or opportunity.

Design, model and test a childrens pull toy that will be sturdy, entertaining and practical.

Criteria and Constraints

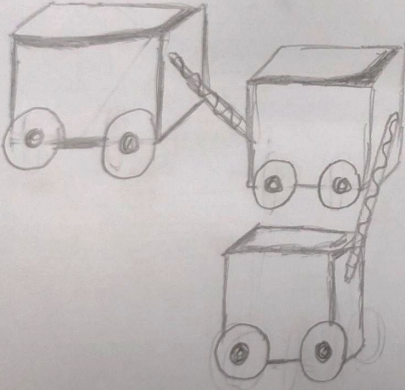
Identify and list criteria and constraints for the design problem or opportunity.

Time: 25
Due: March 25
Deliverables: NO budget / NO flammable materials / NOT too heavy or big for a kid to carry

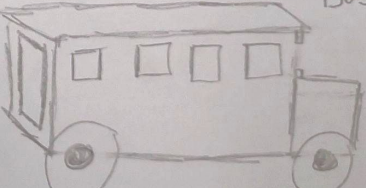
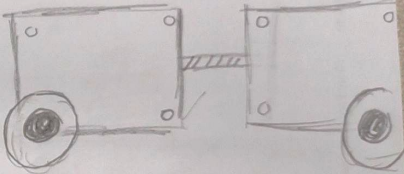
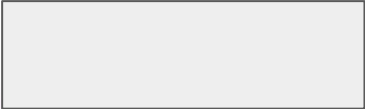
Use your Gateway Notebook to include a detailed description of the Design Process. Summarize your work during each step of the process. Include documentation (written work, sketches, CAD drawings, images) to support your design.

Brainstorming Sketches

Made of vex parts



2



BUS

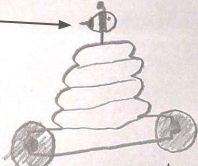
Wheels



Wheels

Honey Pot

Bees



Wheels

Beehive

Inspirational Quote (theme for the toy)

Sometimes the smallest things take up the most room in your heart. - Winnie the Pooh

Parade. "Happy Winnie the Pooh Day! 50 Best 'Pooh' Quotes Guaranteed to Brighten Your Day." Parade, Parade: Entertainment, Recipes, Health, Life, Holidays, 6 May 2021, <https://parade.com/935628/parade/winnie-the-pooh-quotes/>.

Decision Matrix

Decision Matrix Template - Pull Toy

	Criteria	Built entirely from vex parts	Has gear mechanism to power wheels	Illustration on output	Four small wheels	Capable of being pulled across flat surface	Total
Pot		✓	✓	✓	✓	✓	5
Beehive		X	✓	✓	✓	✓	4
Train		✓	✓	✓	X	X	3
Bus		✓	✓	✓	✓	✓	5

Scale from 1 (Worst) - 4 (Best)

We chose the honey pot because it met all the requirements and related more to Winnie The Pooh than the bus.

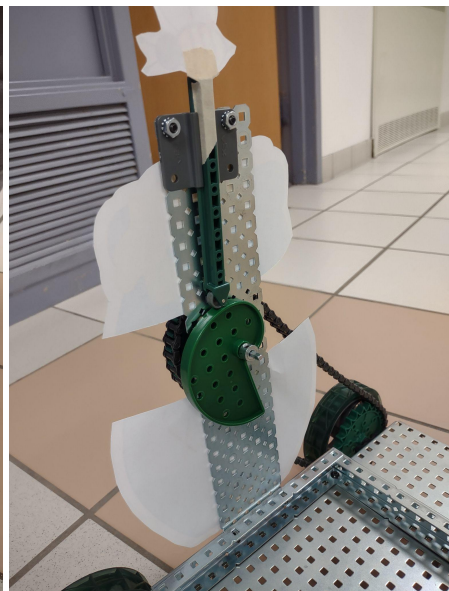
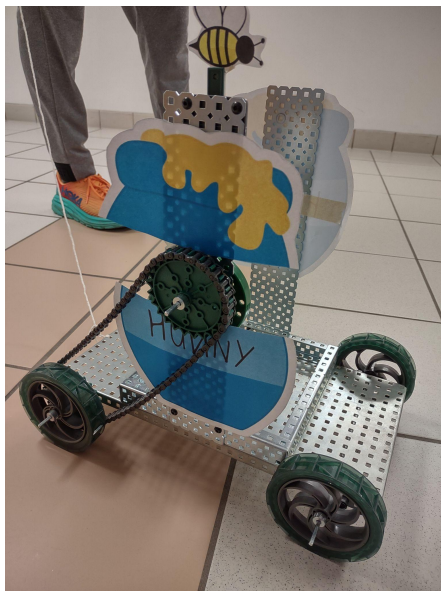
Design Process Solution (process used to create the pull toy.)

Our process: First we made drawings of what we thought the pull toy could look like. Once we decided on the honey pot, we looked up pictures of PLTW pull toys to understand how the mechanism could work. Then we created the base for our pull toy to be built off of. While creating the base we decided we needed bigger wheels so we got them. We also decided not to make a full pot because it would have made the toy too heavy.

Next we created the mechanism to make the pull toy unique. It took a lot of experimentation to get the mechanism to work correctly. We decided to just use the rising bee gear instead of adding another mechanism since our pull toy was not suited to hold any others.

After that we printed out some pictures that we could attach to the pull toy to make it look better. Later we went in the hall to test it out. It worked so we took videos and finished up the sheets in our folder.

Pictures and videos



Rubric

Name: _____
 Group Members: _____

Grade: _____
 Day _____, _____ Half

Single Point Rubric for Pull Toy

Advanced Exceeding Standards	Criteria Standards for this Project	Concern Areas that need work
We did all of this and put it neatly in our slideshow	Design brief is completed and includes all required information, including client, designer, problem statement, design statement, constraints and deliverables.	
	The project includes a detailed step-by-step description of the design process.	
	Research is documented With appropriate citations. Research shows a variety of resources and has more than two sources.	
	Three sketches are complete and annotated to show all important information. Heading information is complete and accurate. All designs are unique and completed in pencil.	
We filled out the chart and justified the decision.	Decision Making Matrix complete with all criteria listed and each member's drawing was evaluated. The student can effectively justify the final decision.	
Materials	The final product exactly matches the final design. Drawing with materials list	
	Students test and evaluate	

- Make a list of sources
 Annotation
 Final drawing

	Their prototype, make Modifications if necessary, And thoroughly document changes.	
	The student consistently listens to all team members, respects varying opinions, communicates ideas and opinions effectively, and engages in compromise. Student completes their portion of the project on time.	
85-100	75-85	50-75

Citations

<https://www.pinterest.com/pin/638737159635701298/>-Video of bumble bee pull toy with similar gear system as ours

<http://clantonmiddle.al.ccm.schoolinsites.com/?PageName=LatestNews&Section=Highlights&ItemID=269090&ISrc=School&Itype=Highlights&SchoolID=6372>-Pictures of pull toys with our gear