

Assignment 3 Pull toy Challenge

Groton-Dunstable Regional Middle School

Our Design Process:

Our Pooh pull toy was a trial and error sort of project. At the start we struggled at finding the right sized base where the axel reached both sides so that both wheels could turn together. We solved this problem by putting two metal base plates together instead of just one. We held them both together through screws. After this problem our building process went well, we installed our wheels onto our baseplate and they all spinned freely. We installed them by putting on bearings, and knut's to secure them in place and help them spin smoother. On one of our wheel in put a gear on the axel so that they spun together, so that when the wheels spun, so did the gear. This is part of our gear system. Then we just had to install our tower where our moving Pooh Bear would go. We secured a piece of metal to the baseplate through screws, knuts, and spacers. At this point, all we need to do is print out an photo of Pooh Bear, and install our final gear and resize the chain to fit so that both gears spin together. Just like our other gear, we used bearings, an axel, and a spacer to tightly secure the gear, bracket, and cam so that it'll allow the wheel of the follower would move up and down allowing the motion of pooh bear. We secured the bracket once again with screws and nuts. After that, we were practically done with our pull toy, we printed out our photo of pooh bear eating honey, and taped it onto the follower and metal piece so that pooh bear would move along with the gear chain. After this, we printed and also installed out quote, and tied a piece of string as our rope to pull our pull toy. This finishes up our pooh bear pull toy!

Drawings/sketches



Decision Matrix:

Decision Matrix Template - Pull Toy

Criteria	4 wheel system	5 with entirely features	6 gear mechanism of gear	Tracks			Total
	4	3	4	3			15
	2	3	4	2			12
	4	3	4	4			15

Scale from 1 (Worst) - 4 (Best)

Rubric:

Single Point Rubric for Pull Toy

Advanced Exceeding Standards	Criteria Standards for this Project	Concern Areas that need work
Our design brief is thoroughly complete, with full sentences, and all questions and responses are filled in. And our detailed design process is located on our slideshow.	Design brief is completed and includes all required information, including client, designer, problem statement, design statement, constraints and deliverables.	
Our project includes our step-by-step description of our design process. We documented the steps we took to overcome some challenges. Such as how we had to move one of our gears further out so that everything aligned, allowing our system to work.	The project includes a detailed step-by-step description of the design process.	
We did use google images to find ideas of what our pull toy should look like. And we used the PLTW website as a guide throughout our project.	Research is documented With appropriate citations Research shows a variety of resources and has more than two sources.	We did not research enough, and should have used more resources to build our pull toy. ↑
Our group has three completed sketches of our designs. We used labels, and our best drawing capabilities to represent vex parts. All of our designs are in pencil.	Three sketches are complete and annotated to show all important information. Heading information is complete and accurate. All designs are unique and are completed in pencil.	We could've possibly improved the neatness of our illustrations. Some things may be hard to interpret since there are a lot going on. Even with labels it is hard to picture what our designs may look like in-person.
Decision matrix is complete with each individual's flaws and cons, as well as criteria, total points, and who's design we decided on.	Decision Making Matrix complete with all criteria listed and Each drawing is evaluated The student can effectively justify the final decision.	

	The final product exactly matches the final design	
Made multiple test runs pulling our pull toy to see if the movements of our image matched our idea. And we made necessary modifications such as tightening any loose screws, re-size our chain, and reprint our Pooh Bear since it didn't turn out how we wanted it to.	Students test and evaluate Their prototype, make Modifications if necessary, And thoroughly document changes.	
We all listened to each other's ideas, and we were all engaged in the project. We respected each other's varying opinions on what and how we should do things, but we were pretty on topic for most of the time and thought of solutions quickly, not wasting time disagreeing.	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.	We could definitely balance out the work more between all three of us. We were all definitely engaged, but we didn't get all the opportunities some of us wanted.