

FIRST Team 4085 - Technical Difficulties Nathan Fleegeer, Outreach Lead
January 24th, 2017

PROJECT PROPOSAL
for
Tobi's Toys

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1. Summary

We are FIRST Robotics Competition team 4085. Our robotics team builds robots that compete in competitions with other teams around the region. Tobi's Toys is our team's first major outreach project. We want to positively impact our community through the collection and adaptation of toys for children with disabilities. Our goal is to train all members of our team to adapt toys, and donate 100 modified toys. We need monetary donations for tools, donations of electronic toys to adapt, and volunteers to help adapt. The total cost of all tools and materials (other than donated toys) comes out at \$208.30. We hope our team impacts the community through this program not only this year, but for many years to come.

2. Introduction

We are 4085.

Our FRC robotics team was founded 7 years ago. Our mission is to design, create, and build successful robots, as well as graciously compete with other teams and positively impact our community. Our organization trains students how to use the design process in creating competition ready robots. We have just 6 weeks to build a robot, and as big an accomplishment as that is, we're aiming bigger because Team 4085 is much more than robots.

Our newest endeavor is our outreach mission known as Tobi's Toys. This project is essentially a toy drive to collect toys for children with disabilities, but it doesn't stop there. Our team members are going to get hands on and modify the toys so that kids who wouldn't typically be able to play with them get the opportunity to. This is not only our local community, but also sets a standard for how others can get involved in their communities.

3. Needs/Problems

The problem we are tackling is an easy one to fix, yet it is overlooked by many. There are thousands of children who, because of varying physical impairments, cannot play with regular versions of toys. Many adapted version of toys already exist but they can cost up to three times as much as their unadapted counterparts. This problem of expensive and unavailable toys has been around for years and impacts thousands of children and their families. Also, this isn't just an issue in our community, it affects families throughout the country and even the world. Our team wants to do more than just build an awesome robot, we want to help change the lives of children.

4. Goals/Objectives

Our goal is to collect toys and adapt them, so disabled children can physically use them.

Objectives

- Acquire toys through Tobi's Toys toy drive
- Train team members to adapt and modify toys collected
- Modify as many toys as possible on workshop days

We hope to involve our community in the adaptation of toys so our project can go much bigger than Team 4085.

5. Procedures/Scope of Work

The scope of the task will start off small. We are beginning with a simple toy drive at Summit High School. Through our meeting with the school board, we're hoping to expand the toy drive district wide. Furthermore, we plan to crowdfund to help pay for the costs of the tools and adaptation materials.

The training would include team members learning how to take apart the toys, create a new circuit to the button adaptation, and then reassemble the newly adapted toys. Training will come from one of our coaches Mr. Griffith, Ohio State University mentors, and students who know how to do this from previous experience.

6. Timetable

Here is a more precise timetable for our first year toy drive and adaptation process.

| Description of Work | | Start and End Dates |
|---------------------|--------------------------------------|----------------------------|
| Phase One | Collect the toys through a toy drive | January 30th-February 28th |
| Phase Two | Train Students (first wave) | January 27th |
| Phase Three | Adaptation Workshop | TBD |

| ACTIVITY | IMPLEMENTATION TIME | | | RESPONSIBILITY |
|----------------------------------|---------------------|---------|---------|---|
| | Month 1 | Month 2 | Month 3 | |
| 1. Construct Toy Drive in Detail | X | | | Nathan Fleeger Abby Hoferkamp |
| 1.1. Stem Night Presentation | X | | | Nathan Fleeger Aleyna Dragonette Abby Hoferkamp Jacob Coley Joey Welday Dylan Davis Olivia Wyandt |
| 1.2. School Board Presentation | X | | | Nathan Fleeger Abby Hoferkamp Emily Monty Dylan Davis Jake Coley Aleyna Dragonette |
| 1.3. Conduct training | X | X | | Joe Griffith OSU Consultants Previously Trained Students |
| 2. Adapt Toys | | X | | TBD |
| 2.1. Plan Next Toy Drive | | | X | TBD |

7. Budget

To get started, we will need to acquire tools and materials, of which we have priced as follows:

| | Description of Work | Costs |
|------------------|---|-------------------------------|
| Phase One | Buy Tools | |
| Phase Two | Buy Materials | |
| | Buttons (target) | \$12.79 for 4 |
| Tools | 5 Soldering Irons (Auyue Variable 60watt Station) | \$30 each for \$150 |
| | 1 Roll of Solder (Amazon Mudder .6mm lead free rosin core) | \$12 |
| | 100 Female Jacks (showmecables.com 3.5mm stereo female connector plastic) | \$7.30 for 100 |
| | 50ft. Of Speaker Wire (Amazon) | \$7 for 50ft \$9 for 100ft |
| | Files for Cleanup (Amazon Tekton 6665 needle file set) | \$7 |
| | Small Electronic Screwdrivers (Nahch precision screwdriver set, 23 piece) | \$25 |
| | Total | \$ 221.03 |

8. Key Personnel

List the key personnel who will be responsible for completion of the project, as well as other personnel involved in the project.

| | |
|-----------------|--------------------------------|
| Client | TAPS, Katelyn's Kloset |
| Sponsor | AEP |
| Project manager | Nathan Fleeger, Abby Hoferkamp |
| Team | FRC Team 4085 |

9. Evaluation

- We would like to have at least 100 adapted toys this season, and 100 toys is the number we will use to measure success.
- We would like to see every member of the team trained and able to adapt these toys
- We will know how successful we were by the end of the season, depending on how many toys we've had in comparison to our target goal of 100, and how many members were trained with our target goal being 51.
- Abby Hoferkamp and Nathan Fleeger will carry out the evaluations

10. Endorsements

- The Ohio State University Toy Adaptation Program
- Katelyn's Kloset

11. Next Steps

If you want to get involved, please donate toys or money to team 4085's Tobi's Toys

outreach project.

- Donate Toys!
- Spread the Word!
- Learn How to Adapt!

12. Appendix

Reynoldsburg Robotics LLC, 2017

TAPS is affiliated with The Ohio State University

[Name], Project Client,

Abby Hoferkamp, Project
Manager

Nathan Fleegeer, Project
Manager

Date: _____

Date: _____

Date: _____