Toy Lab

Making a child's toy out of reusable material

Lab #1

Leonardo Fusser & Josue Reisler, 1946995 &1943006

ABSTRACT

uring the making of this lab/project, the designated team and the other groups in the class are faced with the same challenge. That is, to find reusable material at our disposal to craft a toy for a young child. Between the time when we were given the challenge and until the day of our presentation of the toy we created, we overcame various obstacles. From finding the correct material to the correct procedure and other important elements, the work was done within the specified time below. This lab report will provide you an in-depth review of our work.

Experiment Performed on **22 August 2019**
Report Submitted on **5 September 2019**

Department of Computer Engineering Technology
The Profession of Computer Engineering Technology
Andreea Iftimie & Manijeh Khataie

VANIER
CÉGEP / COLLEGE
Learning today Leading tomorrow

Table of Contents

Introduction

The start of this lab details a challenge given to build teamwork and an engineering mindset when approaching construction and lab task. The challenge given included the task of finding a way to use reusable material to craft a child's toy. To go into more detail, the only way to complete this project/lab was to find reusable material *(without buying any materials)* to compile and make into a child's toy. After collecting all the materials, some basic imagination was required to lead what the toy was going to be. Respecting the objectives of the lab, led our team to create our toy. The continuation below outlines our work.

Objectives

- Use *only* recyclable material.
- To complete the project in a timely manner.
- To design a safe toy for a small child.
- To understand and respect certain constraints given to us *(like similar outlines given in the workplace)*.
- To use available resources to our advantage *(i.e. looking up ideas on the computer)*.

Material Used

- Standard Tissue Box *(x1)*.
- Zip ties *(x10)*.
- Dough Kneader *(x1)*.
- Metal Axle *(x2)*.
- Mini CD *(x4)*.
- Network Cable *(x2)*.
- Flat Screw *(x2)*.
- Hot Glue Gun *(x1)*.
- Construction Paper Folio *(x1)*.
- Lead Pencil *(x1)*.
- Scissors *(x1)*.

Procedure

- Using lead pencil, puncture two holes, each near the lower edges of the rectangular face of the tissue box.
- Repeat *step 1* on the opposite face of the tissue box, making sure to align second set of holes with the first.

- Slide both metal axles into the holes until both sides of each axle are secure and facing out of the tissue box.
- Carefully place each Mini CD in a vertical position on the ends of both axles.
- Using zip ties, secure stopper on the end of each axle to prevent Mini CD's from sliding off.
- Using pencil, puncture square face of the tissue box twice in designated position for eye sockets.
- Tightly secure flat nails in eye socket holes.
- Using hot glue gun, secure first network cable underneath eye screws in order to from the toy's smiling mouth.
- Using pencil, puncture hole on opposite square face of tissue box, near the top.
- Using dough kneader assembly, thread dough screw through back hole and affix to wooden assembly.
- Using hot glue gun, lock metal in place between square face of tissue box in the upwards-curving position.
- Using zip ties, firmly secure wooden assembly to back metal axle.
- Using zip ties, affix second network cable to end of dough kneader to serve as pull string.
- Using scissors, cut out necessary folio construction paper parts, including top cover and fin.
- Using hot glue gun, secure folio scrap paper on open top surface of tissue box.
- Using hot glue gun, secure folio scrap paper fin in the center of folio paper cover.

Results and Discussion

Over the course of the building procedure, we encountered several difficulties while assembling the final product. One major setback we encountered was the use of proper adhesive when securing certain parts to the box. We initially believed that traditional school glue would be sufficient to bind the dough kneader and the construction paper to the tissue box, but it proved to be far too weak. We ended up resorting to the use of a hot glue gun that was present in the lab area in order to finish putting these elements together.

Furthermore, we also encountered an issue in which the dough kneader was too heavy and was putting too much weight on the back on the construct. We managed to improvise and overcome this fault by using two zip ties in order to bind the wooden assembly of the dough kneader to the back axle, balancing the weight and keeping the tissue box sliding towards the front. We also planned to puncture the necessary openings using our scissors, but upon further review it was decided that the pencil we had used to outline the positions of the axles were a more efficient tool for creature secure and stable openings.

Work for this task was divided as equally as possible, with both team members acquiring half of the materials. Throughout the construction procedure, both members worked on different aspects of the assembly, such as one member working on the zip ties and the assembly of the dough kneader, and the other working with the glue and binding of the facial features.

Conclusion

To conclude, by using only reusable materials *(ones that were not purchased, only available to our disposal)*, following and respecting certain constraints we were able to obtain a 100% recycled toy. Of course, this goes without to say about the obstacles the group had to overcome. One obstacle, which was more pronounced than the others, was that we had anticipated wrong about the glue we intended to use. Nonetheless, we still managed to pull through and complete the

task that was given to us. If given the opportunity to expound upon the knowledge gained in this lab, we would test our materials and use other objects to simulate a more basic design for our construct in future labs in order to ensure that our equipment and design functions as intended before finishing the final product.

References

Pictures below represent our toy being built from beginning to end.

INDEX