

**From:** Team F5  
**To:** Dr. Oman  
**Date:** April 18<sup>th</sup>/2018  
**Re:** Final Product Testing

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First of all, we as a team went to the clients, Ms. Eva and Krista several times last and this semester in order to know what they exactly need. After proposing many ideas to them, they chose to have a regular sensory board. From that day, our mission started and we have been trying to come up with something new and a design that never existed. Our final design is a rectangular sensory board that is made from wood. It is pretty much like a wooden box that is open from the top. Also, this sensory board has many parts attached from the outside and inside. This sensory board was built for two main reasons which are education as well as entertaining because enjoying the materials you are learning helps a lot. Team F5 built this rectangular sensory board according to the customer requirements. Therefore, these customer requirements were transferred into engineering requirements. In this document, we will how each engineering requirements have been met.

### 1- Safety

In order to make the device safety, we covered all sharp edges using plastic casing. Also, we sanded all the wood to make sure it is soft and clean. Below shows some pictures how this requirement is met.



Figure 1: Plastic Casing



Figure 2: All wood Sanded

## 2- Durability

We used high quality of wood so that it lasts long. In addition to that, the parts attached to the sensory board are very well attached. Here are some pictures

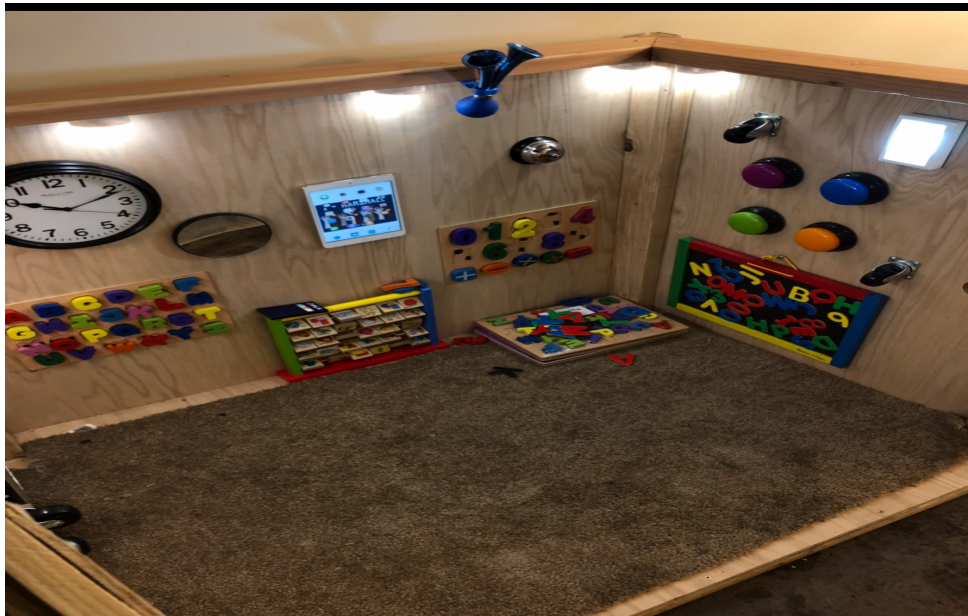


Figure 3: wood and parts

### 3- Sustainability

Here was our biggest concern of how to make sure that the device does not tip over. In order to do so, we constructed big supports using red oak surrounded the device from the top. Below is a picture shows how we met this requirement.



Figure 4: Right side support of the device

#### 4- Cost

Here it shows that we did not exceed the limit provided by Gore. Our budget is \$2000 and still did not even exceed a \$1000. Bill of Materials below shows all parts bought so far.

Table 1: BOM

	Materials	Cost in \$	Quantity	Total Cost \$
1	Alphabet and number puzzle	\$29.99	2	\$59.98
2	Bell	\$5.85	2	\$11.70
3	Zippers	\$7.50	1	\$7.50
4	Buzzers set of 4	\$18.97	1	\$18.97
5	Tax	\$1.70	N/A	\$1.70
6	Days cards	\$6.99	1	\$6.99
7	Monthly calendar cards	\$5.99	1	\$5.99
8	US map chart	\$3.49	1	\$3.49
9	Shapes Sound Puzzle	\$12.99	1	\$12.99
10	Tax	\$2.64	N/A	\$2.64
11	Wall clock	\$3.88	1	\$3.88
12	BP DOOR CHN	\$3.97	1	\$3.97
13	NK RD DR HNG	\$2.97	1	\$2.97
14	3 BRRL BOLT	\$2.67	1	\$2.67
15	2 WD SCRW	\$0.97	1	\$0.97
16	TAX	\$1.29	N/A	\$1.29
17	CASTER SWVL	\$2.94	4	\$11.76
18	DRLCK HALLCL	\$7.87	1	\$7.87
19	Wall clock	\$3.88	1	\$3.88
20	TAX	\$2.10	N/A	\$2.10
21	WORLD MAP	\$3.49	1	\$3.49
22	MAGNETIC CHALKBOARD	\$19.99	1	\$19.99
23	TAX	\$2.11	N/A	\$2.11
24	DOOR HANDLE	\$12.05	1	\$12.05
25	MAGNETIC TAPE	\$3.88	4	\$15.52
26	TAX	\$1.39	N/A	\$1.39
27	WOOD 0.725IN *48IN * 96 IN	\$49.98	3	\$149.94
28	WOOD 1.5IN *3.5IN * 96IN	\$9.77	8	\$78.16
29	SCREWS	\$8.38	1	\$8.38
30	HINGS	\$3.67	3	\$11.01
31	TAX	\$22.15	N/A	\$22.15
32	WOOD CEDR .216IN*23.75IN*47.75IN	\$16.92	2	\$33.84
33	TRIM BOARD	\$3.22	3	\$9.66
34	TAX	\$3.88	N/A	\$3.88
35	TAPE FOR THE IPAD	\$6.97	1	\$6.97
36	AAA BATTERY	\$11.78	1	\$11.78
37	AA BATTERY	\$6.94	1	\$6.94
38	TAX	\$2.30	N/A	\$2.30
39	IPAD Mini	Owned	N/A	Owned
TOTAL COST: \$572.87				

## 5- Strong Base

We want a base that can resist very heavy stuff. In order to meet this requirement, we built a very strong base that can resist all team members standing up inside the box. Here is a picture that shows the base of the design.



Figure 5: Strong Base

## 6- Education while entertaining

This is our goal in this project and it is to build something that kids can learn from while entertaining. We met this requirement through using parts that are very attractive and at the same time it can teach them something. Also, we installed LED lights in order to give a very attractive look for the design.



Figure 6: entertaining parts

A video of the whole design will be provided.