

Marshall Classroom

Mohammad Alkatan (1)

11/8/2017



MARSHALL
ELEMENTARY SCHOOL
SCIENCE FAIR PROJECTS
DUE FEB. 2
IN-AREA KINDERGARTEN
REGISTRATION FEB. 23

**ME 476C-5
Team F5**

Abdulah Ali Almutairi

Mohammad Alkatan

Abdullah Almutairi

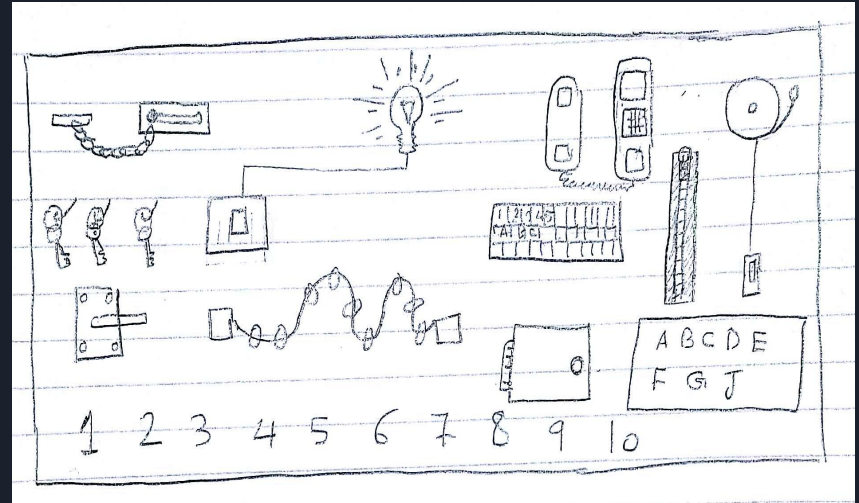
Yousef Alkatan

Taha Alansari

Project Description:

Mohammad Alkatan (2)
11/8/2017

- Creative sensory board
- Disabled children need to learn skills
- Opening and closing door
- Turning lights on/off



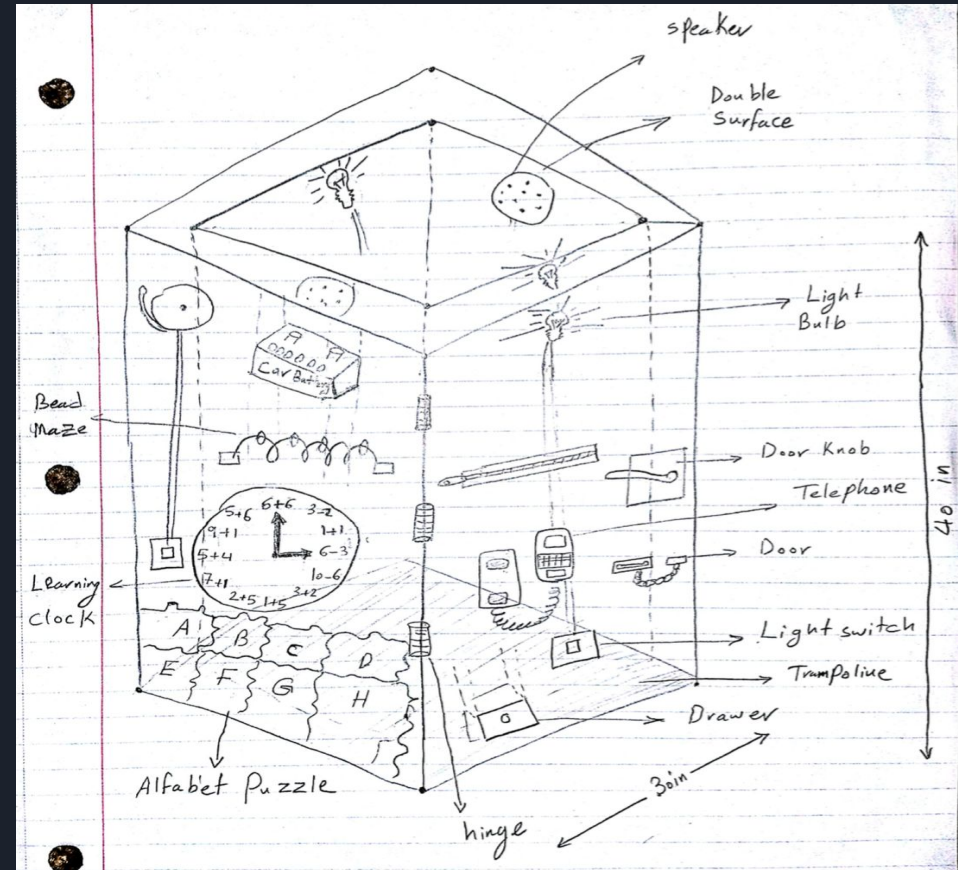
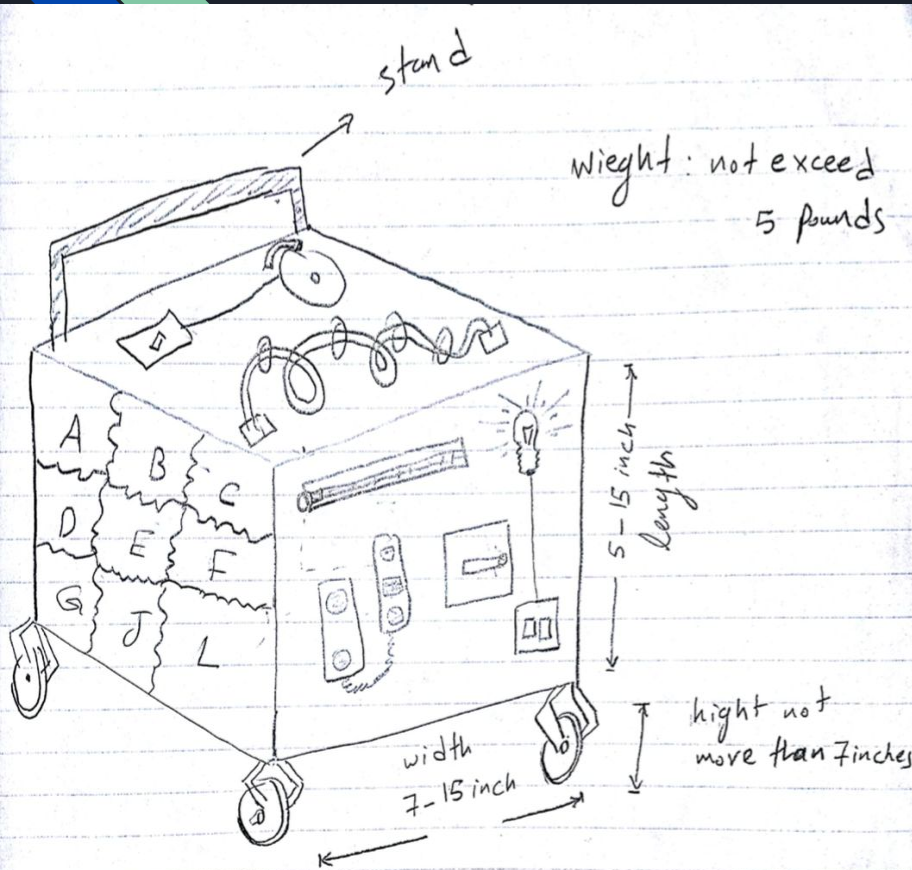
Design Description

Yousef Alkatan (3)

11/8/2017

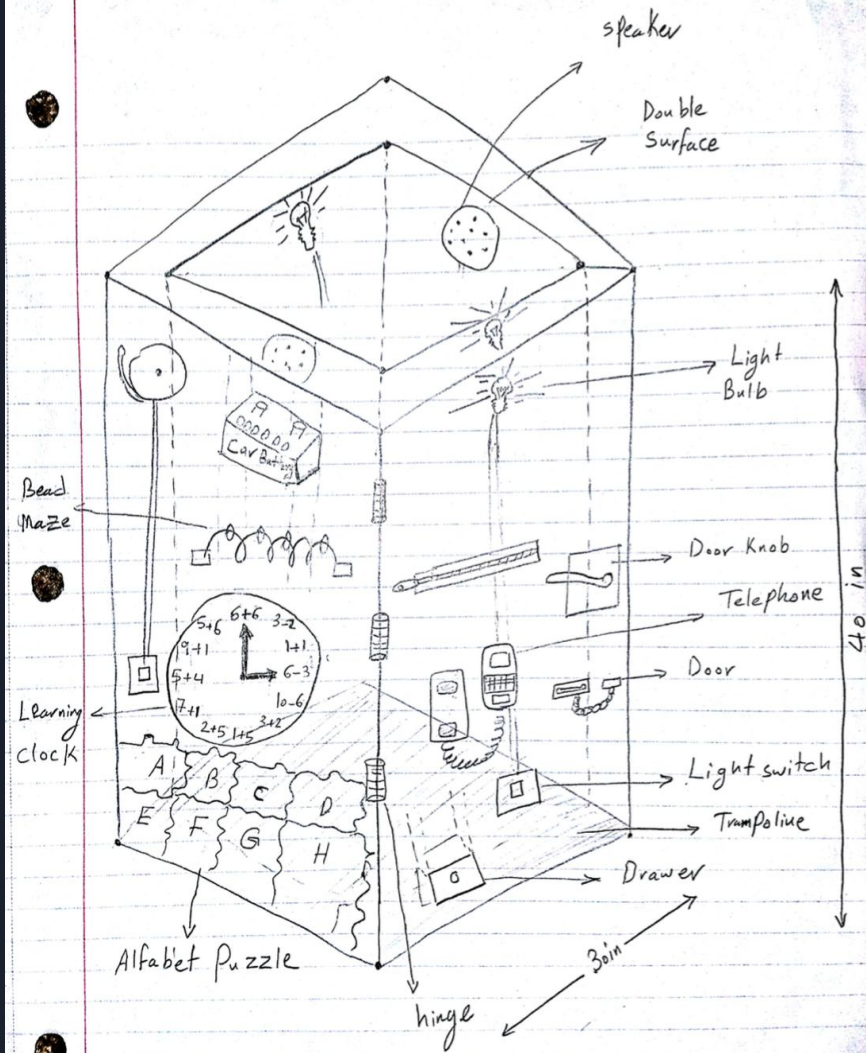
Old Design

New Design



How the Design works?

- One of the sides of the semi-cubic sensory board is considered as a door, so child use it to go inside the design.
- It can be used by five children.
- educational clock
- For the safety, electricity are put away





Customer requirements:

- Safe
- Durable and Reliable
- Flexible
- Educated device
- Cost
- Entertaining device

Engineering Requirements:

Engineering Requirements	Target Values
Safe	Electricity away, belt for the trampoline
Flexible design	Adjustable to a length of 40 inch
Strength of the device	Yield strength of at least 6 Mpa
Soft material	Low pulling force of below 5 Pascal
Total weight	Less than 25 Kg
Cost	\$2000
Sensory parts	Includes instructional lights and voice prompt

Schedule and Budget:

Abdullah Almutairi (7)

11/08/2017

- Our Budget in \$ for this project is \$2000
- Our cost breakdown is shown in the table next slide
- Funding Source: Gore
- Estimated Cost:
 - * Materials (50%)
 - * Advertisement (20%)
 - * Manufacturing (30%)



List of Materials:

Abdullah Almutairi (8)
11/08/2017

	Materials	Cost in \$	Quantity	Total cost
1	Door Knobs	\$3.47	5	\$17.35
2	Light bulb	\$2.17	4	\$8.68
3	Light switch	\$2.97	4	\$11.88
4	Car Battery	\$49.88	1	\$49.88
5	Drawer	\$31.98	1	\$31.98
6	Bell	\$5.88	2	\$11.76
7	Door hinges	\$1.56	3	\$4.68
8	Zip	Owned	2	N/a
9	Speaker	\$9.49	1	\$9.49
10	Wood	\$19.95	8	\$159.60
11	Telephone	\$5.98	2	\$11.96
12	Alphabet Puzzle	\$4.82	1	\$4.82
13	Learning clock	\$6.97	1	\$6.97
14	Bead Maze	\$8.29	2	\$16.58
				\$345.63



SCHEDULE and BUDGET:

- **This Semester:**

Choosing the final selection for the project

Planning

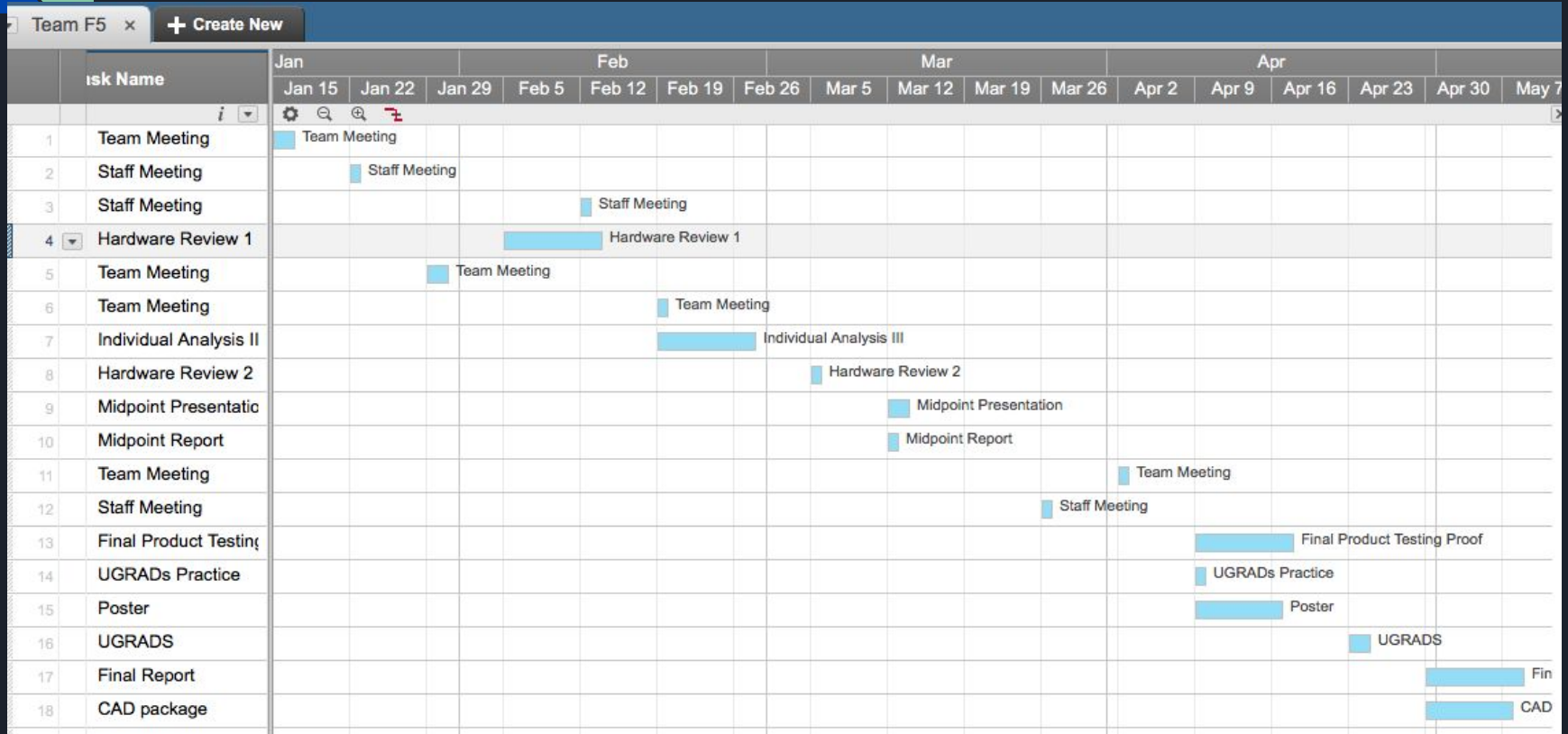
Background research

Drawing the Project

SCHEDULE and BUDGET:

Taha (10)
11/8/2017

Gantt Chart for next semester





References

[1] Chang, Yao-Jen, Shu-Fang Chen, and Jun-Da Huang. "A Kinect-based system for physical rehabilitation: A pilot study for young adults with motor disabilities." *Research in developmental disabilities* 32.6 (2011): 2566-2570.

[2] Fichten, Catherine S., and Claudia V. Bourdon. "Social skill deficit or response inhibition: Interaction between disabled and nondisabled college students." *Journal of College Student Personnel* 27.4 (1986): 326-333.

[3] <https://www.amazon.com/>