Group Symbol:	Name 1:	Name 2:	Name 3:

1. Problem Definition

- The machine which must be sized to fit **on the silver project storage shelves**.
- Using a meter stick, measure out the maximum height, width, and depth that your machine can be when finally constructed.
- Be sure to write your answer in centimeters with 2 decimal places and in inches with a fraction of an inch estimate included.

	Measurement		Measurement
Maximum Height (cm)		Maximum Height (inches)	
Maximum Width (cm)		Maximum Width (inches)	
Maximum Depth (cm)		Maximum Depth (inches)	

Label the diagram of the shelf:

Success Criteria: Determine Size Restrictions

- Tech A2.3 – I can use metric and imperial units of measurement
- Math E1.3 – I can use multiple forms of measurement

Not Yet Met	Met	Criteria
❑	❑	I can produce accurate measurements of the shelf *in metric.*
❑	❑	I can produce accurate metric measurement to two decimal places.
❑	❑	I can produce accurate measurements of shelf *in imperial*.
❑	❑	I can produce accurate imperial measurements to a fraction of an inch.
❑	❑	I can cut the cardboard back of machine is cut to fit on storage shelf

Overall Feedback: Smiley Face Scale

☐	●	✓	☺	☺☺

Group Symbol:	Name 1:	Name 2:	Name 3:

2. Analysis

A. Task Brainstorming

- As a group, brainstorm a simple task for your machine.
- On a separate sheet of paper, jot note as many ideas as you can (12 minimum) of things you could get your machine to do.
- *Take a photo of this brainstorming!* Add it to your PowerPoint.

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.
13.	14.	15.
16.	17.	18.
19.	20.	21.
22.	23.	24.

What is your final choice of **task**?

Group Symbol:	Name 1:	Name 2:	Name 3:

2. Analysis

B. Theme Brainstorming

- Once you have decided on the task your machine will accomplish, brainstorm themes for your machine.
- On another separate sheet of paper, jot note as many ideas as you can (12 minimum) of themes you could include in the design of your machine.
- *Take a photo of this brainstorming!* Add it to your PowerPoint.

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.
13.	14.	15.
16.	17.	18.
19.	20.	21.
22.	23.	24.

What is your final choice of **theme**?

Group Symbol:	Name 1:	Name 2:	Name 3:

3. Design

A. Individual Machine Ideas

- Now that you have your basic ideas about the machine, each group member should individually brainstorm what they think the machine should look like.
- You should then discuss all of these ideas as a group, choose one idea that everyone can agree to start on.
- *Take a photo of this brainstorming!* Add it to your PowerPoint.

B. Machine Sized Design

- Take that initial design and expand it to include machine size dimensions, a minimum of 8 steps, three simple machines, and a simple final task.
- *Take a photo of this brainstorming!* Add it to your PowerPoint.

8 Steps

Step	Who is responsible for building

Three Different Simple Machines

Success Criteria: Analysis and Design

- Tech A2.1, A2.4 . – I can document the design progress of the development of a product.
- Math A2. – I can make connections between mathematics and real-life applications

Not Yet Met	Met	Criteria
❑	❑	I can brainstorm 8 tasks for the machine.
❑	❑	I can brainstorm 8 themes for the machine.
❑	❑	Group Member #1: I can produce a sketch for the machine.
❑	❑	Group Member #2: I can produce a sketch for the machine.
❑	❑	Group Member #3: I can produce a sketch for the machine.
❑	❑	I can collaborate to create a full sized design.
❑	❑	I can document 8 steps of the machine and assign them to group members.
❑	❑	I can identify 3 different simple machines in my project.

Overall Feedback: Smiley Face Scale

☐	●	✓	☺	☺☺