

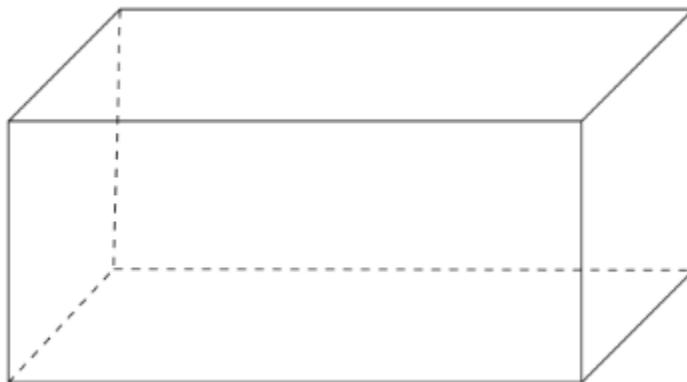
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|---------------|---------|---------|---------|
| Group Symbol: | Name 1: | Name 2: | Name 3: |
|---------------|---------|---------|---------|

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 |
|--------------------------|--------------------------|------------------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | I can produce accurate measurements of the shelf <i>in metric</i> . |
| <input type="checkbox"/> | <input type="checkbox"/> | I can produce accurate metric measurement to two decimal places. |
| <input type="checkbox"/> | <input type="checkbox"/> | I can produce accurate measurements of shelf <i>in imperial</i> . |
| <input type="checkbox"/> | <input type="checkbox"/> | I can produce accurate imperial measurements to a fraction of an inch. |
| <input type="checkbox"/> | <input type="checkbox"/> | 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 ? |
|---------------------------------------------|

| | | | |
|---------------|---------|---------|---------|
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|---------------|---------|---------|---------|

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 |
|------|---------------------------------|
| | |
| | |
| | |
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| | |

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 |
|--------------------------|--------------------------|-------------------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | I can brainstorm 8 tasks for the machine. |
| <input type="checkbox"/> | <input type="checkbox"/> | I can brainstorm 8 themes for the machine. |
| <input type="checkbox"/> | <input type="checkbox"/> | Group Member #1: I can produce a sketch for the machine. |
| <input type="checkbox"/> | <input type="checkbox"/> | Group Member #2: I can produce a sketch for the machine. |
| <input type="checkbox"/> | <input type="checkbox"/> | Group Member #3: I can produce a sketch for the machine. |
| <input type="checkbox"/> | <input type="checkbox"/> | I can collaborate to create a full sized design. |
| <input type="checkbox"/> | <input type="checkbox"/> | I can document 8 steps of the machine and assign them to group members. |
| <input type="checkbox"/> | <input type="checkbox"/> | I can identify 3 different simple machines in my project. |

Overall Feedback: Smiley Face Scale

| | | | | | |
|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|