



MESA DAY 2019-20

ENGINEERING LAB BOOK REQUIREMENT

TEMPLATE

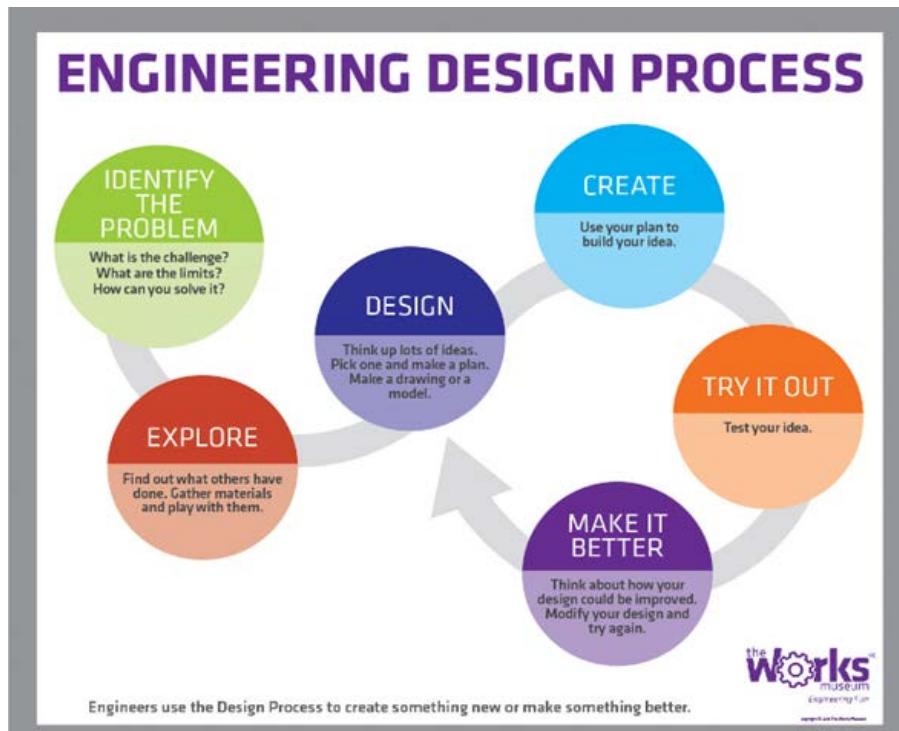
NAMES: _____
(team member names)

SCHOOL: _____

CENTER: _____

PROJECT: _____
(e.g. MESA Machine, Prosthetic Arm, etc.)

LEVEL (circle one): 6th gr 7/8th gr 9/10th gr 11/12th gr



1. IDENTIFY THE PROBLEM

What is the challenge being worked on?

What are the limits/constraints?

How do you think you can solve it?

2. EXPLORE

Find out what others have done (research). Clearly list at least 5 sources (web pages, articles, books, etc.). Identify (cite) and describe each one (one sentence).

Source #1

Citation:

Description:

Source #2:

Citation:

Description:

Source #3:

Description:

Source #4:

Description:

Source #5:

Description:

3. DESIGN

Brainstorm ideas (at least 3) and record them. Include a sketch or drawing for each.

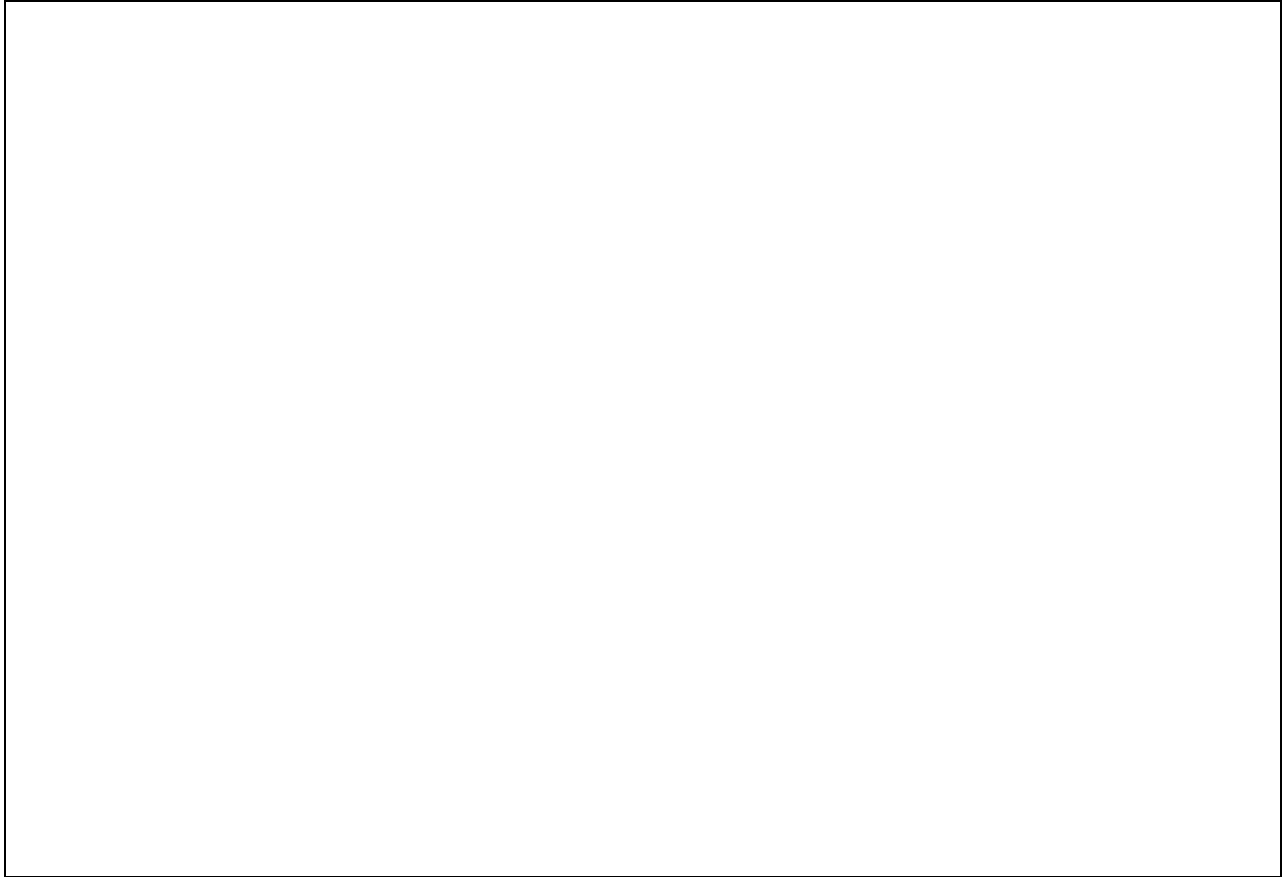
Idea #1:

Idea #2:

Idea #3:

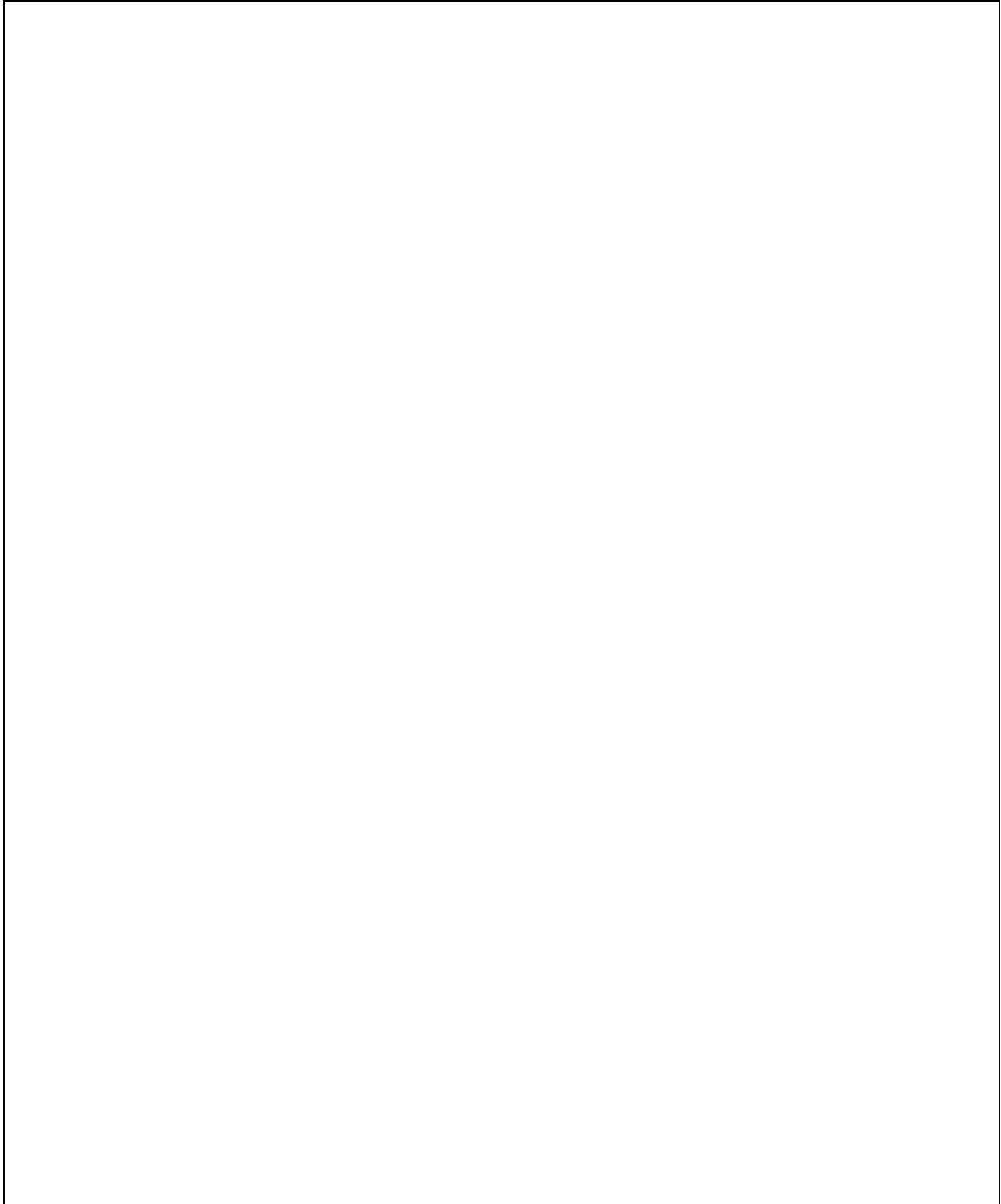
Select one of the ideas and describe a plan for building it (at least 5 sentences).

Generate a list of materials for the prototype.

A large, empty rectangular box with a thin black border, intended for the student to write a list of materials for their prototype.

4. CREATE

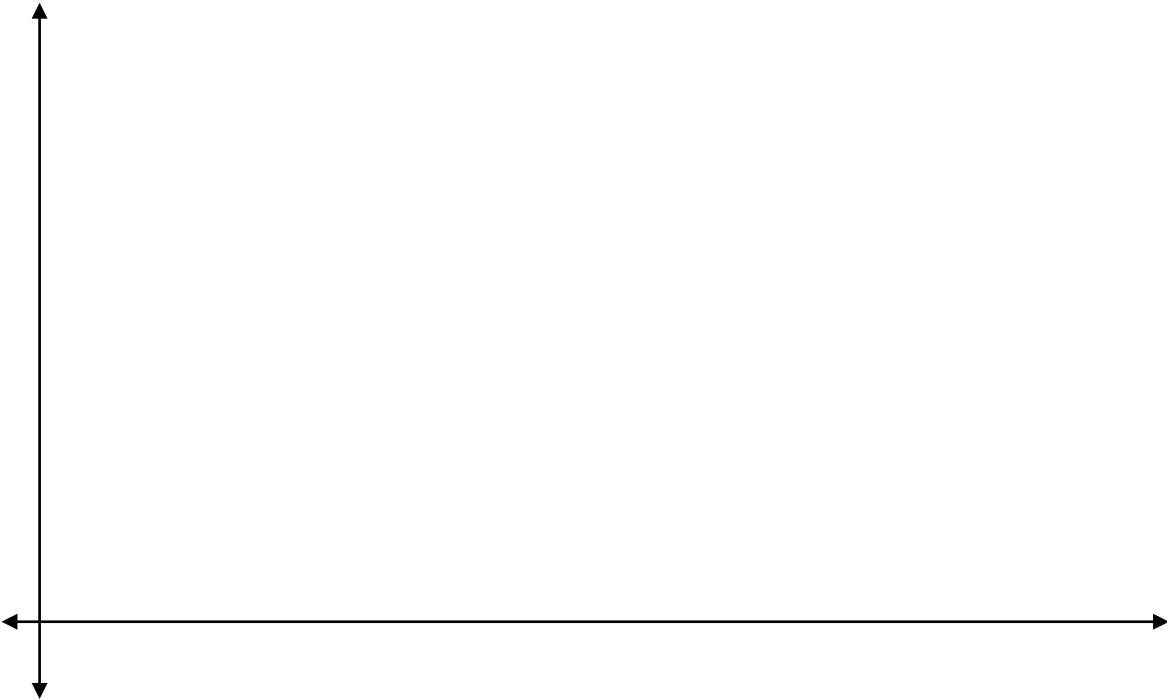
Using your plan, build your prototype (at least five sentences) Include a picture of the actual project prototype built.

A large, empty rectangular box with a thin black border, intended for the student to write their description of the prototype and include a picture of it.

5. TRY IT OUT

Test your idea/prototype. Describe at least 3 trials/attempts. Use tables/charts as needed.

<p>Test #1:</p> <p>Criteria:</p> <p>Results:</p>
<p>Test #2:</p> <p>Criteria:</p> <p>Results:</p>
<p>Test #3:</p> <p>Criteria:</p> <p>Results:</p>



**Teams may include additional tables, graphs and charts of their own. Teams are not limited to only using the graph and table shown here.*

Use of mathematical concepts/equations:

Applicable math concept/equation (state concept/equation):

How was the concept/equation used?
(demonstrate use of concept/equation as it pertained to project):

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How was the concept/equation used?
(demonstrate use of concept/equation as it pertained to project):

6. MAKE IT BETTER

How can you make the project better? What modifications will you be making (state at least 5)?

Modification/Improvement #1:

Modification/Improvement #2:

Modification/Improvement #3:

Modification/Improvement #4:

Modification/Improvement #5:

Build and prepare competition ready project. Include a picture below.

