MESA DAY 2019-20

ENGINEERING LAB BOOK REQUIREMENT

TEMPLATE

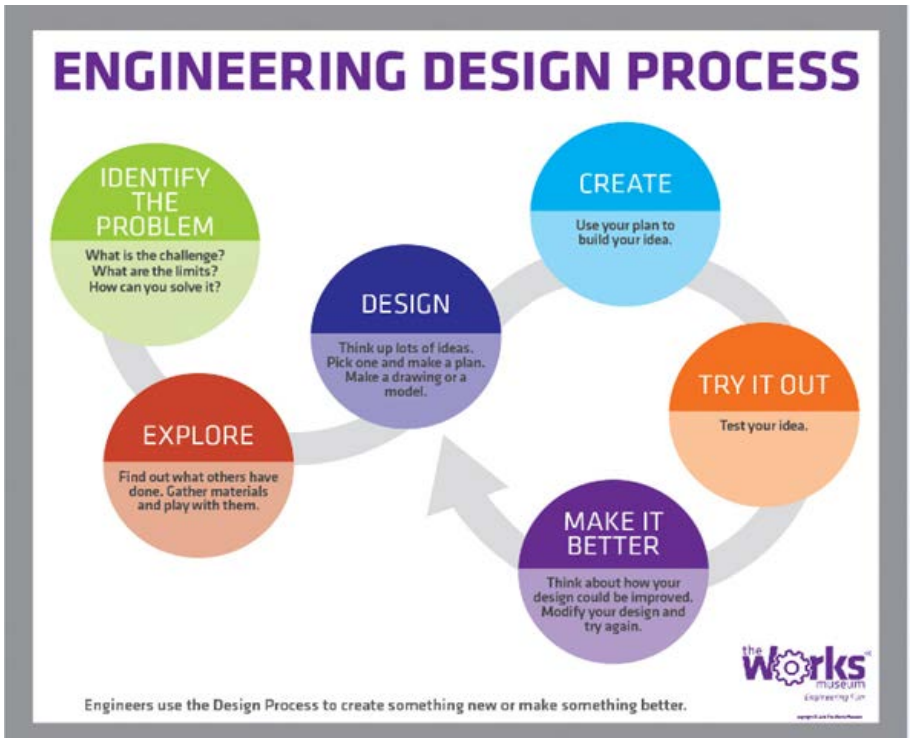
NAMES:_____
(team member names)

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 you 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.

4. **CREATE**

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

5. **TRY IT OUT**

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

Test #1: Criteria: Results:
Test #2: Criteria: Results:
Test #3: Criteria: Results:

**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.