



**MESA DAY 2019-20**

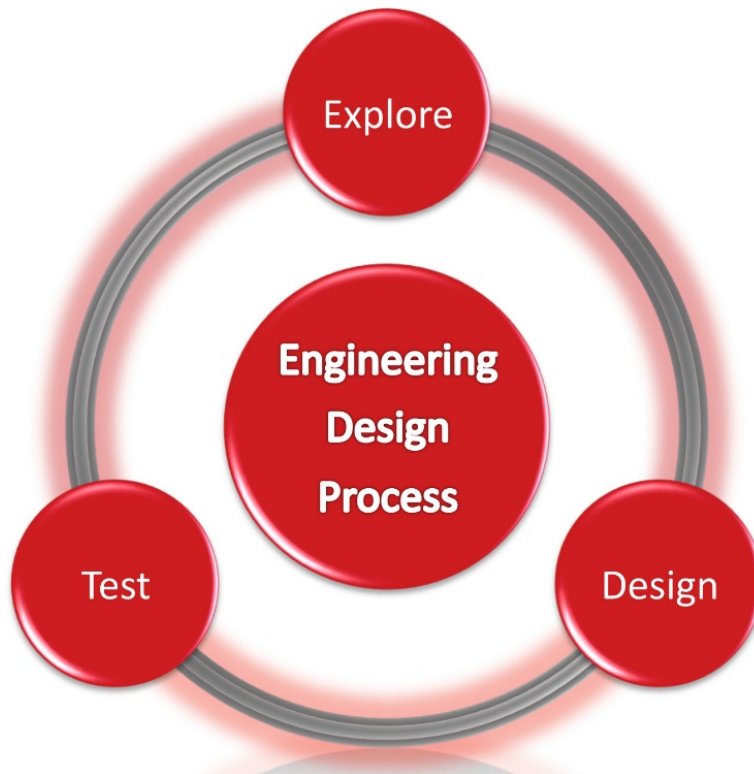
## ENGINEERING LAB BOOK REQUIREMENT TEMPLATE

NAMES: \_\_\_\_\_  
(team member names)

SCHOOL: \_\_\_\_\_

PROJECT: \_\_\_\_\_  
(e.g. Solar Car, PVC Bridge, etc.)

LEVEL (circle one):      Middle School      High School



## 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:

**DESIGN** (Continued)

*Select one idea and describe a plan for building it (at least 5 sentences).*

*Generate a list of materials for the prototype.*

**4. BUILD**

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

**5. TEST**

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

Test #1:

Criteria:

Results:

Test #2:

Criteria:

Results:

**TEST (continued)**

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.*

## TEST (continued)

*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):

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

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.*