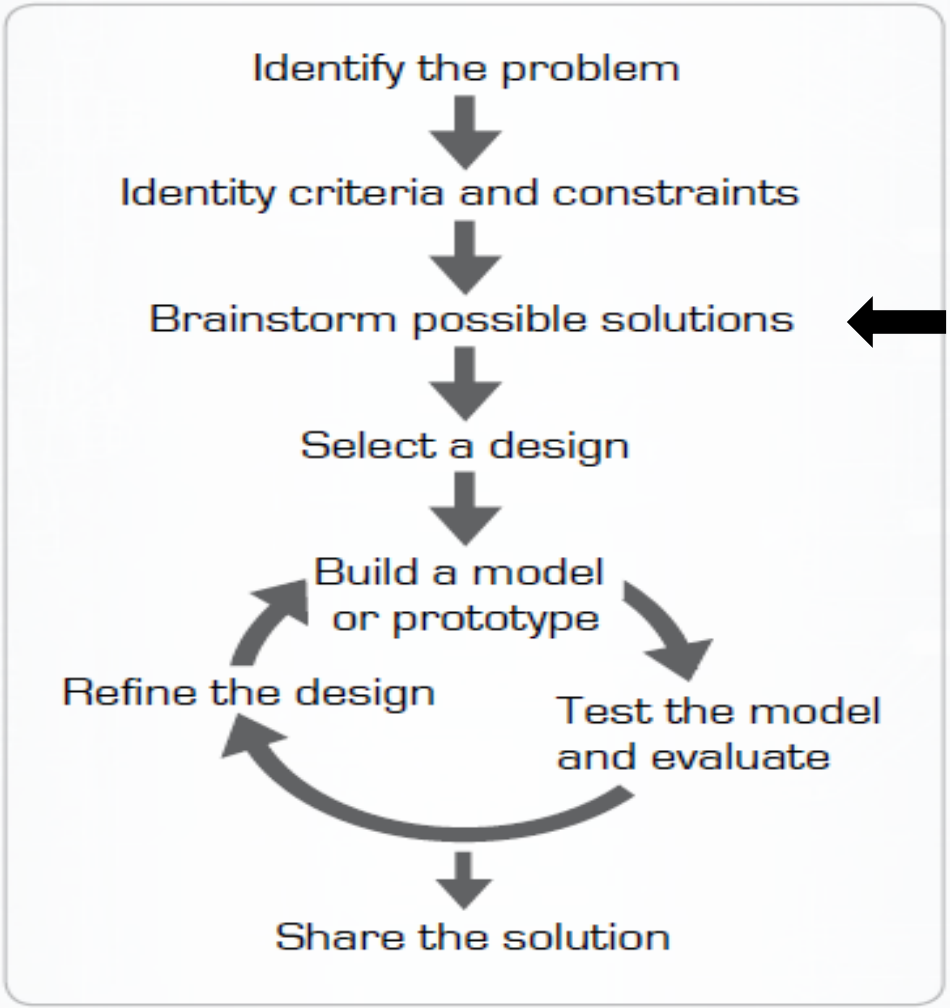
How to Solve Problems Like an Engineer

Using the NASA Engineering Design Process

NASA's Engineering Design Process



Graphic of Design Process

Identify the Problem

- Whose problem is it?
- Do you understand it?

The problem is given to you for each Mission in the Connecticut Aerospace Engineering Challenge.

Research

- Has someone else solved this problem before?
  - What did they do?
  - Can you use what they did?
- Do you need to research more about the problem to understand it better?

Use the same research rules you have learned in other classes.

Brainstorm Possible Solutions

- Everyone contribute – no judging ideas…yet.

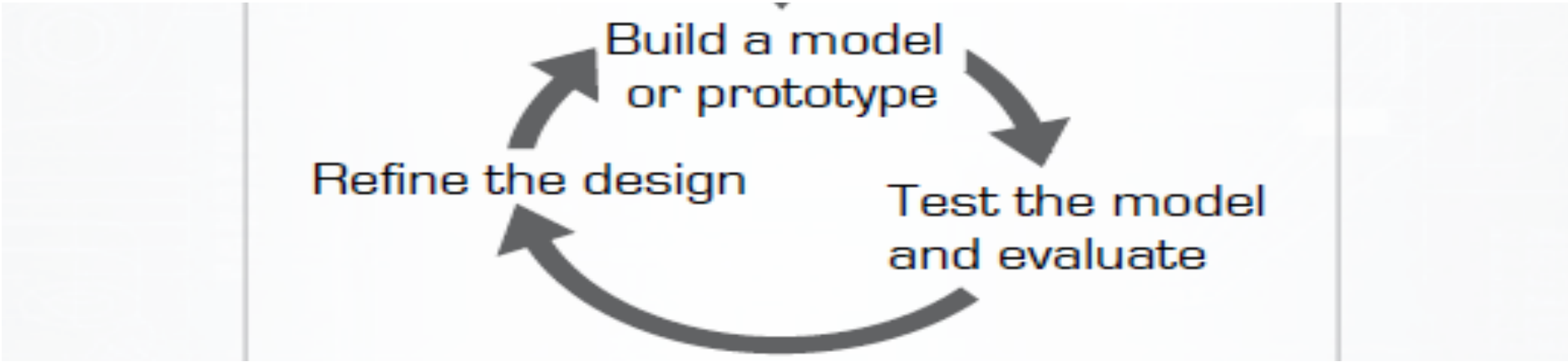
- Use SCAMPER to find new ways to use something:
  - Substitute
  - Combine
  - Adapt
  - Modify
  - Put to another use
  - Eliminate
  - Reverse

Select a Design

- Put ideas together from Brainstorming and Research.
- Agree to the final design by using a decision matrix or some objective method.

Clearly draw the selected design either by hand or using a CAD program.

Build, Test, Refine …Until Your Design Solves the Problem



Document each test, the results, and the refinements to your design in your team's Engineering Notebook.

Share the Solution

You will do this in your team's final presentation for the Connecticut Aerospace Engineering Challenge.