The A-B-D-C-E Engineering Design Process

- Ask
- Brainstorm
- Create
- Design
- Evaluate & rEfine
Ask:

* Ask about what can be improved or created to solve a problem or need.
* Do background research on possible solutions and the problem.
* Ask about the constraints, available materials, and safety requirements for the challenge.
Brainstorm possible solutions for the problem
*Try to come up with as many ideas as possible! Engineers’ first ideas are rarely their best ideas
*Draw labeled sketches of all of your ideas so you can communicate your thinking
Discuss pros and cons of your brainstormed designs with others
Select the design that will solve the challenge best within the given constraints
Draw a detailed diagram of how your model will be built and how it will work. Use arrows and labels to show all moving parts
Create:

*Choose the best solution to develop into a prototype (model)
*Build your model using the available materials
*Remember the design constraints when you build your model
Evaluate & rEfine:

* After you have tested your design, identify problems. Discuss what can work better with others.
* Brainstorm ways you can improve the design to fix the problems and make your model even better.
* Repeat the design process – it’s a cycle!