



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:

- *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

Design:

- *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!