

CONCEPT The engineering design process is a series of steps that engineers follow to come up with a solution to a problem. Many times, the solution involves designing a product (like a machine or computer code) that meets certain criteria and/or accomplishes a certain task.



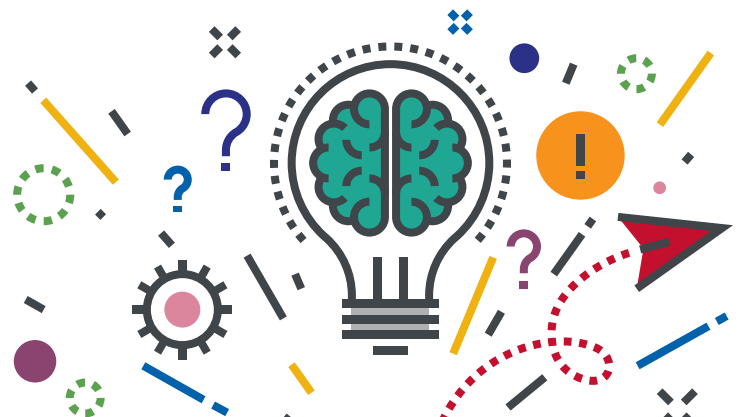
BACKGROUND

Modern engineering design and drafting can be traced back to the development of descriptive geometry in the 16th and 17th centuries. Drafting methods improved with the introduction of drafting machines, but the creation of engineering drawings changed very little until after World War II.

Patrick Hanratty and Ivan Sutherland contributed significantly on today's well-known Computer-Aided Design (CAD), as they consider it as a faster and more accurate tool compared to previous drafting methods.

REAL WORLD CONNECTIONS

- Writing
- Decision-making
- Designing
- DIY projects
- Working in group projects
- Planning dinner for the family



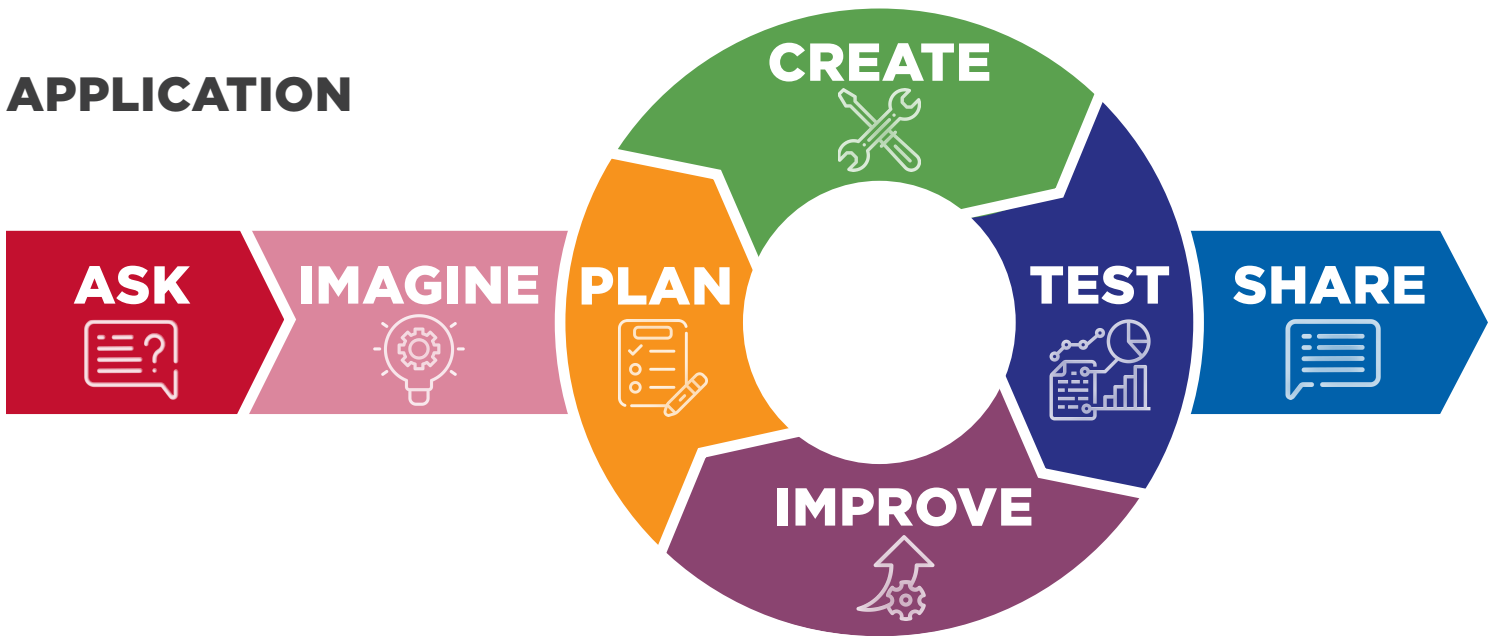
Make sure it measures up

EXAMPLES

STEPS OF THE ENGINEERING DESIGN PROCESS INCLUDE

1. Identifying the need and constraints
2. Researching the problem
3. Developing a possible solution
4. Selecting a promising solution
5. Building a prototype
6. Testing and evaluating the prototype
7. Redesigning as needed

APPLICATION



PROCESS

Engineers and scientists have different objectives; they follow different processes in their work. Scientists perform experiments using the scientific method, whereas, engineers follow the creativity-based engineering design process.

Scientists use the scientific method to make testable explanations and predictions about the world. A scientist asks a question and develops an experiment, or set of experiments, to answer that question. Engineers use the engineering design process to create solutions to problems. An engineer identifies a specific need: Who need(s) what because why?



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