

# DISCOVER ENGINEERING



## Integrating the Engineering Design Process into STEM Activities

As kids work through a challenge, use the information and questions below to tie their work to specific steps of the design process.

### Identify the Problem & Learn the Specs

The single most overlooked stage of the design process, knowing what problem you are trying to solve and what materials, constraints, and what goal you are trying to achieve will set you up for success.

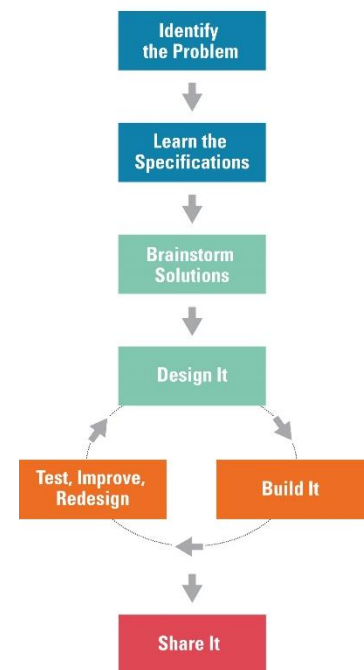
### Brainstorming

At this stage, all ideas are welcome, and criticism is not allowed.

- How creative can you be? Off-the-wall suggestions often spark great ideas.
- What are some different ways to start tackling today's challenge?

### Designing

- Time to get realistic. Talk through the brainstormed ideas.
- What's possible given your time, tools, and materials?
- What are some problems you'll need to solve as you create your solution?
- How can a sketch help clarify your design?



## **Building, Testing, & Redesigning**

- What materials will you need?
- Why is it a good idea to keep testing a design?
- What goal are you trying to achieve? How will you know if you have been successful?
- Why do you have to do something a few times before it works the way you want?
- It's not cheating to look at other kids' projects. What can you learn by looking at them?

## **Sharing Solutions**

- What do you think is the best feature of your design? Why?
- What are some things everyone's designs have in common?
- What would you do differently if you had more time?
- What were the different steps you had to do to get your project to work the way you wanted?

**Visit [DiscoverE.org](https://www.discovere.org) for more about the engineering design process and building a student's STEM identity.**