

DEFINING PROBLEMS

Designers begin by defining a problem. Defining the problem helps designers understand how to approach their challenge. What's your design challenge? Write it below!

MY DESIGN CHALLENGE IS:

GETTING IDEAS

One of the ways that designers come up with ideas is to brainstorm. This means that they come up with as many ideas to solve their problem as they can, no matter how crazy!

THINK ABOUT THIS!

1. How can you make your drinking object more comfortable to hold?
2. How could you change the shape or color of your object?
3. How could you change or add features to your object and why?

You can choose one of these elements to focus on or you can think about all three! Use the boxes below to write or draw your ideas. **Use one box per idea.**



ITERATION

To generate ideas while brainstorming, designers create many iterations of their designs. Iteration is the process of taking one idea and creating different versions of that idea. Pick your favorite idea from the previous page. Using a writing tool, use the space below to write or draw your **first** iteration.



ITERATION

Use the space below to write or draw your **second** iteration.



PROTOTYPING

A prototype is an early, visual model of an idea that helps designers to bring their ideas to life, share their design with others, and see what works. A prototype can be a visual model, but it can also be a comic strip or skit.

Let's explore an example from Cooper Hewitt's collection! How many different ways did the designer prototype below? Can you spot the differences?



Photo Panel, *Nine Ways to Use a Pitcher*, 2012; Designed by Leon Ransmeier (American, b. 1979); Photographed by Ransmeier Inc. (New York, New York, USA); Courtesy of the designer



STEP FIVE GATHERING MATERIALS

BEFORE YOU START:

If you would like to build a 3D prototype, get creative with what's around your home. Think about how you can use everyday materials in a **NEW** way to create your design.

NO MATERIALS? NO PROBLEM!

All you need is a piece of scrap paper, a writing tool, and your imagination. Grab your materials and get started! List or draw your materials in the space below.



TESTING & EVALUATION

Before a designer can launch their final design, they need to test it out to make sure that their design works. Use the space below to share more about your prototype.

WHAT DID YOU BUILD?

Make a note of your prototype here:

DIG DEEPER

What worked?

What could be improved?

