



# Create and Innovate

Somebody invented the seat belt. Another person figured out how to make water safe to drink. Other people thought up the telephone, the hammer, the sandwich, and the bicycle.

Makers use their imaginations to solve problems and build new things. They innovate or find new ways to solve problems. They can change the world, and you can, too!

## Steps

1. Create a solution
2. Make it function
3. Create for a community
4. Think bigger
5. Share your creation

## Purpose

When I've earned this badge, I'll know how to use the design thinking process to improve things I create for others.



# Words to Know

**Community-centered design:** When a maker works directly with users, involving them as equal partners in the process of identifying the problem, then creating and testing solutions.

**Design thinking process:** The steps makers take to solve problems and create things. They define the need, brainstorm solutions, design (make a plan), build, test, evaluate, redesign, and share.

**Feature:** Any part of an object that is useful, fun, or different from other similar items.

**Function:** What an object is meant to do or be used for. It's the object's goal or purpose.

**Innovate:** To make something better or try something new.

**Maker:** A person who makes or creates art or designs objects.

**Marketing:** To promote or sell a product with advertisements and other materials.

**Prototype:** A quick way to test an idea or show it to others. It can be a sketch or a model of an idea made with everyday materials like cardboard, paper, string, and rubber bands.

**User-centered design:** Creating something by focusing on what the user wants, needs, likes, and dislikes.



# Step 1: Create a solution

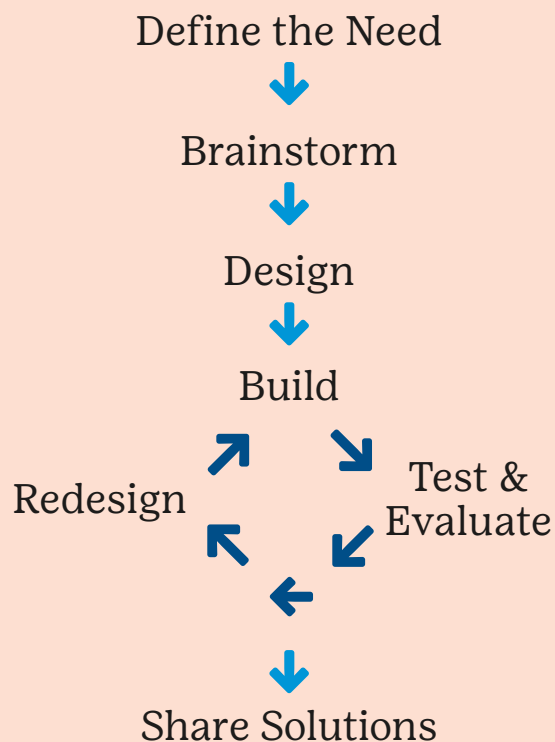
The world is full of inventions that make life easier. Think of sticky notes—they're small and helpful! Big inventions, such as electricity and wells for clean water, can also change human history.

All of these things started with an idea.

**Makers** use the **design thinking process** to turn ideas into reality. It's a set of steps to improve what you imagine and create.

And it all starts with a problem, inspiration, or a big idea!

## The Design Thinking Process



## Choices—do one:

**Start from scratch.** Sometimes you just have a “lightbulb moment” and an idea strikes! How could you change your daily life? What could you create to change the world? You could make it more fun. You could make life easier, safer, or more equal for people. Brainstorm ideas. Choose one and sketch your **prototype**.

**Find inspiration around you.** How do art and nature make you feel? Do current events motivate you? Search for inspiration. Are there any problems you can solve? What could you add to your world? Could you improve a local playground or library? Could you design a new accessory? Find something that inspires you to create. Then sketch your prototype.

**Improve something.** How could you update something to make life a little better? What if computers could charge themselves? What if sneakers never came untied? Choose something to improve. Brainstorm and sketch simple changes to make it even better. Change the color, size, or materials. Add new parts, such as pockets and handles.

► **For more fun:** Build a prototype. Prototypes save time and money because they're practice objects, not final products. Use your sketch and simple materials to test your idea.





## Step 2: Make it function

What an object is meant to do, or its purpose, is called its **function**. Whoever uses an object is the user—it could be a person, pet, or group of people. When makers include their user in the design thinking process, that's **user-centered design**. They might research or interview them to better understand the problem and how to solve it. They might have the user test what's made.

For an object to work, it needs certain parts. A bookbag's function is to carry things easily. It needs shoulder straps and space to hold books. Makers can also add **features**, such as a small front pocket or keychain, that a user may want, but the backpack doesn't need them to work.



### Choices—do one:

**Make something to help with organization.** People use all kinds of tools and gadgets to help them stay organized. They may have special calendars, bins to hold objects, or apps on their phones. Do you know anyone who could use help organizing their things or ideas? What could you make to help them? Sketch and create your idea. If you can, test it with your user.

**Make something to help with technology.** Tech can be fun and helpful, but it also comes with challenges. It can be easy to lose or break. It might need charging cords or earbuds. Choose a user. How do they use technology? What could you make to help them? Sketch and create your idea. Try to test it with them.

**Make something to help with another problem.** Choose a user, such as a fellow Girl Scout or family member. What do you know about them? How could you make their life a little easier? You might make a bag for their sports gear, a blanket for napping, or a creative way to relax. Choose one idea to sketch and create. If you can, share it with your user to find out what they think.





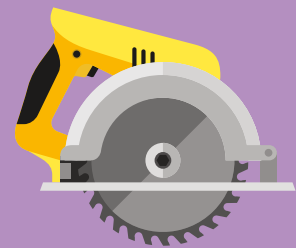
# Making Progress

Searching for inspiration from the past?  
Check out these women who changed the world with their creations.

**Madam C. J. Walker** was the first American woman to become a self-made millionaire. She created a product to help Black women protect and grow their hair. She also created new haircare products, cosmetics, and face creams.



**Tabitha Babbitt** lived in a community that made furniture. She noticed that the saw they used needed two people and only cut in one direction. She tinkered, changed the shape of the saw, and attached it to a spinning wheel, inventing the circular saw.



**Empress Leizu** lived in China around 2640 BCE. A legend says she discovered silk one day when a silkworm cocoon fell out of a mulberry tree into her teacup and began to unravel. She gathered more cocoons and wove the silk fibers into cloth.

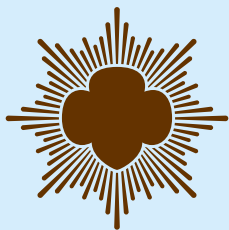
## Step 3: Create for a community

We're all part of communities, such as school and Girl Scouts. We're also in community with plants, animals, and the world. Together we create a global community or ecosystem. **Community-centered design** involves community members in creating solutions. Makers might survey, hold focus groups, or test prototypes with them. The community may also gather their own information and share their ideas.

Instead of focusing on the problem, community-centered design builds on the community's strengths, such as its skills and resources. This helps make sure that their needs and wants are reflected in what's created.

### Did You Know?

When Juniors team up to make a difference in their community, they can earn the **Girl Scout Bronze Award**—one of the highest awards in Girl Scouting.



Brainstorm how to involve the community and create a plan on the next page!

### Choices—do one:

**Create for people.** Choose a community, such as your family, school, or town. What do the community members care about? Could you help make the area safer or more welcoming? Maybe it needs more lights or better seating. Maybe a community bulletin board or cookbook would be useful. Learn about them and decide what to create. Involve the community in the process.

**Create for animals.** Choose a group of animals. Research how to enrich or improve their lives. What could they play with? Could you create a shelter? Talk to people who know about them. Decide what to create. Maybe you'll make a dog waste bag dispenser for the park or upcycle pet toys for rescue animals.

**Create for the planet.** Research problems our planet faces, such as pollution or climate change, and create something to help. Maybe you'll make DIY water filters or compost bins. Maybe you'll plant a butterfly garden. Learn about the people, animals, and plants involved. Talk to people who are part of the environmental and local communities throughout the process.



# Make with Community-Centered Design

**I am making for (Check one!):** ☐ People ☐ Animals ☐ The planet

The community I want to help is \_\_\_\_\_.

**First, learn from or about the community.**

My plan to include the community: \_\_\_\_\_

\_\_\_\_\_.

**Next, decide what to create.**

I am making \_\_\_\_\_ to \_\_\_\_\_.

*Object to create*

*Function*

**Community Needs and Wants:**

- 
- 
- 
- 

**Community Skills and Resources:**

- 
- 
- 
- 

**Parts and features:**

- 
- 
- 
- 

**Tools and materials:**

- 
- 
- 
- 

**Write and draw your ideas on another sheet of paper!**



# Step 4: Think bigger

Even a small idea can turn into something big! If an idea is a success, makers might think of other ways to help and use what they’ve made as a launch pad for other creations.

**Innovation** is when makers try something new or make something better. They might tweak what they’ve made for other users or make it in different colors or sizes. They might create a line of products with a similar goal. The next thing you know, they have a big business!



**Want to learn more about building your own business?** Check out the Business Jumpstart badge for Juniors!

## Choices—do one:

**Add product options.** How can you add options for something you’ve made in this badge? A shirt could come in multiple colors

and sizes. A notebook might have different covers and either dotted or lined pages. If you made seed balls, use different kinds of seeds. If you sewed a tote bag, try another fabric. Choose one creation and sketch your ideas for product options.

**Create a product line.** Products in a “line” build on the original product with new, similar products. When brainstorming what to create in this badge, did you have other ideas? Maybe you made posters to spread awareness about rescue animals and want to help an animal shelter. Perhaps you made a community newsletter and want to build a community website. Choose one creation and sketch other products for your line.

**Innovate for new users.** Could your creation help others? Simple innovations can make a product useful in different situations. Choose one creation and a new user. Maybe younger kids or senior citizens? If it was for your troop, can you make it work for a sports team? If it’s for dogs, what about cats? Explore your new user’s needs and wants. Then sketch your innovations.

**► For more fun:** Build your next product. Use your sketch, tools, and materials to build your new or improved product. If you want, keep going, create more, and continue to build your business!

Start to build your business on the next page! ➡



# Prepare to Launch

My business name is \_\_\_\_\_.

## Products

What do you create?

What else could you create?

## User and Target Audience

Who is your user(s)?

People you want to be your users are your target audience. Who else could you create for?

## Brand Personality

What's a short, catchy phrase or slogan for your business?

Draw a logo, or small picture, to show others your business.

## Business Plan

What's the goal for your business?

How can you advertise and sell what you make?

# Making Changes to Make a Difference

In 1889, Jane Addams and Ellen Gates created Hull House in Chicago. It was a resource center for working-class people, particularly newly arrived immigrants from Europe. Jane and Ellen wanted to help people learn about literature and access art, such as music and theater. But then something interesting happened—the community asked for different kinds of help to adjust to living in the United States. Jane and Ellen listened and

added English language and American government classes, as well as sewing and cooking. Over time, Hull House added a preschool, kindergarten, community kitchen, and playground!

When Jane and Ellen included the community, they made them equal partners in creating Hull House. Now, what else can you create for good? How can you empower others to solve community problems?



## Step 5: Share your creation

You've just turned some good ideas into reality! The making doesn't end here, though. There's always room to improve and innovate what you've made. When you share your work with others, you get to hear their ideas. Experts can share their skills and experience. Users can tell you how well your creation works for their needs. People you teach might also have new ideas.

If you want to sell your product, you might share it by marketing. **Marketing** is sharing with others why they would want or need to buy a product. A marketing campaign includes several ways to spread the word, such as ads, events, or social media posts.

### Choices—do one:

.....  
**Present it.** Have you ever heard the saying, “Two heads are better than one”? Choose one creation to share with your user or an expert. Ask them to use what you've made and share their opinion. Listen carefully to their comments and feedback. Take notes. Afterward, sketch any changes or new ideas.  
.....

**Teach it.** You can learn a lot from teaching others. Choose one creation and whom to teach, such as your family or friends. Decide where and how to teach, such as at school, a maker event, virtually, or through writing. You might host a workshop, make a video, or create an instructional booklet. After, sketch



any changes or new ideas that were sparked from teaching.

.....  
**Market it.** When makers want to sell their creations, marketing helps get the word out! Choose one creation. How can you show it to others in an exciting way? Which type of marketing would work best for your target audience? Plan and create your idea. Make a magazine ad or a poster. Create a video or slideshow. After you share, sketch any changes or new ideas for your product or business.  
.....

► **For more fun:** Innovate your creation. Maybe you have an idea to make it work better for your user or to fix a problem. Use all you've learned to improve your creation or build your business.





Made possible by Stanley Black & Decker.

TM ® & © 2023 Girl Scouts of the United States of America. All rights reserved.

No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic or mechanical methods, including photocopying, recording, or by any information storage or retrieval system, now known or hereinafter invented, without the prior written permission of Girl Scouts of the United States of America (GSUSA), except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law. For permissions requests, write to GSUSA at the address below or visit the [www.girlscouts.org](http://www.girlscouts.org) website to access permission request forms.

First published in 2023 by Girl Scouts of the United States of America  
420 Fifth Avenue, New York, NY 10018-2798  
[www.girlscouts.org](http://www.girlscouts.org)

