

Inventor

Brownie *World of Girls* badge

Do you ever wonder what it takes to come up with a new kind of phone or a new way to power a lightbulb? Would you like an invention that would help tie your shoes faster or one to make elevators record your singing while you ride? In this badge, find out how inventors make stuff – and become an inventor yourself!

Steps

1. Warm up your inventor's mind
2. Find lots of ways to solve the same problem
3. Make a needs list
4. Solve a problem
5. Share your invention

Purpose

When I've earned this badge, I'll know how to think like an inventor.

Every step has three choices. Do ONE choice to complete each step. Inspired? Do more!

INNOVATIONS! These are examples of innovations that use existing objects in new ways:

- A blanket can be used to keep you warm or to make a fort
- A jar can be used to hold pickles or can be recycled into a pencil holder
- A cardboard box can hold fruit for shipping or become part of a robot costume
- A spatula can flip pancakes or be a wizard's wand for a play
- Tuna fish cans can be melted down into a new bicycle frame
- Plastic milk jugs can be turned into park benches or picnic tables

TIP BEFORE TAKEOFF Inventors can have great ideas at any time – so they always keep notebooks with them! While you're earning your Inventor badge, try keeping your own invention notebook. Inside, write down all your amazing ideas.

Step 1 Warm up your inventor's mind

Inventors warm up their minds so they can be creative! One way to do that is to find different ways to use things. If you've ever found a new way to use a tool or toy, you're already an inventor! In this step come up with new uses for things that already exist.

CHOICES – DO ONE:

Make up five new uses for a box. You could use a box to store your toys, build a playhouse, make a hat or create a bed for your pet. Don't be afraid to think of something wacky and unusual. Sometimes the crazy ideas are the best ones!

OR

Come up with fun and different things you can make from circles. Draw 20 circles on a paper. In each circle draw something different you can make with a circle. Take five minutes (time yourself or have an adult time you) to draw as many as you can.

FOR MORE FUN: Use markers to decorate your circles!

OR

Find five new ways to use or play with a tool or a toy. It could be a ball, a headband, a toothbrush, or an old sock.

More to Explore

Brain Warm-up Game!

Just like dancers and athletes warm up their muscles before they perform, inventors warm up their bodies and their minds so they can come up with great ideas. Try this exercise:

1. Gather your group in a circle.
2. The first girl jumps into the middle of the circle and strikes a pose.
3. The second girl jumps into the circle and copies the first girl's pose. Then, she makes one change to the pose - like raising an arm or bending a leg.
4. The first girl goes back to join the rest of the girls in the circle.
5. The third girl jumps in the middle. She copies the new pose, and makes her own change. Now, the pose might look totally different from the way it started.
6. The second girl goes back to join the rest of the girls in the circle.
7. Repeat this until every girl has had a turn. The pose keeps growing and changing, so you can keep playing if you're having too much fun to stop!

Step 2 Find lots of ways to solve the same problem

There's more than one way to solve most problems. Sometimes we stick with the same way of doing something just because we're used to it. Pick one choice below and make a list of 10 ideas. Then, try two of them.

CHOICES - DO ONE:

Making music. You could whistle, tap chopsticks on the table, or bang pots and pans together. What other creative ways could you make music?

OR

Carrying lunch. You might put your lunch in a box. You could, also, mail it.

OR

Watering plants. To water a plant, you could pit it outside and wait for it to rain, or cut a hole in a plastic bag and fill it with water. How can you water plants from their bottom?

Inventions for EATING

Around the world, people use different tools to eat their meals. In the United States people use forks, knives, and spoons. In China, people use chopsticks. In the Middle East, people use bread.

Step 3 Make a needs list

To come up with new ideas, inventors have to see and understand people's needs. Now, it's your turn to make a "needs list." Pick one of these activities and watch a friend, family member, or a Brownie sister doing it. What is hard for them? What do they like or not like about ht activity? Write down five needs you notice about the activity you picked.

Getting-Ready-for-School Needs List

- My alarm clock is too loud
- My cereal spills every time I pour it.
- My shoelaces take a long time to tie.
- The bus stop is too sunny.
- My backpack slips off my back.

CHOICES - DO ONE:

Mornings. Watch a brother, sister, or a parent get ready for school or work. Do they wake up on time? Is their alarm clock loud enough? Is there enough time to eat breakfast?

OR

Lunch at school. Watch how lunch happens in the cafeteria at school. Are the lines long? Are the chairs too high or too low? Are the sandwiches soggy or dry?

OR

Brownie meetings. They're always fun - now imagine what could make them even better! Does every girl feel included? Can everyone hear each other? Do meetings feel special?

Women Inventors

Check out these amazing inventions created by women.
Maybe the next great invention will be yours.

- Need:** When it rains, I can't see out of my car windshield.
Invention: Mary Anderson came up with an invention in 1903 that is still used today – the windshield wiper!
- Need:** Nurses and doctors have to turn on lights and wake up patients to read their charts.
Invention: Rebecca Shroeder invented the Glo-sheet when she was **10 years old**. The Glo-sheet is a special type of paper that glows in the dark and is used for hospital charts.
- Need:** I love bacon, but the grease isn't healthy for me to eat.
Invention: Abigail Fleck was **eight years old** when she came up with the idea for the Makin Bacon® dish. The dish is used to cook bacon in a healthier way.
- Need:** I don't like vacuuming.
Invention: Helen Greiner invented the Roomba® robot vacuum, which can vacuum a room on its own.
- Need:** Police officers have a dangerous job.
Invention: Stephanie Kwolek is the inventor of Kevlar®. This material is used in special vests that protect police officers from bullets.
- Need:** I want my baby to feel safe and close to me when we go out.
Invention: Ann Moore invented the Snuggly® baby carrier. She was inspired by watching mothers in West Africa carry babies in slings close to their bodies.
- Need:** My Crocs are comfy but they could use some decorations.
Invention: Sheri Schmelzer and her three daughters invented Jibbitz™, charms that could decorate Crocs footwear. In 2006 the Crocs company purchased her idea for \$10 million.
- Need:** I'm having trouble with math.
Invention: Jennifer Tuttle is the inventor of Multiplication Madness a kit that uses music to help kids improve their math skills.

Step 4 Solve a problem

Pick one of the problems from your “needs list” and think of ways to solve it. Use one of these activities to record your ideas (and keep notes in your inventor’s notebook).

Words

Worth Knowing

BRAINSTORM means to think of lots of ideas - even if they're wild and crazy - without judging them.

CHOICES - DO ONE:

Mind-map. Inventors use mind maps to see how different ideas fit together. Try it out on the next page. Draw a circle. Put your “needs list” problem in this circle. Then, add more circles around the middle circles. In those circles, write your ideas for how to solve your problem.

OR

Sketch it out. Draw five solutions in your inventor’s notebook.

OR

Buddy up and brainstorm lots of ideas! With partners or your Brownie group, write down everyone’s ideas on a big sheet of paper. Then, record your five favorites in your notebook.

Brainstorming TIPS

Whether you’re coming up with ideas with a friend or by yourself showing respect toward yourself and others can help make your ideas even better. Here are some things to remember to practice when brainstorming:

- Welcome all ideas
- Build on each other’s ideas
- Encourage wild ideas
- Wait until the session is over to judge ideas

Step 5 Share your invention

Finding out what others think about your idea will help you improve it. Do one of the choices, and, then, share what you did with others. Ask them to tell you their favorite part about your idea, and how they think it could be even better.

CHOICES - DO ONE:

Draw it! Use a big sheet of paper, and label the parts of your invention. Show it to friends and family.

OR

Act it out! Create a skit that shows when someone might need your invention and how they'd use it. Then, perform it!

OR

Build it! Use cardboard paper, glue, Play-Doh or even dried pasta to build a model of your invention. Then, show it off!

Add the Badge to Your Journey

Check out Grandma Elf's innovative bookmobile and all the different inventions inside it! You could try inventing something to make it even easier for Brownie friends to share their favorite stories.

Now that I've earned this badge, I can give service by:

- Brainstorming ways to make my Girl Scout meetings even more fun
- Creating something that will help my teacher in the classroom
- Inventing a helpful item for my family

I'm inspired to: