

Inventor

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? Being cooped up in the house is the perfect time to invent new ways to have fun. For 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.

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!
 - Check out [this video](#) on fun things to do with a cardboard box.
- **Come up with fun and different things you can make from circles.** Use the circle template on the next page. Take five minutes to draw as many as you can.
 - For more fun: use markers to decorate your circles!
- **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.

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!

Inventor

Choices:

- **Making music.** You could whistle, tap chopsticks on the table, or bang pots and pans together. What other creative ways could you make music?
 - For more fun: create a family band and even try writing your own songs!
- **Watering plants.** To water a plant, you could put it outside and wait for it to rain or cut a hole in a plastic bag, fill it with water, and use it to water the plant.
- **Cosmetic creations.** Beauty doesn't have to be bought at the store, sometimes you can make it. There is Kool Aid hair dye, and lip balm out of bee's wax! Think of other ways to create beauty products at home. For some inspiration check out these videos below.
 - DIY Lip Balm: <https://youtu.be/p3aGGwhM0RQ>
 - Kool Aid: <https://youtu.be/3J0ASG492LE>

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 or remember a family member doing it. What is hard for them? What do they like or not like about the activity? Write down five needs you notice or remembered about the activity you picked.

Choices — do one:

- **Mornings.** Watch a brother, sister, or a parent start their day. Do they set an alarm at a certain time? Is their alarm clock loud enough to wake them up? Do they cook breakfast? Do they cook breakfast for everyone?
- **Work or school.** Due to the spread of COVID-19 everyone has been stuck in their homes. However, we still have to work or go to school. Observe yourself, your siblings, and your parents to see how this change has affected everyday life. Does someone help you with school? Are your parents' work hours still the same?
- **Online Brownie meetings.** They're always fun but now they might be online! What does this process look like for you? What does your troop need to make online meeting successful?

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 (keep notes in your inventor's notebook!).

Choices — do one:

- **Mind map.** Inventors use mind maps to see how different ideas fit together. Look below to see a template or get really creative and create your own!

Inventor

- Check out [this short video](#) on how to mind map.
- **For more fun:** You can create a mind map online go to [this link](#).
- **Sketch it out.** Draw five solutions in your inventor's notebook.
- **Buddy up and brainstorm.** With your family, write down everyone's ideas to make staying at home fun or more productive. Then record your five favorites in your notebook.

Step 5: Share your invention

Finding out what others think about your idea will help you improve it. Do one of the choices, 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.
- **Act it out!** Create a skit or commercial that shows when someone might need your invention and how they'd use it. Then perform it! Think of the infomercials you've seen on T.V. Check out a link to this one below.
 - [ShamWow Commercial](#)
- **Build it!** Use cardboard, paper, glue, Play-Doh, or even dried pasta to build a model of your invention. Then show it off!

We would love to have you share your inventions with Girl Scouts of Central Indiana! Send a picture of your invention or the commercial you made to Jory Sejdiu at jsejdiu@girlscoutsindiana.org.

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

- Brainstorming ways to make my Girl Scout meeting even more fun.
- Creating something that will help my community.
- Inventing a helpful item for my family.

Words to know:

- **Infomercial:** A television program or video that promotes a product or invention in an informative way.
- **Brainstorm:** To think of lots of ideas—even if they're wild and crazy—without judging them.
- **Inventor:** A person who creates a new object or way of doing thing.
- **Innovations:** a new method, idea, or product.

Inventor

Innovations

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

- A blanket can be used to keep you warm or 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.
- Cans can be melted down into a new bicycle frame.
- Plastic milk jugs can be turned into park benches or picnic tables.

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

Extras

- **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.

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 person jumps into the middle of the circle and strikes a does a short dance move. Then rejoins the circle.
3. The second person jumps into the circle and copies the first person's dance move. Then makes up their own dance move and then returns to the circle.
4. The third person will then jump into the circle and do the dance move of the fist and second person. Then will add on their own dance move.
5. This process is repeated going around the circle until one person forgets or messes up a dance move.

Inventor

Women inventors

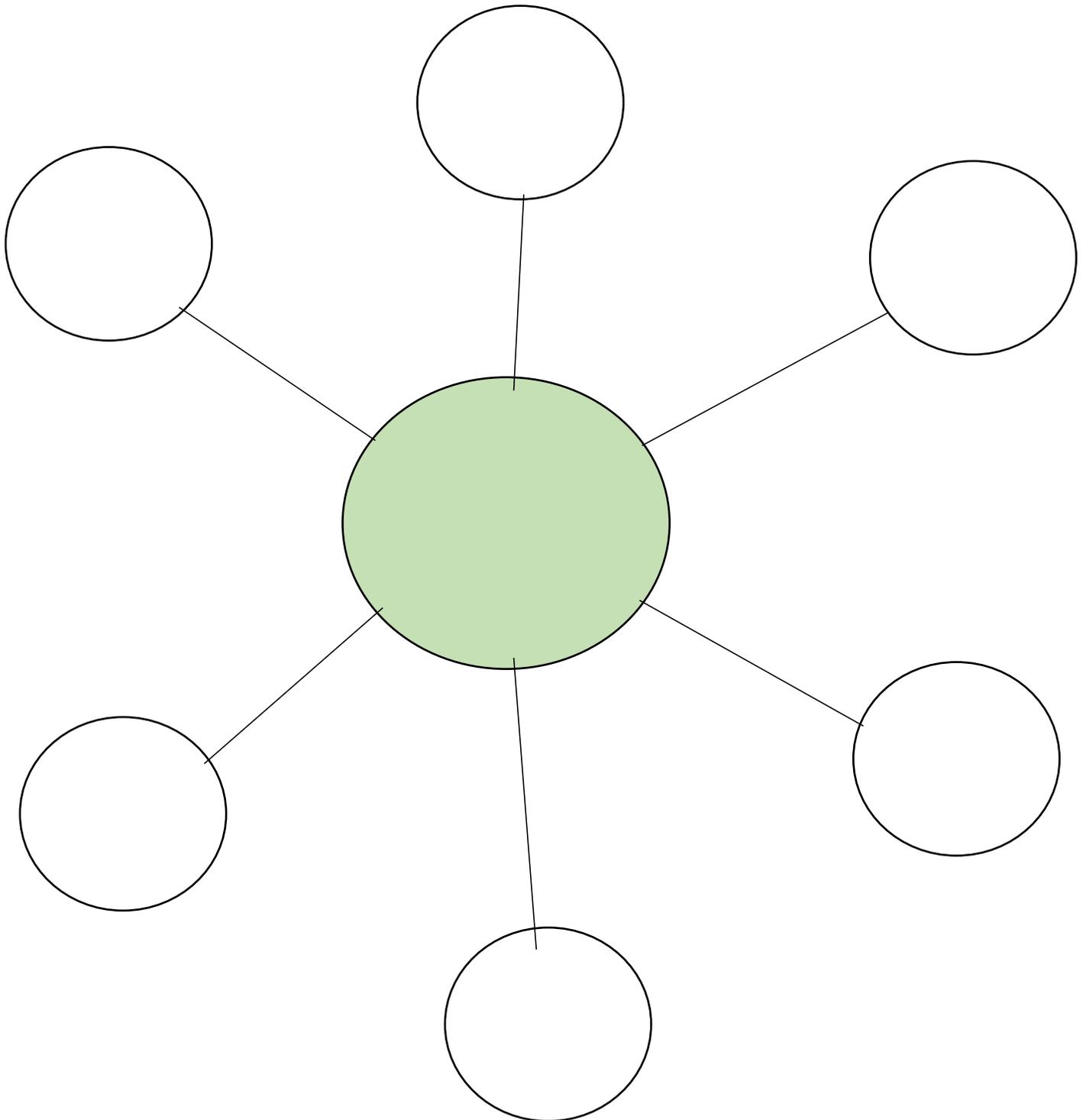
Check out these amazing inventions created by women. Maybe the next great invention will be yours!

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

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Mind Map template

Put your “needs list” problem in the middle and your ideas for how to solve it in the outer circles. Draw more circles or add more paper if you have more ideas!



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Think in circles:

Make the circles into anything you imagine!

A 5x4 grid of 20 empty circles, arranged in five rows and four columns. Each circle is a simple black outline, intended for a drawing activity.