



Brownie Inventor Badge Activity Plan 2

Purpose: When girls have earned this badge, they'll know how to think like an inventor.

Planning Guides Link: Science, Technology, Engineering and Math

Fun Patch Link: Inventions

Activity Plan Length: 1.5 hours

Involve Family and Friends: Participation from family and friends can enrich your troop's Girl Scout experience, both for the girls and for you. Use the suggestions below to make it easier for you to connect with additional support.

- Before the meeting:
 - Send a note to families to find those with interest in or expertise with the topic. Ask them to lead or support an activity or two, or even lead the whole meeting.
 - Offer this activity plan as a starting place and point out that they may choose alternative activities using the *Customize It!* section as a guide. For example: If an activity plan directs girls to sit outside and observe animal habitats, you may choose to go to the zoo and learn about animal habitats there instead.
- At home:
 - Encourage families to ask questions about their girls' badge activities. Some examples that work for any badge include: What did you learn? What surprised you? What does it make you think of trying next?
- Throughout the year:
 - Suggest to families ways that girls can share or display their Girl Scout accomplishments. Possibilities include a bulletin board, a scrapbook, a special memories box or family sharing time.

Girls Take the Lead: Include girl leadership through long-term planning, short-term meeting prep and specific activities at meetings.

- Long Term Planning
 - If you use "Plan Your Brownie Year", share this with the girls at the start of the year. Have them ask friends and family to help out with specific meetings or activities. Let the girls brainstorm ways to make the plans their own, such as thinking of related field trip activities. If a girl has experience with a field trip, ask her to be assistant tour guide.
 - If you are adapting the "Plan Your Brownie Year", get the girls' input on which badges to choose. Offer just a few choices in each category or timeframe to make decisions easier. Every girl should have at least one badge or journey she's excited about.
- Short Term Planning
 - Ask a family to help lead a badge. Make sure they have access to activity plans and any resources you might have. Keep additional requested materials to a minimum.
 - Choose two helpers to stay after a meeting for 15 minutes. Give them each an activity to introduce and either instruct or help guide at the next meeting.
 - Before a meeting, ask everyone to vote on some aspect of the activity: draw posters or perform skits, open with a song or game, etc.

- Use a rotating list of helper tasks, called a 'kaper chart', to share responsibilities. Examples include acting as emcee of the meeting, leading an opening game, bringing a snack next meeting or taking attendance.
- At the Meeting
 - During the opening, have 1-2 girls share their answers to a get-to-know-you question.
 - Have girls fulfill their kaper chart responsibilities.

Try to find something in each activity that you can let girls decide or manage.

Customize It: If your group wants to expand work on this badge or simply try different activities, go for it! There are many ways to earn this award, including: completing the activities as listed in the Brownie Skill-Building Badge set for *It's Your Story—Tell It!*, completing two of these activity plans, attending a council-sponsored event or customizing activities. Pick the one(s) that work best for your group. Girls will know they have earned the award if:

- They can imagine familiar items in a new context
- They have tried multiple solutions to address a problem and evaluate their success
- They have shared what they learned and listened to new ideas from others

Tips and Tools

- Check out ways to stay safe using Safety-Wise at <http://gsrv.gs/safetywise>.
- Ensure that your activities are accessible to everyone. Ask in advance if any special accommodations need to be made. If you have questions regarding specific adaptations, please contact River Valleys at 800-845-0787.

Resources

- PBS ZOOM: www.pbskids.org/zoom
- This activity plan has been adapted from the Brownie Skill-Building Badge set for the *It's Your Story—Tell It!* Inventor Badge, which can be used for additional information and activities.

Getting Started

Time Allotment: 15 minutes

Materials Needed:

- Optional: Girl Scout Promise and Law printed out on poster board

Steps:

- Welcome everyone to the meeting.
- Recite the Girl Scout Promise and Law. Use repeat-after-me or say it as a group if girls know it by heart.

Girl Scout Promise	Girl Scout Law
<i>On my honor, I will try:</i> To serve God and my country, To help people at all times, And to live by the Girl Scout Law.	<i>I will do my best to be</i> honest and fair, friendly and helpful, considerate and caring, courageous and strong, and responsible for what I say and do, <i>and to</i> respect myself and others, respect authority, use resources wisely, make the world a better place, and be a sister to every Girl Scout.

- Sing the Brownie Smile Song. Use repeat-after-me or sing as a group if girls know it by heart.

The Brownie Smile Song
I've got something in my pocket It belongs across my face I keep it very close at hand In a most convenient place I'm sure you wouldn't guess it If you guessed a long, long while So I'll take it out and put it on It's a great big Brownie Smile!

Activity #1: What's in a Circle?

Badge Connection: Step 1—Warm up your inventor's mind

Time Allotment: 5 minutes

Prep Needed:

- Make Copies of the "Circles" worksheet (1 per girl)

Materials Needed:

- Circles worksheets
- Coloring utensils

Steps:

1. Pass out a worksheet to each girl. Explain to the girls that we are going to do a quick mind warm up again to get them thinking creatively. Tell them that they have two minutes to make pictures out of all the circles on the worksheet. They can make any pictures they want as long as they use a circle as part of each drawing.
2. Give the girls about two minutes to draw. When they are done, they can walk around the room and share their drawings with each other.

Activity #2: Plan it Out

Badge Connection: Step 4—Solve a problem

Time Allotment: 10 minutes

Prep Needed:

- Gather materials and supplies.

Materials Needed:

- Scratch paper
- Pencils with erasers
- A few small pieces of garbage
- Various materials from around the house or meeting space that could be used to build a mechanical grabber, like: sticks or wooden dowels, plastic pipe or tubing, wire hangers, string, rubber bands, pipe cleaners, duct tape, scissors. Be creative when choosing items, but be sure it's something the girls can work with for their project.

Steps:

1. Ask girls if they've ever helped their community by picking up trash. Maybe they've even done it with Girl Scouts. Explain that they're going to design a mechanical grabber to keep their hands clean while picking up trash using only the items they see in front of them. Before they can build it, they have to design it!
2. Have the girls look at the objects they have available and work in small groups to design a mechanical hand to help them pick up trash. If possible, separate the groups slightly so they can't hear each other, but remind them that they will all have to share materials.
3. As the girls are designing, you can use some prompt questions to help them. Be sure not to give them answers or ideas, just to help them think up their own.
 - What pieces could you use to help reach?
 - What pieces could grab?
 - What could connect pieces together?
 - How can to make the pieces move without touching them? Do you have any items you could use to help you?
 - What kind of garbage are you picking up? Does that matter?
4. Have the groups draw their designs on the paper. They should not be building at this phase.

Activity #3: Create Your Invention

Badge Connection: Step 5—Share your invention

Time Allotment: 30 minutes

Prep Needed:

- None

Materials Needed:

- All materials from previous activity

Steps:

1. If possible, split the groups of girls into separate rooms or areas. Have them take the items they're using for their grabber with them.
2. Explain to the girls that they are now going to build their invention they designed. They may need to make some changes as they go and problem solve.
3. Help the girls build only if they need it. If girls finish early, have them try to make improvements to their invention.

Activity #4: Snack Chat

Badge Connection: Step 5– Share your invention

Time Allotment: 15 minutes

Steps:

1. While enjoying snack, have the girls share their grabber inventions. Here are some things for girls to talk about.
 - What was your thought process while designing your grabber?
 - Did you get your grabber to work? If not, what improvements could you make so it would work?
 - Is your final product the same as your design or did you make changes?
 - What building item or material do you wish you had, but didn't?
 - What building item or material didn't you use?

Wrapping Up

Time Allotment: 15 minutes

Materials Needed:

1. Optional: Make New Friends printed on poster board

Steps:

2. Instruct girls to get into a Friendship Circle. Have girls stand in a circle and cross their right arms over their left, holding hands with the person on each side of them.
3. Sing "Make New Friends."

Make New Friends		
Verse One	Verse Two	Verse Three
Make new friends, but keep the old. One is silver, the other is gold.	A circle is round, it has no end. That's how long, I will be your friend.	You have one hand, I have the other. Put them together, We have each other.

4. After the song, ask everyone to be quiet.
5. Assign one girl to start the friendship squeeze by gently squeezing her neighbor's hand with her right hand. Then, that girl squeezes with her right hand. One by one, each girl passes the squeeze until it travels around the circle. When the squeeze returns to the girl who started, she says "Goodbye Sister Girl Scouts" and the girls unwrap and face outward instead of inward.
6. Optional: Have girls make a wish after their hand has been squeezed and before they pass the squeeze along. Girls can also put their right foot out into the circle when they receive the friendship squeeze, so that everyone can see it travel along the circle.

More to Explore

Field Trip Ideas:

- Attend a regional engineering competition, such as FIRST Robotics or FIRST Lego League, or invite a local high school team to visit with your troop or service unit. Teams must do outreach in order to participate, so you would be helping them as well.
- Visit a hardware or home repair store and look at the tools. Find tools you haven't seen before and make some guesses before asking about their actual use.

Speaker Ideas:

- Invite someone who works in research and development to talk about how they design new products and come up with product ideas.
- Invite someone who works in quality control about how they keep products safe and improve them.

Suggestions

Do you have any suggestions to improve this activity plan? Do you have ideas for other possible badge-earning activities? Please email troopsupport@girlscoutsrv.org.

Family Follow Up Email: Use the email on the next page as a template to let families know what girls did at the meeting today. Feel free to add additional information, including:

- When and where you will be meeting next
- What activities you will do at the next meeting
- Family help or assistance that is needed
- Supplies or materials that girls will need to bring to the next meeting
- Reminders about important dates and upcoming activities

Hello Girl Scout Families:

We had a wonderful time today designing and making inventions and we earned the Inventor Badge.

We had fun:

- Making different drawings out of circles.
- Designing and building our own mechanical grabbers.

Continue the fun at home:

- Research online to find out what inventions were created by women.
- Try making a different invention from items around your house.
- Look through the *Girl's Guide to Girl Scouting* with your Brownie to find other activities you can try at home.

Thank you for bringing your Brownie to Girl Scouts

Circles Drawing Worksheet

