

BROWNIE INVENTOR BADGE – MEETING 2

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

Activity Plan Length: 1.5 hours

Time	Activity	Materials Needed
15 minutes	Getting Started <ul style="list-style-type: none"> Girls recite the Girl Scout Promise + Law and sing the Brownie Smile song. 	<input type="checkbox"/> (Optional) Girl Scout Promise and Law poster <input type="checkbox"/> (Optional) Brownie Smile song lyrics poster
5 minutes	What's In a Circle? <ul style="list-style-type: none"> Girls will test their creativity while drawing and coloring. 	<input type="checkbox"/> Circles worksheet (one per girl) <input type="checkbox"/> Coloring utensils
10 minutes	Plan It Out <ul style="list-style-type: none"> Girls brainstorm how to build a mechanical grabber. 	<input type="checkbox"/> Scrap paper <input type="checkbox"/> Pencils with erasers <input type="checkbox"/> 3-4 small items to pick up with the grabber <input type="checkbox"/> Sticks or wooden dowels about ¼" long <input type="checkbox"/> Plastic pipe or tubing about 1" long <input type="checkbox"/> Wire hangers <input type="checkbox"/> String <input type="checkbox"/> Rubber bands <input type="checkbox"/> Duct tape
30 minutes	Create Your Invention <ul style="list-style-type: none"> Girls build the mechanical grabber and brainstorm possible improvements. 	<input type="checkbox"/> Materials from previous activity
15 minutes	Snack Chat <ul style="list-style-type: none"> Girls enjoy snack and discuss their invention and the design process. 	<input type="checkbox"/> Healthy snack
15 minutes	Wrapping Up	<input type="checkbox"/> (Optional) Make New Friends song lyrics poster

Getting Started

Time: 15 minutes

Materials Needed: (Optional) Girl Scout Promise and Law poster and (optional) Brownie Smile song lyrics poster

Welcome everyone to the meeting, recite the Girl Scout Promise and Law, and sing the Brownie Smile song.



Activity #1: What's In a Circle

Time: 5 minutes

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

Materials Needed: Circles worksheet (one for each girl); coloring utensils

Prep Needed:

- Print copies of the Circles worksheet.
1. Pass out a worksheet to each girl. Explain to the girls that they're going to do a quick warm up to get their minds ready to think 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

Time: 10 minutes

Badge Connection: Step 4 — Solve a problem

Materials Needed: Scrap paper; pencils with erasers; 3-4 small items to pick up with the grabber; sticks or wooden dowels about ¼" long; plastic pipe or tubing about 1" long; wire hangers; string; rubber bands; duct tape

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

Time: 30 minutes

Badge Connection: Step 5 — Share your invention

Materials Needed: Materials from previous activity

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

Time: 15 minutes

Badge Connection: Step 5 — Share your invention

Materials Needed: Healthy snack

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: 15 minutes

Materials Needed: (Optional) Make New Friends song lyrics poster

Close the meeting by singing Make New Friends and doing a friendship circle.

More to Explore

- Field Trip Ideas:
 - Visit the science museum to discover how things work and learn about different inventions.
 - 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.



Circles Worksheet

