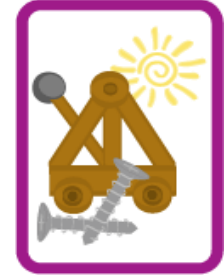




# DESIGN TIME

A GS NORCAL COUNCIL'S OWN BADGE PROGRAM

CADETTES, SENIORS & AMBASSADORS  
TO INTRODUCE GIRLS TO CUSTOMER-DRIVEN  
ENGINEERING



## PURPOSE

There's a lot of behind-the-scenes work that goes into "the next big toy." This Badge will give you a chance to discover those secrets as you learn about the design process. After you finish this Badge, you'll have a whole new perspective on how your favorite toy is made.

## REQUIREMENTS

Choose two activities from the five in each category and one more from a category of your choosing to earn the award. Be sure to answer the reflection and evaluation questions at the end.

An asterisk at the end of the activity indicates when the activity can be completed through the Girls go Techbridge Design Time Program Box available at your local council office. As of 2009, Girl Scouts of Northern California, Girl Scouts of Central Texas, Girl Scouts of Central Maryland, and Girl Scouts of West Central Florida have sets of these Girls Go Techbridge Program Boxes.

All members of Girl Scouts of the USA are eligible to earn the Design Time Badge.

The Design Time Badge is an official award and should be worn on the front of the vest or sash.

## ORDER INFORMATION

To order the Design Time Badge please visit [www.girlscoutsnorcal.org](http://www.girlscoutsnorcal.org) and purchase the items online. Please note that shipping and handling will be added to all online orders.

Members of Girl Scouts of Northern California will not be charged for shipping and handling if they use the GS NorCal Council's Own Order Form and have badges shipped to the closest GS NorCal store in their area for members to pick up.

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# DESIGN TIME BADGE FOR CADETTE, SENIOR & AMBASSADOR GIRL SCOUTS

## GSLE OUTCOMES AND INDICATORS

1. Gain practical life skills - Girls will be able to use the design process
2. Develop critical thinking - Girls will be able to come up with new uses for old things
3. Develop a strong sense of self - Girls will understand the influence of advertisements and be able to utilize them to market their own product
4. Feel connected to their communities - Girls will learn about design careers in their area
5. Develop healthy relationships - Girls will be able to identify another's wants and needs and create something tailored to that individual or group.
6. Advocate for themselves and others - Girls will write letters to toy companies outlining what they like and dislike in particular products on the market

## SET UP AND SUPPLIES (MOST SUPPLIES ARE IN THE DESIGN TIME PROGRAM BOX AVAILABLE AT YOUR LOCAL GIRL SCOUT OFFICE)

### *Discover*

1. Pencil, scratch paper, popsicle sticks, skewers, rubber bands, spools, small cups, small soft balls, scissors, hot glue guns and glue sticks, internet
2. A few small household objects
3. Toys with movable parts, screwdriver, cup (to hold loose screws)
4. Several toys, active imaginations
5. Internet or library, construction paper, scissors, clay, masking tape, cardboard, popsicle sticks, rubber bands, pipe cleaners, hot glue guns and glue sticks, markers, and anything else that might help you build a toy

### *Connect*

1. Computer, toy store or toy selection
2. Popsicle sticks, craft wire, pipe cleaners, hot glue guns and glue sticks, dish soap, glycerin, water, measuring spoons and cups, pencils and scratch paper, mixing bowls or cups, stirring sticks, markers, construction paper, cardboard, tape, jars, scissors
3. Pencils, scratch paper, hot glue guns and glue sticks, scissors, canvas bags, assorted fabric, ribbon, buttons, felt, Velcro, permanent markers
4. Graph paper, pencils, erasers, barriers to shield your partner's view of your drawing

### *Take Action*

1. Pencils, paper, envelopes, stamps
2. Poster Board, markers, tape, glue sticks, construction paper
3. News papers, magazines, or computer, pencils, paper, envelopes, stamps
4. Dependent on project

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# DESIGN TIME BADGE FOR CADETTE, SENIOR & AMBASSADOR GIRL SCOUTS

## DISCOVER

1. Try your hand at being a designer by designing and building a mini catapult for launching small balls. Use the internet to find out what the engineering design process is and evaluate the steps that you go through when you build your catapult to see how they compare with the design process. Once completed, evaluate your catapult and redesign it to increase the distance your catapult can shoot the ball. Were you successful?

*\*Design Time Catapult Activity*

*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Make sure girls understand what a catapult is. Allow the girls to have enough time to re-design their catapult to work better. Discuss how the design process gives working points to help the girls know what to do next.*

2. Do you ever wonder how designers come up with new ideas? More likely than not, they start off with a brainstorming session. Find 5 everyday objects and practice your brainstorming skills by coming up with as many new uses for them as possible. If you think creatively, an old CD can also become wheels for a car or a mini-Frisbee.

*\*Design Time Toy Dissection Activity*

*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Make sure that the girls keep an open mind in brainstorming and that all girls are heard. Discuss what makes the best brainstorming techniques.*

3. Investigate how a toy works by taking a simple mechanical toy apart. Then use the internet to find out how the toy was manufactured. Try to figure out what the designers had in mind when they created this toy. Did they create it for a specific age or gender? How might they have come up with the idea for this toy?

*\*Design Time Design Your Toy Icebreaker*

*FACILITATION AND DISCUSSION POINTS FOR LEADERS—When the girls dissect the toys, make sure they keep track of the screws and how it fit together, so they can put the toys back together.*

4. Discuss as a troop the type of advertisements you see promoting toys. How do these advertisements influence what you want or have? What makes these advertisements effective? Ineffective? In groups, find a toy and create a skit designed to market the product. Discuss what worked and what did not.

*\*Design Time Toy Prototyping Activity*

*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Make sure the girls have a wide variety of advertisements. Keep them on track to discuss the advertisements' influence not just the superficial aspects. Discuss their own advertisements' influence.*

5. Create your own unique toy. Read about how children of different ages need practice with certain skills and incorporate this information into your toy design. Based on your design, build a model of your toy (also known as a prototype).

*\*Design Time Toy Prototyping Activity*

*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Keep the girls focus on the needs of the group for whom they're designing. Remind them that the toy is not what they want but what their customer wants.*

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DESIGN TIME BADGE FOR CADETTE, SENIOR  
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CONNECT

1. Use the internet to research toys that are made for children with visual or hearing impairments. Find out what types of features are important for these toys and think about how you could modify existing toys to incorporate these features. Visit a toy store and investigate the different products on the shelves. Choose three toys and discuss with your troop or a group of friends how you would change them so that children with visual or hearing impairments can also enjoy them.  
*\*Design Time Toy Prototyping: Brainstorm Activity*  
*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Make sure the girls are positive in their approach to toys for the impaired. Discuss the challenges of producing and marketing these kinds of toys.*
2. Learn about design careers by role playing. Pretend that you are on the design team for a new bubble product. With three other people design the best bubble toy you can. One person is the Chemical Engineer and formulates the recipe for the bubble solution. One person is the Mechanical Engineer and prototypes the best bubble wand. A third person is the Marketing Specialist and comes up with the packaging and commercial for the bubble toy. The fourth and final person is the Product Manager. The Product Manager is the only person allowed to talk to anyone else. She is responsible for keeping the team on track and testing the design.  
*\*Design Time Bubble Design Activity*  
*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Make sure the girls are communicating effectively with the Product Manager and staying focused on the design process.*
3. Wouldn't it be great if products were made with your needs in mind? Make a custom designed bag for a client (a friend or family member). Interview them so that when you actually make the bag, you know what they want. After creating the bag, show the prototype to your client. Practice communication skills by receiving feedback from your client, and take this feedback into account in your redesign.  
*\*Design Time Bag Design Activity*  
*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Make sure the girls are designing the bags away from their "customer" so that the "customer" cannot change the design mid-way. Also make sure that the girls use constructive criticism to inform the re-design of the bag. Emphasize that not everyone gets everything right on the first try. Discuss the challenges of making something for someone else's needs rather than your own.*
4. Try using only your voice to communicate instructions to someone else. Draw a simple design over graph paper and use the grid to help you describe that design to your partner. Hopefully your partner will be able to draw the exact same design without seeing your original drawing.  
*\*Design Time Can You Draw This?*  
*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Discuss how hard it is to communicate a visual using only words. Talk about how this skill would be useful for a product designer.*
5. Invite a role model with a career in product design (i.e. mechanical engineer, toy designer, patent attorney) to discuss with your troop career options in product design. Find out why she chose her career, what classes in high school and college prepared her for this work and what types of activities or hobbies she does outside of her job.  
*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Keep the girls focused on specific questions about the woman's career and her interests in it.*

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DESIGN TIME BADGE FOR CADETTE, SENIOR  
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TAKE ACTION

1. Identify a toy that you think is fun and a toy that you think is boring. Determine at least two specific things that could be improved about the boring toy and write a letter to the toy manufacturing company explaining how they can improve their product. Also write a letter for the fun toy, explaining to the company at least two specific reasons you value their product.

*\*The Design Time Fun Toys, Boring Toys Icebreaker*

*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Make sure that the letters are constructive and grammatically correct. Discuss the need to write positive letters as well as negative letters.*

2. Create an in depth display board that shows how a product goes from an idea in someone's head all the way to the store shelf. Make sure to explain the engineering design process. Arrange with the local library, school, or community center to display the board in order to educate members of the community.

*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Make sure the display board is clear and includes all parts of the design process. Discuss the implications of the design process and why others might need to know about it.*

3. Familiarize yourself with current events in the toy industry. Are there any current toy dangers? Social pressures? Controversies? How do you think these issues will be/should be resolved? Discuss these events with your family. Use this discussion as a jump off point to write a letter to the editor of your local newspaper about these current toy issues.

*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Keep the girls focused on solutions rather than problems. Make sure to bring up all sides of an issue.*

4. Help build something for your local community center, humane society, library, school, or park. Help create the design to their specifications and needs. Make sure to ask for feedback after you've completed the project and then redesign it if necessary.

*FACILITATION AND DISCUSSION POINTS FOR LEADERS—Keep the girls focused on feasible projects (i.e. they're not going to build a two story barn by themselves). Make sure that there is room for mistakes and redesign.*

5. Decide how you're going to take action on a design-related topic you're passionate about.

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### Reflection and Evaluation Questions:

- ❖ Why is brainstorming important?
- ❖ Why is it important to leave time to re-design?
- ❖ Was it difficult to communicate clearly with a partner or customer? What was the difference in communication between partner and customer?
- ❖ What was it like to design something for someone else's needs?
- ❖ What makes a toy well-designed?
- ❖ What is the design process? Is it useful? Why or why not?
- ❖ What do you think are the advantages of working with other people?

### Field Trips

Any design firm in your area (an interior decorating company, a toy company, or an architecture firm for example)

### Related Badge Patches

Inventions and Inquiries, Why in the World?, Games for Life, Child Care

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