Overview
In the Board Game Design Challenge, Daisies create board games and learn that people who invent new things are called inventors.

Step One: Come up with an idea for your board game
Step Two: Design a spinner for your game
Step Three: Test your game and make it better (To be completed in Board Game Design Challenge 2)

This meeting, Daisies brainstorm ideas for board games and design their spinner. Daisies complete Step One & Step Two of the Board Game Design Challenge badge.

Note to Volunteers:

Use the Talking Points (But Make Them Your Own): In each session, you’ll find suggested talking points under the heading “SAY.” Some volunteers, especially new ones, find it helpful to follow the script. Others use the talking points as a guide and deliver the information in their own words. Either way is just fine.

Be Prepared (It’s What Girl Scouts Do!): Each meeting includes a “Prepare Ahead” section that includes a materials list and what kind of set-up is required. Read it in advance so you have enough time to gather supplies and enlist help, if needed.

This badge requires the GoldieBlox Making Things Move kit. Each kit includes 6 sets of GoldieBlox parts for the badge, (i.e. you can create 6 of any Daisy Design Challenge badge from one kit). Inside the kit are six sets of GoldieBlox parts that allow girls to earn all 3 Daisy badges. Two to four girls can use each set. So if you have 12 girls, buy one kit per them to work in pairs. You can purchase the kit online from the Girl Scout Shop: http://www.girlscoutshop.com/

You will not be able to buy the correct kit from the GoldieBlox website or your council shop.

Use Girl Scouts’ Three Processes: Girl-led, learning by doing, cooperative learning — these three processes are the key to making sure Daisies have fun in Girl Scouts and keep coming back.

“Learning by doing” and “cooperative learning” are built into this Badge, thanks to the hands-on activities and tips. You’ll also find specific “keep it girl-led” tips in the meeting plans. They’ll help you create an experience where Daisies know they can make
choices and have their voices heard.

**Fail Fast. Succeed Sooner:** That’s how engineers solve problems. In this badge, Daisies will learn about engineering through hands-on activities. They’ll learn to: Brainstorm ways to solve a problem, design prototypes, test them to see what does and doesn’t work, then improve their designs. To engineers, failure is a good thing because every time a design fails, you learn something and can make it better.

You can help Daisies think this way. When her prototype doesn’t work, ask questions like, “Why do you think it didn’t work? How can you change your design? Try again — that’s what engineers do!” This approach also keeps the activity girl-led and fun because Daisies are free to invent things without feeling the pressure to make them perfect.

**Leave Time for the Closing Ceremony:** If Daisies are having fun doing a Design Challenge, you may be tempted to skip the Closing Ceremony so they can keep going — but the Closing Ceremony is absolutely key to their learning. Here’s why:

When Daisies leave a meeting, they’ll remember how much fun it was to build a board game or to make a car speed down a ramp. However, they may not realize that they just learned how engineers solve problems or that they’re good at engineering — unless you tell them.

That’s why the Closing Ceremony is so important. It’s where you can connect the dots for Daisies by:

- Pointing out how they acted as engineers. (**For example:** They did rapid prototyping. When one of their prototypes didn’t work, they saw that “failure” as helpful feedback and tried something else. They worked together to find solutions. They shared their designs and offered suggestions.)
- Reminding Daisies that they are already engineers — and that it’s fun to solve problems using engineering.
- Letting them know that they have what it takes to continue exploring STEM.

These simple messages can boost Daisies’ confidence and interest in STEM — and end the meeting on an upbeat note!

**Tell Your Troop Story:** As a Girl Scout leader, you’re designing experiences that Daisies will remember their whole lives. Try to capture those memories with photos or videos. Daisies love remembering all they did — and it’s a great way for parents to see how Girl Scouting helps their Daisies!
Prepare Ahead (Roughly 50 minutes)

PLEASE NOTE: You will need the GoldieBlox Making Things Move kit for girls to complete the requirements and earn the badges. Details for the kit are listed in this section and on the Materials List.

1. Review vocabulary (2 minutes)

This meeting includes the following vocabulary:

- **Inventors** – people who think of and build new products and ideas.
- **Engineers** – people who like to know how things work. They design and build things people use every day, like computers, phones, roads, bridges and cars.
- **Brainstorming** – when people come together to think of new ideas and solutions.
- **Features** – parts of a product that are designed make them more useful.

See the **Glossary for Daisy Design Challenge Badges** for more vocabulary and examples.

2. Read through this guide and handouts (15 minutes)

This will help you get familiar with the flow of the meeting.

The following handouts can be found in Meeting Aids.

- **Daisy Design Challenge Badges Materials List**: Each meeting has its own materials list, but you can use this handout if you like to do all your supply shopping at one time. It includes all materials needed for the entire badge.

- **Glossary for Daisy Design Challenge Badges**: This is a list of words that Daisies may not know and how to define them.
• **Think, Pair, Share**: These facilitation tips will help you to make sure that every girl’s voice is heard during brainstorming activities.

4. **Gather materials (30 minutes)**

Gather materials using the Materials List for this meeting. If your meeting location doesn’t have a flag, bring a small one that Daisies can take turns holding or hang in the room.

(Note to Volunteers: You will need the GoldieBlox Making Things Move kit for the girls to complete the requirements and earn the badges. You can purchase this from the Girl Scouts Shop: [http://www.girlscoutshop.com/](http://www.girlscoutshop.com/)).

Get Help from Your Family and Friends Network

Your Friends and Family Network can include:
- Daisies’ parents, aunts, uncles, older siblings, cousins, and friends
- Other volunteers who have offered to help with the meeting.

Ask your Network to help:
- Bring art supplies.
- Assist with Design Challenge activities.

Award Connection

Daisies will earn one award:
- Board Game Design Challenge badge

Daisies receive the award following the completion of all three steps of the badge in **Board Game Design Challenge 2**.

(Note to Volunteers: You can buy these awards from your council shop or on the Girl Scouts’ website.)

**Meeting Length**

60 minutes
- The times given for each activity will be different depending on how many Daisies are in your troop.
• There is no snack time scheduled in these meetings. If girls need a snack, add 15 minutes to the overall time for the meeting.
• Give Daisies 10- and 5-minute warnings before they need to wrap up the last activity so you’ll have time for the Closing Ceremony.

In the Board Game Design Challenge, Daisies create board games and learn that people who invent new things are called inventors.

**Step One:** Come up with an idea for your board game  
**Step Two:** Design a spinner for your game  
**Step Three:** Test your game and make it better (To be completed in Board Game Design Challenge 2)

This meeting, Daisies brainstorm ideas for board games and design their spinner. Daisies complete Step One & Step Two of the Board Game Design Challenge badge.

**Materials List**

**Activity 1: As Girls Arrive: Paper Games**
- Paper
- Pencils
- Optional: Find and print out puzzles, mazes and other simple paper games

**Activity 2: Opening Ceremony: All About Games**
- Flag
- Optional: Poster Board with the Girl Scout Promise and Law

**Activity 3: Come Up with an Idea for Your Board Game**
- Paper
- Markers and/or crayons

**Activity 4: Design a Spinner for Your Game**
- GoldieBlox Making Things Move kit (one set for each pair or small team.) Feel free to add additional pieces from personal GoldieBlox kits that you or your Girl Scouts may own.

**Activity 5: Closing Ceremony**
- **Spinner Paper Pieces** (one for each Spinner created)
Awards
Girls do not receive any awards in this meeting.

Detailed Activity Plan

Activity 1: As Girls Arrive: Paper Games

Time Allotment
10 Minutes

Materials
- Paper
- Pencils
- Optional: Find and print out puzzles, mazes and other simple paper games

Steps
Welcome Daisies, and have them play common paper games in pairs. This could include: Tic Tac Toe, Dots and Boxes (girls take turns forming lines to create boxes on a dotted grid), Pictionary, or any other games you know.

Optional: Hand out puzzles, mazes or other paper games for Daisies.

SAY:
Today, we’re going to start designing our own board games.

To get ready, play your favorite paper games with your partner!

Maybe you like Tic Tac Toe or perhaps you like Pictionary?

Activity 2: Opening Ceremony: All About Games

Time Allotment
10 Minutes

Materials
- Flag
- Optional: Poster Board with the Girl Scout Promise and Law
Steps

Recite the Pledge of Allegiance and the Promise and Law.

Conduct any troop business.

Introduce Daisies to the Board Game Design Challenge.

SAY:
Today, we’re starting the Board Game Design Challenge badge!

You’re going to learn how to invent new board games and create things like an engineer.

Engineers are people who like to know how things work. They design and build things people use every day, like computers, phones, roads, bridges and cars.

Engineers use their imaginations to solve problems and create new products. You’ll do the same thing today!

Activity 3: Come Up with an Idea for Your Board Game

Time Allotment
15 Minutes

Materials
• Paper
• Markers and/or crayons

Steps

Daisies learn about inventors and brainstorm their own board games for Step One of the Board Game Design Challenge.

SAY:
Who can name a board game you love to play?
Girls may say: Chutes and Ladders, Peaceable Kingdom games, Candyland, etc. (Let girls name their favorite games, even though not all of them involve spinners.)

If you were making up a new game, what would it be like?

Let girls toss out ideas for new board games.

If they need help getting started, ask questions such as:

- Would you have characters in your game?
- What would they be trying to do? Girls may say: Get to the enchanted forest, get to the end of the road first, collect the most of some object, etc.
- What would the name of your game be?
- Does someone win the game? What do they have to do to win?

SAY:
Those sound like fun games. Some inventors make up new games!

People who make up new things are called inventors. They often brainstorm many ideas at first then draw their ideas so they can show them to others.

Has anyone ever heard of brainstorming? What is it? (Answer: Brainstorming is when people come together to think of new ideas and solutions.)

You are all inventors, so why don’t we take a few minutes for you to brainstorm and draw your board game ideas?

Hand out paper and crayons/markers.

Give girls 10 minutes to draw their game ideas.

They may want to work alone or in pairs.

Activity 4: Design a Spinner for Your Game

Time Allotment
15 Minutes

Materials
• GoldieBlox Making Things Move kit (one set for each pair or small team.) Feel free to add additional pieces from personal GoldieBlox kits that you or your Girl Scouts may own.

Steps

Daisies brainstorm and build spinners for Step Two of the Board Game Design Challenge.

SAY:
In a lot of games, you figure out how many moves you can make by using dice. We don’t have any dice. What else could we use? (Answer: A spinner.)

Do you have a favorite game that uses a spinner? How does it work?

Engineers are inventors who know how to design and build all kinds of things. One of the things they might want to design is a game spinner.

Do you think you could design something with pieces from the kit that would work the same way? What would it need to do? (Answer: Spin and point.)

In pairs (or small teams), work together to create a spinner that can turn in a circle and point to something, just like a spinner.

See what you can put together. Take turns trying to make your design better. Engineers always try more than one idea.

Divide girls into pairs or small teams.

Give each team a set from the GoldieBlox Making Things Move kit to build their spinner.

Float around the room, watching girls try out different designs. If they are having problems, avoid offering them a solution. Instead, ask questions, such as, “Why do you think your spinner isn’t working yet? What else could you try?”

Keep It Girl-Led: By having girls reverse engineer the spinner, Daisies have a hands-on opportunity to learn about the different parts instead of following directions. If they’re having trouble, ask them questions like, “What GoldieBlox parts could turn in a circle? How are they stuck together? What part would help the spinner to point?”
Circulate among the groups, asking questions to prompt further exploration.

If girls are having trouble, lead them to use the wheel parts to create a base. Axles can be added to help the spinner point.

Remind Daisies that their spinner needs to turn and point.

Activity 5: Closing Ceremony

Time Allotment
10 Minutes

Materials
- Spinner Paper Pieces (one for each Spinner created)

Steps

Have Daisies form a Friendship Circle, and discuss with them how they designed their spinners.

SAY:
Different designs do different things. Good designs offer “features” that make them more useful. For example, a feature could be something like a sharp point that helps the spinner move faster.

How will you use the spinner in your game? (Answer: The spinner can tell us where or how far to move.)

What features does your spinner design include?

What pieces did you start with? Why did you choose those?

(Note to Volunteers: They may have started with a wheel and axle because they knew they would need them to spin.)

What other pieces did you add? What about them made you use them?

(Note to Volunteers: They may have used an axle or the crank to point or a washer to make it spin faster.)
If we built a spinner with all the features we just came up with, how would we build it?

How could we decide between two conflicting features? (Answer: Whichever is most useful.)

How would we define “the best spinner”? (Answers may vary. The one that is easiest to spin and spins the longest may be one answer.)

Show Daisies the Spinner Paper Pieces.

SAY:
Is there a design feature that works best to attach these to our spinners? What part could we use? (Answer: Washers)

How do the washers help it spin faster? (Answer: They are smoother than the pegboard or paper, so the wheel doesn’t get stuck on them.)

Next time, we’ll add these paper pieces on to our spinners before we create and play our board games!

End the meeting with a Friendship Squeeze.

(Note to Volunteers: You may want to save the Daisies’ spinners for the next meeting, Board Game Design Challenge 2. If you are able to, label each spinner with the girl or group’s name(s) and put away until the next meeting. If you are unable to keep them together, don’t worry, the girls will have a chance to rebuild at the start of the next meeting.)

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Design Challenge Badges
Glossary for Daisies

Daisies may not know some of the words used in these badges. Here are definitions you can share with them:

**Inventors** are people who think of and build new products and ideas.

**Engineers** are people who like to know how things work. They design and build things people use every day, like computers, phones, roads, bridges and cars.

**Brainstorming** is what happens when you and your troop get together to come up with ideas.

**Features** are parts of a product that are designed to make them more useful.

**Force** is the strength or energy that creates movement. Push and pull are examples of force.

**Friction** is a force that slows moving objects.
Daisy Design Challenge Badges: Materials List

**Board Game Design Challenge 1**

**Activity 1: As Girls Arrive: Paper Games**
- Paper
- Pencils
- Optional: Find and print out puzzles, mazes and other simple paper games

**Activity 2: Opening Ceremony: All About Games**
- Flag
- Optional: Poster Board with the Girl Scout Promise and Law

**Activity 3: Come Up with an Idea for Your Board Game**
- Paper
- Markers and/or crayons

**Activity 4: Design a Spinner for Your Game**
- GoldieBlox Making Things Move kit (one set for each pair or small team.) Feel free to add additional pieces from personal GoldieBlox kits that you or your Girl Scouts may own.

**Activity 5: Closing Ceremony**
- Spinner Paper Pieces (one for each Spinner created)

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**Board Game Design Challenge 2**

**Activity 1: As Girls Arrive: Create Your Game Board**
- Spinners created in Board Game Design Challenge 1. *(Note to Volunteers: If you were unable to save the spinner between meetings, Daisies can rebuild their spinners during this activity.)*
- **Spinner Paper Pieces** (one for each Spinner created)
- Large paper, construction paper, or poster board
- Markers and/or crayons

**Activity 2: Opening Ceremony: Share Your Game Board**
- Flag
- Spinners and game boards created by Daisies
- Optional: Poster Board with the Girl Scout Promise and Law

**Activity 3: Test Your Game and Make It Better**
- Spinners and game boards created by Daisies
- GoldieBlox Making Things Move kit (one set for each pair or small team)

**Activity 4: Closing Ceremony: Awards**
- Board Game Design Challenge award

*(Note to Volunteers: You can buy these awards from your council shop or on the Girl Scouts' website.)*
Daisy Design Challenge Badges: Materials List

Roller Coaster Design Challenge 1

Activity 2: Opening Ceremony: All About Roller Coasters
- Flag
- Where Does the Roller Coaster Go Fastest? handout
- Optional: Poster Board with the Girl Scout Promise and Law

Activity 3: Make a Simple Roller Coaster Car
- GoldieBlox Making Things Move kit (one set for each pair or small team.) (Note to Volunteers: A simple roller coaster car uses 2 wheels, 4 blocks, and 4 short axles, but girls can build upon this with the other pieces. Feel free to add additional pieces from personal GoldieBlox kits that you or your Girl Scouts may own.)
- Simple Roller Coaster Car handout

Activity 4: Build a Model of a Roller Coaster
- Roller coaster cars created by girls in Activity 3: Make a simple roller coaster car
- Folders, poster boards, cardboard, etc., to lean against something to create a ramp
- Books, boxes, tables, etc. to create the height and top of a ramp

Roller Coaster Design Challenge 2

Activity 1: As Girls Arrive: Prepare for Testing
- Roller coaster cars created by girls in Roller Coaster Design Challenge 1. (Note to Volunteers: If you were unable to save the roller coaster cars between meetings, Daisies can rebuild their cars during this activity.)
- Folders, poster boards, cardboard, etc., to lean against something to create a ramp
- Books, boxes, tables, etc. to create the height and top of a ramp

Activity 2: Opening Ceremony: Engineers Work Together!
- Flag
- Optional: Poster Board with the Girl Scout Promise and Law

Activity 3: Test Your Roller Coaster
- Roller coaster cars created by girls in Roller Coaster Design Challenge 1 or rebuilt in Activity 1: As Girls Arrive: Prepare for Testing
- Ramps created in Activity 1: As Girls Arrive: Prepare for Testing
- Leftover materials from Activity 1: As Girls Arrive: Prepare for Testing for girls to build on ramps
- Leftover parts from the GoldieBlox Making Things Move kit for girls to build on their roller coaster cars

Activity 4: Closing Ceremony: Awards
- Roller Coaster Design Challenge award

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Daisy Design Challenge Badges: Materials List

model Car Design Challenge 1

Activity 1: As Girls Arrive: Playing with Force and Friction
• Sports and game balls (one for each pair of girls). Bring different types of balls for girls to roll and observe friction. For example, you might bring a marble, tennis ball, basketball, ping pong ball, baseball, etc.
• Create two lines with masking tape on the floor. Each Daisy should sit on the line, facing their partner.

Activity 2: Opening Ceremony: All About Friction
• Flag
• Optional: Poster Board with the Girl Scout Promise and Law
• Optional: Print out pictures of a bicycle wheel (including brake pads), a golf ball on a putting green, a baseball player sliding, and a sled loaded with supplies (or other examples of friction)

Activity 3: Design and Build Model Cars
• GoldieBlox Making Things Move kit (one set for each pair or small team.) (Note to Volunteers: Depending on what model car Daisies decide to build, pieces will vary. Feel free to add additional pieces from personal GoldieBlox kits that you or your Girl Scouts may own.)
• “GoldieBlox and the Parade Float” or GoldieBlox Parade Floats handout

Activity 4: Use Model Cars to Test the Friction of Different Surfaces
• Floats created in Activity 3: Design and Build Model Cars
• 2+ Friction stations for girls to test their cars (including a different surface at each station). See Prepare Ahead for more information on how to create the stations.
• Optional: Yard sticks, rulers, or string for Daisies to measure how far their cars go at each station.
• Optional: Paper and pencils if Daisies can read/write to record data.

Model Car Design Challenge 2

Activity 1: As Girls Arrive: Build a Simple Ramp
• Model cars created by girls in Model Car Design Challenge 1. (Note to Volunteers: If you were unable to save the model cars between meetings, Daisies can rebuild their cars during this activity.)
• Folders, poster boards, cardboard, etc., to lean against something to create a ramp
• Books, boxes, tables, etc. to create the height and top of a ramp

Activity 2: Opening Ceremony: Reviewing Force and Friction
• Flag
• Optional: Poster Board with the Girl Scout Promise and Law

Activity 3: Race Your Cars!
• Model cars created by girls in Model Car Design Challenge 1 or rebuilt in Activity 1: As Girls Arrive: Build a Simple Ramp
• Sample ramp or ramps created in Activity 1: As Girls Arrive: Build a Simple Ramp
• Leftover parts from the GoldieBlox Making Things Move kit for girls to rebuild their model cars
• Surface for bottom of ramp (towel, carpet, or asphalt)
Daisy Design Challenge Badges: Materials List

Model Car Design Challenge 2 (continued)

Activity 4: Closing Ceremony: Awards

• Model Car Design Challenge award

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Brainstorming Tips: Think, Pair, Share

How to Run a Think, Pair, Share Activity:

Tell girls that they're going to brainstorm answers to your question using “Think, Pair, Share.”

Lead girls through the basic steps by telling them they will:

1. Break into small groups.

2. Listen to the question or prompt.

3. Think about their answers.
   - Girls may want to write their answers down.
   - Twenty seconds should be enough time, since girls will need to sit quietly.

4. Pair with other girls.
   - Girls talk with one to three other girls (depending on group size), making sure everyone has a chance to share their answers. If there's time, it's OK for girls to ask questions about each other’s answers.
   - For pairs, 20 seconds should be enough time. If your troop enjoys discussion, consider extending this to 1 to 2 minutes.

5. Share with the group.
   - Girls share their answers with the larger group.
   - This can be completed in 20 – 30 seconds, but will run longer based on group size and how the group sharing is done.

There are two ways to set up group sharing:

- **Strongly Recommended**: One girl shares the best/most interesting/summary answer for the group. This approach is great if you're running short on time. It also helps develop conflict resolution and compromise skills.

- **Optional**: Each girl shares her partner’s answer. This helps girls develop active listening skills, but will run longer because all girls are sharing.
The Girl Scout Promise

On my honor, I will try:

To serve God and my country,
To help people at all times,
And to live by the Girl Scout Law.

The Girl Scout Law

I will do my best to be
honest and fair,
friendly and helpful,
considerate and caring,
courageous and strong, and
responsible for what I say and do,
and to
respect myself and others,
respect authority,
use resources wisely,
make the world a better place, and
be a sister to every Girl Scout.
Overview

In the Board Game Design Challenge, Daisies create board games and learn that people who invent new things are called inventors.

**Step One:** Come up with an idea for your board game (completed in Board Game Design Challenge 1).

**Step Two:** Design a spinner for your game (completed in Board Game Design Challenge 1).

**Step Three:** Test your game and make it better.

This meeting, Daisies finish creating and testing their board games for Step Three of the Challenge, earning the Board Game Design Challenge badge.

**Note to Volunteers:**

Use the Talking Points (But Make Them Your Own): In each session, you’ll find suggested talking points under the heading “SAY.” Some volunteers, especially new ones, find it helpful to follow the script. Others use the talking points as a guide and deliver the information in their own words. Either way is just fine.

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That's why the Closing Ceremony is so important. It's where you can connect the dots for Daisies by:

- Pointing out how they acted as engineers. (For example: They did rapid prototyping. When one of their prototypes didn't work, they saw that “failure” as helpful feedback and tried something else. They worked together to find solutions. They shared their designs and offered suggestions.)
- Reminding Daisies that they are *already* engineers — and that it's fun to solve problems using engineering.
- Letting them know that they have what it takes to continue exploring STEM.

These simple messages can boost Daisies’ confidence and interest in STEM — and end the meeting on an upbeat note!

**Tell Your Troop Story:** As a Girl Scout leader, you’re designing experiences that
Daisies will remember their whole lives. Try to capture those memories with photos or videos. Daisies love remembering all they did — and it’s a great way for parents to see how Girl Scouting helps their Daisies!

And please do share your photos and videos with GSUSA by emailing them to STEM@girlscouts.org (with photo releases if at all possible!).

Prepare Ahead (Roughly 50 minutes)
PLEASE NOTE: You will need the GoldieBlox Making Things Move kit for girls to complete the requirements and earn the badges. Details for the kit are listed in this section and on the Materials List.

1. Review vocabulary (2 minutes)

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2. Read through this guide and handouts (15 minutes)

This will help you get familiar with the flow of the meeting.

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4. **Gather materials (30 minutes)**

Gather materials using the Materials List for this meeting. If your meeting location doesn’t have a flag, bring a small one that Daisies can take turns holding or hang in the room.

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- Other volunteers who have offered to help with the meeting.

**Ask your Network to help:**
- Bring art supplies.
- Assist with Design Challenge activities.

**Award Connection**

Daisies will earn one award:
- Board Game Design Challenge badge

Daisies receive the award following the completion of all three steps of the badge this meeting.

**(Note to Volunteers:** You can buy these awards from your council shop or on the Girl Scouts’ website.)

**Meeting Length**

60 minutes
- The times given for each activity will be different depending on how many Daisies are in your troop.
• There is no snack time scheduled in these meetings. If girls need a snack, add 15 minutes to the overall time for the meeting.
• Give Daisies 10- and 5-minute warnings before they need to wrap up the last activity so you’ll have time for the Closing Ceremony.

In the Board Game Design Challenge, Daisies create board games and learn that people who invent new things are called inventors.

**Step One:** Come up with an idea for your board game (completed in Board Game Design Challenge 1).

**Step Two:** Design a spinner for your game (completed in Board Game Design Challenge 1).

**Step Three:** Test your game and make it better.

This meeting, Daisies finish creating and testing their board games for Step Three of the Challenge, earning the Board Game Design Challenge badge.

**Materials List**

**Activity 1: As Girls Arrive: Create Your Game Board**
- Spinners created in Board Game Design Challenge 1. **(Note to Volunteers: If you were unable to save the spinner between meetings, Daisies can rebuild their spinners during this activity.)**
- **Spinner Paper Pieces** (one for each Spinner created)
- Large paper, construction paper, or poster board
- Markers and/or crayons

**Activity 2: Opening Ceremony: Share Your Board Game**
- Flag
- Spinners and game boards created by Daisies
- Optional: Poster Board with the Girl Scout Promise and Law

**Activity 3: Test Your Game and Make It Better**
- Spinners and game boards created by Daisies
- **GoldieBlox Making Things Move** kit (one set for each pair or small team)

**Activity 4: Closing Ceremony: Awards**
Board Game Design Challenge 2

- Board Game Design Challenge award

(Note to Volunteers: You can buy these awards from your council shop or the Girl Scouts' website.)

Detailed Activity Plan

Activity 1: As Girls Arrive: Create Your Game Board

Time Allotment
10 Minutes

Materials
- Spinners created in Board Game Design Challenge 1. (Note to Volunteers: If you were unable to save the spinner between meetings, have Daisies rebuild their spinners during this activity.)
- Spinner Paper Pieces (one for each spinner created)
- Large paper, construction paper, or poster board
- Markers and/or crayons

Steps
Welcome Daisies, and have them create their game boards. Daisies can also add the Spinner Paper Pieces to their spinners.

Optional: If you were unable to save the spinner between meetings, Daisies can rebuild their spinners.

SAY:
Last time, you brainstormed a board game and created a spinner for it.

Now, take a few minutes to create your game board. Think about all the decisions you made on what the players will be doing in your game and what features your game board might need.

For example, since we have spinners, you might include places or spaces for your characters to move around.
Feel free to add the Spinner Paper Pieces on to you spinner, too!

Activity 2: Opening Ceremony: Share Your Board Game

Time Allotment
10 Minutes

Materials
- Flag
- Spinners and game boards created by Daisies
- Optional: Poster Board with the Girl Scout Promise and Law

Steps
Recite the Pledge of Allegiance and the Promise and Law.

Conduct any troop business.

Have Daisies share their spinners and game boards.

SAY:
Last time you designed new, creative board games, just like engineers!

Then, you shared your ideas with others. Engineers do that, too.

Sharing your ideas helps you to get feedback and new ideas to make your game even better.

Today, we’re going to finish designing our board games, and have a chance to play with them!

Activity 3: Test Your Game and Make It Better

Time Allotment
30 Minutes

Materials
- Spinners and game boards created by Daisies
- GoldieBlox Making Things Move kit (one set for each pair or small team)
Steps

Daisies complete Step Three of the Board Game Design Challenge by testing and improving their games.

Show Daisies the figurines in the GoldieBlox Making Things Move kit.

**SAY:**

*Let’s go back to your great ideas for new board games.*

*What if you were using these characters in your game? How could you include them?*

Remind Daisies that testing is an important part of designing something new.

**SAY:**

*Once you’ve invented something, like a new game, you want to test it to see how well it works. Engineers test all of their inventions to make sure the design is just right.*

*Now, let’s get back into small groups and try to play the games you created.*

*Use the rest of the pieces, and play a game using your spinner and board!*

*Pay attention to what you like about playing the game and where you could make it better.*

Let girls play their games and discuss how they would improve them. If there’s time, have girls rework and build on their spinners and board games.

Activity 4: Closing Ceremony: Awards

**Time Allotment**

10 Minutes

**Materials**

- Board Game Design Challenge award

(**Note to Volunteers:** You can buy these awards from your council shop or the Girl Scout store.)
Scouts’ website.)

**Steps**
Have Daisies form a Friendship Circle and wrap up the Board Game Design Challenge before they receive their awards.

**SAY:**
*Let’s take turns telling each other what we learned from testing our games and one thing we could do to make them even better.*

Let girls answer. Make sure every girl gets a chance to speak.

Daisies receive the Board Game Design Challenge badge.

**SAY:**
*You’ve now earned the Board Game Design Challenge badge.*

*Please step forward when I say your name to accept your award.*

Lead a round of applause for each Daisy as she steps forward.

**SAY:**
*You have earned your Board Game Design Challenge award, which means you have created your own board game and learned what inventors and engineers do.*

Encourage Daisies to share their new knowledge with others.

**SAY:**
*When you leave here, who do you want to tell about what you learned?*

**Girls may say:** My parents, my brothers and sisters, my friends at school.

*That’s great! When you learn something, it’s fun to pass it on to others. We can all learn from each other.*

End the meeting with a Friendship Squeeze.

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

- Making a new game for my friends or family to play.
Design Challenge Badges
Glossary for Daisies

Daisies may not know some of the words used in these badges. Here are definitions you can share with them:

**Inventors** are people who think of and build new products and ideas.

**Engineers** are people who like to know how things work. They design and build things people use every day, like computers, phones, roads, bridges and cars.

**Brainstorming** is what happens when you and your troop get together to come up with ideas.

**Features** are parts of a product that are designed make them more useful.

**Force** is the strength or energy that creates movement. Push and pull are examples of force.

**Friction** is a force that slows moving objects.
Daisy Design Challenge Badges: Materials List

**Board Game Design Challenge 1**

**Activity 1: As Girls Arrive: Paper Games**
- Paper
- Pencils
- Optional: Find and print out puzzles, mazes and other simple paper games

**Activity 2: Opening Ceremony: All About Games**
- Flag
- Optional: Poster Board with the Girl Scout Promise and Law

**Activity 3: Come Up with an Idea for Your Board Game**
- Paper
- Markers and/or crayons

**Activity 4: Design a Spinner for Your Game**
- GoldieBlox Making Things Move kit (one set for each pair or small team.) Feel free to add additional pieces from personal GoldieBlox kits that you or your Girl Scouts may own.

**Activity 5: Closing Ceremony**
- Spinner Paper Pieces (one for each Spinner created)

**Board Game Design Challenge 2**

**Activity 1: As Girls Arrive: Create Your Game Board**
- Spinners created in Board Game Design Challenge 1. (*Note to Volunteers:* If you were unable to save the spinner between meetings, Daisies can rebuild their spinners during this activity.)
- **Spinner Paper Pieces** (one for each Spinner created)
- Large paper, construction paper, or poster board
- Markers and/or crayons

**Activity 2: Opening Ceremony: Share Your Game Board**
- Flag
- Spinners and game boards created by Daisies
- Optional: Poster Board with the Girl Scout Promise and Law

**Activity 3: Test Your Game and Make It Better**
- Spinners and game boards created by Daisies
- GoldieBlox Making Things Move kit (one set for each pair or small team)

**Activity 4: Closing Ceremony: Awards**
- Board Game Design Challenge award

(*Note to Volunteers:* You can buy these awards from your council shop or on the Girl Scouts' website.)
Daisy Design Challenge Badges: Materials List

Roller Coaster Design Challenge 1

Activity 2: Opening Ceremony: All About Roller Coasters
• Flag
• Where Does the Roller Coaster Go Fastest? handout
• Optional: Poster Board with the Girl Scout Promise and Law

Activity 3: Make a Simple Roller Coaster Car
• GoldieBlox Making Things Move kit (one set for each pair or small team.) (Note to Volunteers: A simple roller coaster car uses 2 wheels, 4 blocks, and 4 short axles, but girls can build upon this with the other pieces. Feel free to add additional pieces from personal GoldieBlox kits that you or your Girl Scouts may own.)
• Simple Roller Coaster Car handout

Activity 4: Build a Model of a Roller Coaster
• Roller coaster cars created by girls in Activity 3: Make a simple roller coaster car
• Folders, poster boards, cardboard, etc., to lean against something to create a ramp
• Books, boxes, tables, etc. to create the height and top of a ramp

Roller Coaster Design Challenge 2

Activity 1: As Girls Arrive: Prepare for Testing
• Roller coaster cars created by girls in Roller Coaster Design Challenge 1. (Note to Volunteers: If you were unable to save the roller coaster cars between meetings, Daisies can rebuild their cars during this activity.)
• Folders, poster boards, cardboard, etc., to lean against something to create a ramp
• Books, boxes, tables, etc. to create the height and top of a ramp

Activity 2: Opening Ceremony: Engineers Work Together!
• Flag
• Optional: Poster Board with the Girl Scout Promise and Law

Activity 3: Test Your Roller Coaster
• Roller coaster cars created by girls in Roller Coaster Design Challenge 1 or rebuilt in Activity 1: As Girls Arrive: Prepare for Testing
• Ramps created in Activity 1: As Girls Arrive: Prepare for Testing
• Leftover materials from Activity 1: As Girls Arrive: Prepare for Testing for girls to build on ramps
• Leftover parts from the GoldieBlox Making Things Move kit for girls to build on their roller coaster cars

Activity 4: Closing Ceremony: Awards
• Roller Coaster Design Challenge award

(Note to Volunteers: You can buy these awards from your council shop or on the Girl Scouts’ website.)
Daisy Design Challenge Badges: Materials List

Model Car Design Challenge 1

Activity 1: As Girls Arrive: Playing with Force and Friction
- Sports and game balls (one for each pair of girls). Bring different types of balls for girls to roll and observe friction. For example, you might bring a marble, tennis ball, basketball, ping pong ball, baseball, etc.
- Create two lines with masking tape on the floor. Each Daisy should sit on the line, facing their partner.

Activity 2: Opening Ceremony: All About Friction
- Flag
- Optional: Poster Board with the Girl Scout Promise and Law
- Optional: Print out pictures of a bicycle wheel (including brake pads), a golf ball on a putting green, a baseball player sliding, and a sled loaded with supplies (or other examples of friction)

Activity 3: Design and Build Model Cars
- GoldieBlox Making Things Move kit (one set for each pair or small team.) (Note to Volunteers: Depending on what model car Daisies decide to build, pieces will vary. Feel free to add additional pieces from personal Goldieblox kits that you or your Girl Scouts may own.)
- “GoldieBlox and the Parade Float” or GoldieBlox Parade Floats handout

Activity 4: Use Model Cars to Test the Friction of Different Surfaces
- Floats created in Activity 3: Design and Build Model Cars
- 2+ Friction stations for girls to test their cars (including a different surface at each station). See Prepare Ahead for more information on how to create the stations.
- Optional: Yard sticks, rulers, or string for Daisies to measure how far their cars go at each station.
- Optional: Paper and pencils if Daisies can read/write to record data.

Model Car Design Challenge 2

Activity 1: As Girls Arrive: Build a Simple Ramp
- Model cars created by girls in Model Car Design Challenge 1. (Note to Volunteers: If you were unable to save the model cars between meetings, Daisies can rebuild their cars during this activity.)
- Folders, poster boards, cardboard, etc., to lean against something to create a ramp
- Books, boxes, tables, etc. to create the height and top of a ramp

Activity 2: Opening Ceremony: Reviewing Force and Friction
- Flag
- Optional: Poster Board with the Girl Scout Promise and Law

Activity 3: Race Your Cars!
- Model cars created by girls in Model Car Design Challenge 1 or rebuilt in Activity 1: As Girls Arrive: Build a Simple Ramp
- Sample ramp or ramps created in Activity 1: As Girls Arrive: Build a Simple Ramp
- Leftover parts from the GoldieBlox Making Things Move kit for girls to rebuild their model cars
- Surface for bottom of ramp (towel, carpet, or asphalt)
Daisy Design Challenge Badges: Materials List

Model Car Design Challenge 2 (continued)

Activity 4: Closing Ceremony: Awards

- Model Car Design Challenge award

(Note to Volunteers: You can buy these awards from your council shop or on the Girl Scouts' website.)
Brainstorming Tips: Think, Pair, Share

How to Run a Think, Pair, Share Activity:

Tell girls that they’re going to brainstorm answers to your question using “Think, Pair, Share.”

Lead girls through the basic steps by telling them they will:

1. **Break into small groups.**

2. **Listen to the question or prompt.**

3. **Think about their answers.**
   - Girls may want to write their answers down.
   - Twenty seconds should be enough time, since girls will need to sit quietly.

4. **Pair with other girls.**
   - Girls talk with one to three other girls (depending on group size), making sure everyone has a chance to share their answers. If there’s time, it’s OK for girls to ask questions about each other’s answers.
   - For pairs, 20 seconds should be enough time. If your troop enjoys discussion, consider extending this to 1 to 2 minutes.

5. **Share with the group.**
   - Girls share their answers with the larger group.
   - This can be completed in 20 – 30 seconds, but will run longer based on group size and how the group sharing is done.

There are two ways to set up group sharing:

- **Strongly Recommended:** One girl shares the best/most interesting/summary answer for the group. This approach is great if you’re running short on time. It also helps develop conflict resolution and compromise skills.

- **Optional:** Each girl shares her partner’s answer. This helps girls develop active listening skills, but will run longer because all girls are sharing.
The Girl Scout Promise

On my honor, I will try:

To serve God and my country,
To help people at all times,
And to live by the Girl Scout Law.

The Girl Scout Law

I will do my best to be
honest and fair,
friendly and helpful,
considerate and caring,
courageous and strong, and
responsible for what I say and do,
and to
respect myself and others,
respect authority,
use resources wisely,
make the world a better place, and
be a sister to every Girl Scout.