

CADETTE

Coding for Good Badges

NOTES TO VOLUNTEERS

To earn the *Coding Basics* badge,

Cadettes learn some of the basics of coding, including functions and arguments, and how computer programming can make a difference in the world. They write shareable code to create memes with a positive message, and they explore the different ways memes can be shared and go viral.

To earn the Digital Game Design badge, Cadettes explore video game design and how games can make a positive change in the world. They'll design game scenarios, learn how images are stored and displayed on screens with arrays, and use elements from JavaScript to create their own characters.

To earn the App Development badge, Cadettes look at app design and how apps can be used to make a difference for other people. They'll learn how to store data with arrays, how apps display that data, and how to collect and analyze data for personal improvement. They'll use elements from JavaScript to create their own prototype for an app that will help to build a healthy habit.

About the Badges:

Follow the Badge Progression:

The Coding for Good badges were designed to be earned in a specific order. The badge progression is:

- Coding Basics
- Digital Game Design
- App Development

Plug It In!: The Cadette Coding for Good badges are unplugged — no device needed! However, if girls want to practice coding on a computer as part of the badges, you can use VidCode, a web-based platform that teaches creative coding through JavaScript. See the **Cadette Coding for Good Badges – Plug It In** meeting aid for more information on how to access VidCode and support girls through the plugged activities.

Girl Leaders: At this point, your girls might be ready to lead the meetings, and that's fantastic! To help, you might decide as a troop on girl leaders for each of the badge meetings. Share the meeting plan and meeting aids with your girl leaders with plenty of time before the meeting to give time to prepare to lead. If they have any ideas or ways to improve the activities for their Girl Scout sisters, give them the opportunity to try it out!

Use the Talking Points (But Make Them Your Own): In each meeting, you'll find suggested talking points under the heading "Things to Know." 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.

Use Girl Scouts' Three Processes: Girl-led, learning by doing, cooperative learning: These three processes are the key to making sure Cadettes 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. Remember to keep the meetings girl-led so you can help create an experience where girls know they can make choices and have their voices heard.

Leave Time for the Closing Ceremony: If Cadettes are having fun with an activity, 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 Cadettes leave a meeting, they’ll remember how much fun it was to do an activity, but they may not realize what its relationship to coding was, unless you tell them.

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

- Pointing out how they acted as programmers. (For example: They created an app to solve a problem or a game to build awareness. They struggled a bit with a challenging activity — but they persisted. Now they know that they can solve hard problems if they keep trying.)
- Reminding girls that they are already programmers — and that it’s fun to solve problems using coding.
- Letting them know that they have what it takes to continue exploring STEM.

These simple messages can boost girls’ 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 Cadettes will remember their whole lives. Try to capture those memories with photos or videos. Cadettes love remembering all they did, and it’s a great way for parents to see how Girl Scouting helps their Cadettes!

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

To Prepare for the Meetings:

Before each meeting, you'll find an Overview, notes to Prepare Ahead, and a Materials List, all specific to that meeting.

Before each meeting, read through this guide and any meeting aids. This will help you become familiar with the flow of the meeting. As you prepare, it's important to understand the activity steps and Things to Know, but feel free to adapt the activities to fit your troop, meeting time allotment, and available materials.

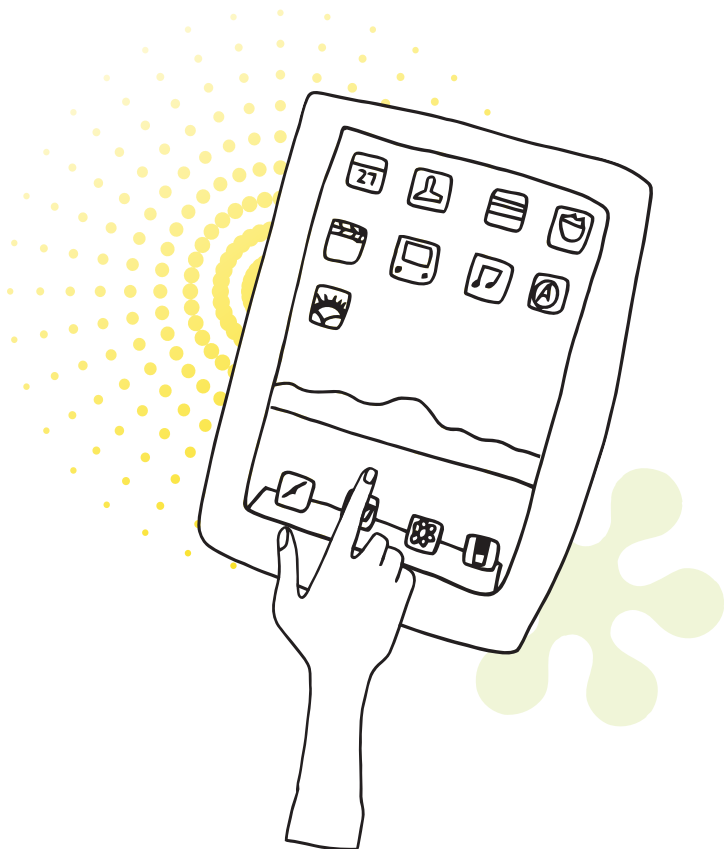
Handouts specific to the meetings are listed in the Prepare Ahead section of each meeting. In addition, the following handouts are available in the Meeting Aids for every meeting:

- **Cadette Coding for Good Badges Materials List:** Each meeting has its own materials list. However, if you like to do all your supply shopping at one time, use this handout. It includes the materials needed for all three Cadette Coding for Good badges.
- **Cadette Coding for Good Badges Glossary:** This is a list of words introduced in the Cadette Coding for Good badges with definitions.
- **Cadette Coding for Good Badges – Plug It In:** If girls want to practice coding on a computer as part of the Coding for Good badges, you can use VidCode. This toolkit has for more information on how to access VidCode and support girls through the plugged activities.
- **Think, Pair, Share:** These facilitation tips will help you ensure that every girl's voice is heard during brainstorming activities.

Go over new words Cadettes can learn. In the Prepare Ahead section for each meeting, you'll see a list of words Cadettes may or may not know and how to define them. You can find a full list of vocabulary for the badges in the **Cadette Coding for Good Badges – Glossary**.

Gather materials. Before each meeting, gather materials for the meeting's activities. If your meeting location doesn't have a flag, bring a small one that you can take turns holding or hang in the room.

Each meeting includes its own materials list. However, if you like to do all your supply shopping at one time, use the **Cadette Coding for Good Badges – Materials List** handout. It includes the materials needed for all of the badges.



Badge Series and Meeting Length

- This series of badges has been designed to fit into six 90 minute troop meetings.



- The times given for each activity may be different depending on how many girls are in your troop. Before each meeting, review the activities and time allotment to determine how much time your troop will need to complete the activities. You can adjust times for each activity as needed.
- Give girls 10- and 5-minute warnings before they need to wrap up the last activity so you'll have time for the Closing Ceremony.

Get Help from Your Family and Friends Network

Your Friends and Family Network can include:

- Cadettes' parents, aunts, uncles, older siblings, cousins, friends, etc.
- Other volunteers who have offered to help with the meeting.

Ask your Network to help:

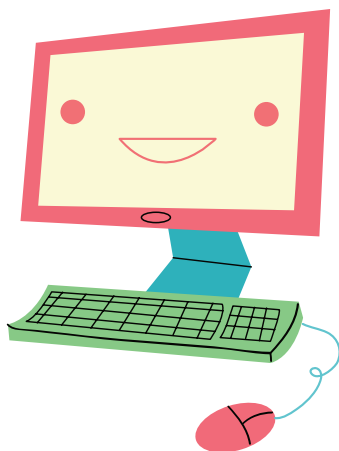
- Bring supplies or other materials for the meetings.

Award Connection

Girls earn three badges:

- Coding Basics
- Digital Game Design
- App Development

Note to Volunteers: You can purchase the awards from the [Girl Scouts Shop](#) or from your council.



Coding for Good BADGE BREAKDOWN

CODING BASICS 1

- 1: As Everyone Arrives:** Discover & Discuss Memes
- 2: Opening Ceremony:** What's a Meme?
- 3:** Learn About Functions and Arguments
- 4:** Explore How Memes Are Created
- 5:** Write Pseudocode for a Meme
- 6. Closing Ceremony:** Coding Basics Flash Chat

- Cadettes learn some of the basics of coding.
- They play a game to learn about algorithms, pseudocode, JavaScript, function, and arguments.
- They explore memes and how they convey their messages.
- They write pseudocode with functions and arguments to design their own memes with a positive message.
- They reflect on how memes can impact society and consider how coding is the powerful tool behind memes and social media.

CODING BASICS 2

- 1: As Everyone Arrives:** Back-to-Back Drawing
- 2: Opening Ceremony:** Get Your Message Across
- 3:** Write Shareable Code
- 4:** Share Your Meme
- 5. Closing Ceremony:** Coding Basics Awards

- Cadettes write shareable code and explore ways to share memes.
- They translate their pseudocode into code using an X-Y coordinate grid and JavaScript-style syntax to combine images and text and create their memes.
- They explore the social aspect of memes as they give and get feedback, consider how memes go viral and ways to spread their memes, and share their finished memes.
- They earn their Coding Basics badge at the end of this meeting.

DIGITAL GAME DESIGN 1

- 1: As Everyone Arrives:** Game Elements Matching Game
- 2: Opening Ceremony:** How Games Can Be Used "for Good"
- 3:** Develop a Game Scenario
- 4:** Play Your Game
- 5. Closing Ceremony:** Digital Game Design Awards

- Cadettes begin to explore video game design and how games can make a positive change in the world.
- They design a pixelated avatar.
- They follow an array to create a game character.
- They choose a superpower for their character and write an array for an icon based on the superpower.
- They reflect on the design process used to create video games and consider how coding is a powerful tool to create games that entertain, educate, and help others.

DIGITAL GAME DESIGN 2

- 1: As Everyone Arrives:** Game Elements Matching Game
- 2: Opening Ceremony:** How Games Can Be Used “for Good”
- 3:** Develop a Game Scenario
- 4:** Play Your Game
- 5. Closing Ceremony:** Digital Game Design Awards

- Cadettes explore game elements and scenarios before they play their games.
- They learn the basic elements of a game and develop a game scenario.
- They use their avatars to play through the game scenarios they’ve created.
- They reflect on how role-playing games can give people ways to address real issues they face and how video games could be positive influences in people’s lives.
- They earn their Digital Game Design badge at the end of this meeting.

APP DEVELOPMENT 1

- 1: As Everyone Arrives:** Brainstorm Healthy Habits
- 2: Opening Ceremony:** Develop Apps “for Good”
- 3:** Learn About Personal Data Collection and Visualization
- 4:** Write an Array to Store Personal Data
- 5.** Create a Personal Data Collection Plan
- 6. Closing Ceremony:** Idea Sparks

- Cadettes learn how to store data with arrays, how apps display that data, and how to collect and analyze data for personal improvement.
- They learn about data visualization and create a bar chart to display shared data.
- They write arrays about themselves in JavaScript and play a game to see if they can identify each other by their data.
- They make a plan for collecting personal data before App Development 2.
- They reflect on how apps can be used to motivate positive change.

APP DEVELOPMENT 2

- 1: As Everyone Arrives:** Reflect on Collecting Data
- 2: Opening Ceremony:** Dive Deeper into Data
- 3:** Learn How to Correlate Data
- 4:** Develop a Prototype for a Habit Tracking App
- 5. Closing Ceremony:** App Development Awards

- Cadettes continue to explore app design and how apps can be used to make a difference for other people.
 - They create a scatter plot and look for patterns or correlations in the data they’ve collected since App Development 1.
 - They use elements from JavaScript to create their own prototype for an app that will help to build a healthy habit.
 - They develop a pitch to sell their app prototype to investors or customers.
 - They earn their App Development badge at the end of this meeting.
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