



**Summer**  
**STEM**  
**Challenge**

**2026**

**girl scouts**   
of northern  
new jersey



Summer STEM Challenge runs from Memorial Day through Labor Day (5/26-9/7).

Deadline to complete is **September 7, 2026**

**GSNNJ STEM 2026 Summer Challenge Form**

Once complete, fill out the form at the website above to claim your custom Summer STEM Challenge patch!

*Pre-K entering grade K in Fall of 2026 qualify to complete Daisy requirements*

- Daisy (D) (grades K-1) - 10
- Brownie (B) (grades 2-3) - 15
- Junior (J) (grades 4-5) - 20
- Cadette (C) (grades 6-8) - 25
- Senior (S) (grades 9-10) - 30
- Ambassador (A) (grades 11-12) - 30



**\*Also completes one step for specified GS level badges**

## Engineering & Design

- Automotive Engineering**
  - DBJ\* Learn about the parts of a car and make a 3D model of your dream car with clay
  - D\* Design a vehicle for an animal shelter
  - B\* Design a vehicle built for extreme conditions, like floods or blizzards
- Mechanical Engineering**
  - BJ\* Learn about simple machines
  - J\* Design a vehicle that can move something heavy
  - DBJ\* Create an assembly line to assemble vehicles - LEGO works great for this!
- Craft and Tinker**
  - DBJ\* Learn about tools used in crafting and try one you've never used before
  - DB\* Solve a problem with a craft - invent something new~
  - B\* Craft a toy or tinker with an existing one
  - J\* Upcycle something you already own
- Mechanical Engineering**
  - D\* Design your own board game
  - D\* Design your own roller coaster
  - D\* Design your own model car
  - B\* Design your own fling flyer
  - B\* Design your own leap bot
  - B\* Design your own race car
  - J\* Design your own balloon car
  - J\* Design your own crane
  - J\* Design your own paddle boat
- Robotics**
  - Learn about robotics teams in your area
  - Watch videos of robotics competitions in your area
  - Look at robots in action and keep a record of where you find them
  - D\* Find out what robots can do
  - D\* Learn about the parts of a robot
  - D\* Make a prototype of a robot
  - BJCSA\* Code a robot by completing an [Hour of Code](#).
  - BJCSA\* Learn about the parts of a robot and make a plan for your robot's skills
  - BJCSA\* Make a prototype of your robot and present it to your family and friends or post it online with adult permission

2026 Summer STEM Challenge is made possible through a state-funded grant and delivered in partnership with Girl Scouts councils of New Jersey.

## Environmental Sciences

- Plant a pollinator garden
- Teach a group of younger Girl Scouts how to protect animal habitats
- Pick up trash in your community park
- Go on a hike and keep a field journal of the animals and insects you see
- D\* Find animal tracks outside D\* (Animal Observer Badge)
- B\* Learn about the life cycle of a butterfly and make an egg carton caterpillar
- B\* Observe a spider in its web for one week and record the changes
- Animal Habitats**
  - J\* Observe a domestic animal and a wild animal and note the differences
  - J\* Design a habitat for an imaginary animal and write a care list
  - J\* Choose an endangered habitat to research: arctic circle, gulf coast, Amazon rainforest
- Animal Helper**
  - C\* Research how animals have helped at key points in history and present to your friends or troop
  - C\* Read stories about heroic animals
  - C\* Interview five different pet owners to learn about how their pets make them feel
- Sky**
  - S\* Learn about light pollution and research if your community or state has laws regulating industrial lighting
  - S\* Learn about air pollution and make recommendations to local authorities on how your community can make changes
  - S\* Track the weather for one week and record if the forecasts on three different websites are accurate or not
- Water**
  - A\* Research water rescue and take a course for beginners
  - A\* Become a composer and make your own music from the sounds of water
  - A\* Investigate endangered marine life and make an action plan to present to local authorities
- Shapes in Nature**
  - D\* Make a nature mobile
  - B\* Make a word cloud with all the neat things you find in nature
  - B\* Make a symmetrical spiderweb using sticks
  - J\* Make radial art with birdseed
  - J\* Search for fractals in nature
  - J\* Find the Fibonacci sequence in food, animals, or flowers
- Numbers in Nature**
  - D\* Trace and compare your shadow outdoors with a friend
  - B\* Learn how to measure temperature with crickets
  - B\* Plant an herb or flower garden
  - J\* Learn how to make a sundial and tell time with it
  - J\* Build a barometer to measure air pressure
  - J\* Find a tree's height using shadows
- Design in Nature**
  - D\* Keep a tally while bird-watching
  - B\* Calculate the age of a tree
  - B\* Build a bird feeder and research what birds in your area eat
  - J\* Calculate your pace
  - J\* Calculate elevation changes on a topographic map
  - J\* Make a trail mix that will fuel your body
- Space Science Series**
  - Become a citizen scientist and collect data in your community
  - Make space-themed SWAPS
  - Identify a constellation
  - View a planet from a telescope
  - Research Sally Ride and Victoria Garcia
  - Sleep under the stars
  - D\* Make a pinhole projector to view the sun
  - B\* Draw and label a picture of the planets
  - B\* Model the phases of the moon with Oreos
  - J\* Make models of the planets with salt dough
  - J\* Learn about Mars and design the next Mars rover
  - C\* Use the sun and water to make a rainbow happen
  - C\* Make a print with the sun
  - S\* Learn about how your eyes react to light
  - S\* Practice astrophotography
  - A\* Research 8 women with NASA careers
  - A\* Build your own telescope

## Career Exploration

- Attend a Girl Scout STEM program (1 point per program)
- Visit a science museum (1 point per museum)
- Find and investigate a tide pool
- Visit a zoo, aviary, or butterfly sanctuary (1 point per place)
- Visit a planetarium
- Build your resume and highlight your STEM-related skills
- Visit a science building on a university campus
- Interview a college student
- Make a list or draw a picture of your goals
- Take a step towards achieving your goals
- Record a video message to send to future you
- Draw a picture or write down where you think you will be in 10 years and 20 years
- Interview an adult Girl Scout with a career or interest in STEM

### Career Exploration Series

- D\* Choose a STEM career to learn about
- B\* Make a list of your superhero skills
- BJ\* Learn about the day in a life of a STEM career of your choice
- J\* Make a list of all of your interests and research how a career in STEM could match them
- C\* Research the skills you would need for a STEM career of your choice
- CS\* Explore how you can make a difference in a STEM career
- S\* Research a career you have never heard of before
- S\* Write a letter to future you
- A\* Learn about the history of women in STEM
- A\* Interview a woman in STEM who has a career that interests you
- A\* Learn a new STEM skill that can help you with your future

## Computers & Technology

### Coding Basics

- DBJ\* Research Ada Lovelace, Grace Hopper, Margaret Hamilton
- DB\* Follow a recipe to make your favorite dish and learn about how computers follow user directions with an algorithm
- BJ\* Learn about loops in algorithms and write an algorithm for your nightly routine
- J\* Learn about the sequence of directions in an algorithm by writing a to do list in the order it needs to be done
- J\* Learn about conditionals and write your own IF/ELSE statements to choose what to wear when the temperature change

### Coding Digital Game Design

- C\* Write a pseudocode to create a meme
- S\* Use Boolean logic to create a quiz show
- A\* Choreograph a dance routine in coding language
- DBJ\* Draw a maze and challenge a friend to solve it
- B\* Discover how game design can be used "for good" by playing [Freerice](#)
- J\* Discover how game design can be used to teach people new skills by playing [Coolmathgames](#)
- C\* Design a digital avatar using a computer application
- C\* Watch the tutorials then develop a game scenario in [Scratch](#)
- SA\* Create a customizable character for a video game
- SA\* Watch the tutorials then develop a game scenario with a decision tree in [Scratch](#)

### Coding App Development

- DBJ\* Make a plan to create your very own app and present your idea to your friends or family
- J\* Talk to your community to see what types of apps they use and discover what types of apps they want that don't exist yet
- C\* Develop a prototype for a habit tracking app
- S\* Develop a prototype for a social app to address an issue in your community
- A\* Choose a topic to collect data from your community on, then prototype an app to support the needs as shown by the data
- Create a secret code for a friend to decipher
- Change your passwords to something more secure
- Mentor younger Girl Scouts or give a classroom presentation on how to stay safe online
- Make an online safety rules poster

### Cybersecurity Basics

- D\* Learn how to protect a computer and make your own unique password
- B\* Conduct an egg drop test to find out how to create layers of security
- J\* Find out what malware is and how to avoid downloading a virus
- C\* Learn about two-factor authentication and set it up on any online accounts you have
- S\* Design a Rube Goldberg machine and investigate why cybersecurity specialists use minimization to reduce attempted attacks
- A\* Hide a message in plain sight and learn about steganography

### Cybersecurity Safeguards

- Create a Bring-Your-Own-Device workshop to teach the community how to make their tech more secure
- Give a presentation on how devices can accidentally record conversations
- Visit a senior center and help seniors create more secure passwords
- Partner with a cybersecurity professional to create a video on the ten principles of cybersecurity
- DBJC\* Learn about what information should stay private online
- B\* Make prints of your fingerprint on paper and identify your print type
- BJ\* Write down 3 things you can share online, and 3 things you shouldn't
- BJ\* Figure out who you can trust online
- J\* Create a username that is safe to share online
- J\* Create a secure password and make sure a friend can't guess it
- J\* Find out how information posts online lasts forever
- C\* Read a user agreement and learn why it is important
- S\* Research Faraday cages/bags and how they can be used to protect electronics
- A\* Outsmart the online marketers by removing permissions and asking the app not to track
- A\* Launch your own cyberhealth campaign to educate others on cybersecurity
- Interview local officials about cybersecurity policies
- Make a video on how to spot phishing emails
- Make a poster about identity theft and hang it in a public space

### Cybersecurity Investigator

- D\* Test your powers of observation - name something you can see, hear, feel, and smell
- B\* Learn how to tell an AI image from a real one
- BJ\* Decipher a code like a computer
- J\* Check your household devices to make sure their software is up to date and research why it is important
- JC\* Learn about identity theft and how to protect yourself from it
- C\* Learn how to identify a phishing email
- S\* Investigate the difference between HTTP and HTTPS
- SA\* Roleplay how to handle a cyber crisis
- A\* Determine how a cyber-attack can affect a city
- Use a Digital Data tracker to keep track of your digital footprint for a week

### Digital Leadership

- D\* Use technology for good - make a video to share what you love about Girl Scouts!
- B\* Create a Girl Scout mural with your friends or troop
- J\* Film a video to raise awareness about a topic you care about
- C\* Create an online petition for a cause you care about
- S\* Create a card game to teach people about safe online interactions
- A\* Teach younger Girl Scouts how to be digital leaders through a skit or video

\*Also completes one step for particular GS level badges