

Cybersecurity 1: Basics

Daisy (Grades K-1) STEM



# Cybersecurity 2: Safeguards

Daisy (Grades K-1) STEM



Find out about computer parts and how computers are connected, just like you!

- 1. Find out how computers work
- 2. Find out what safety and protection means
- 3. Discover how you're connected, just like computers are!

When you've earned this badge, you'll know how how computers work and how to stay safe online.

GET THIS BADGE

Find out how to stay safe when you go online.

- 1. Discover what makes you different from others
- 2. Find out what information is private
- 3. Discover who is in your trust circle

When you've earned this badge, you will know what privacy is and how to protect my identity.

# GET THIS BADGE



Cybersecurity 3: Investigator

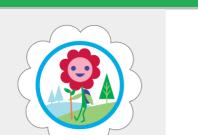
Daisy (Grades K-1) STEM Find out how computers gather information and solve problems.

1. Find out how to search for an answer

- 2. Use clues to figure out who someone is
- 3. Test your powers of observation

When you've earned this badge, you'll know how to use your powers of observation to investigate questions and find solutions.





#### **Eco Learner**

Daisy (Grades K-1) Outdoors



**Mechanical** 

Engineering: Board Game

Daisy (Grades K-1) STEM

# DESCRIPTION

Nature gives us many gifts-now learn some ways to give back by protecting nature.

- 1. Be prepared to protect nature before you go outdoors
- 2. Keep living things safe when you walk in nature
- 3. Learn how to protect nature from trash

When you've earned this badge, you'll have learned three ways to protect the environment when you go outdoors.

#### **GET THIS BADGE**

Create board games and engineer your own game spinner.

- 1. Come up with an idea for your board game
- 2. Design a spinner for your game
- 3. Test your game and make it better

When you've earned this badge, you'll have created your own board game and learned what inventors and engineers do.

# GET THIS BADGE



1. Design and build model cars

Build a model car and test the friction of your car on different surfaces to prepare for a

- 2. Use model cars to test the friction of different surfaces
- 3. Race your cars!

Troop Car Chase!

When you've earned this badge, you'll have learned about friction by building and testing model cars. You will know how to design and test new things that you invent.

**GET THIS BADGE** 

Mechanical Engineering: Model Car

Daisy (Grades K-1) STEM





Mechanical Engineering: Roller Coaster

Daisy (Grades K-1) STEM



# Space Science Explorer

Daisy (Grades K-1) STEM

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Cybersecurity 1: Basics

Brownie (Grades 2-3) STEM

# DESCRIPTION

Engineer your own roller coaster and see how its design affects its speed.

- 1. Make a simple roller coaster car
- 2. Build a model of a roller coaster
- 3. Test your roller coaster

When you've earned this badge, you'll have learned about engineering and motion by building and testing a roller coaster.

GET THIS BADGE

Explore and observe the sky like a real space scientist.

- 1. Explore the Sun
- 2. Observe the Moon
- 3. Meet the Stars

When you've earned this badge, you'll have explored and observed the Sun, Moon, and stars.

# **GET THIS BADGE**

Find out how you use technology and how you can keep your technology safe.

- 1. Find out how you use technology
- 2. Discover what your technology can do
- 3. Find out how to create layers of security
- 4. Find out how to use real-life safety rules when you go online
- 5. Find out how messages travel on the internet

When you've earned this badge, you'll know cybersecurity basics and understand the role technology plays in your life.



# DESCRIPTION

Find out how to be safe when you go online.

- 1. Create your identity
- 2. Find out what information to keep private when you go online
- 3. Find out how to share information safely online
- 4. Find out why you have to be careful about who you trust online
- 5. Test your knowledge of online safety rules

When you've earned this badge, you'll know what information is private and how to share information safely.

GET THIS BADGE

Put on your detective hat and solve cyber crimes.

- Crack a code to solve a problem
   Investigate what's real and fake in photos
- 3. Find out about digital footprints
- 4. Investigate how a computer virus can spread
- 5. Explore a cyber attack

When you've earned this badge, you'll know how to use investigative skills to spot problems in the cyber world.

# **GET THIS BADGE**

Find out how to treat outdoor spaces with kindness and teach others how they can, too.

1. Think of ways to help the outdoors

- 2. Observe outdoor spaces
- 3. Build a safe campfire
- 4. Take care of wildlife
- 5. Practice being kind

When you've earned this badge, you'll have found new ways to protect our natural world and the living things in it.

**GET THIS BADGE** 



**Cybersecurity 2:** 

**Safeguards** 

Brownie (Grades 2-3) STEM

Brownie (Grades 2-3) STEM



**Eco Friend** Brownie (Grades 2-3) Outdoors





Mechanical Engineering: Fling Flyer

Brownie (Grades 2-3) STEM

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Design, build, and test things like an engineer as you create your own Leap Bot.

- 1. Learn about springs
- 2. Build your Leap Bot
- 3. Create a way to test how well your Leap Bot performs
- 4. Record the results of your test
- 5. Share your results

When you've earned this badge, you'll have learned about engineering, gravity, and force by building and testing a Leap Bot. You will know how to build and test a new product.

GET THIS BADGE

# Mechanical Engineering: Leap Bot

Brownie (Grades 2-3) STEM

# DESCRIPTION

Work like an engineer to create a Fling Flyer, an airplane you'll make, and explore what keeps it and other things, such as birds, planes, and space ships, in the air.

- 1. Learn about forces that affect flight
- 2. Design and build a Fling Flyer
- 3. Test your Fling Flyer
- 4. Analyze and share your results
- 5. Brainstorm ways to improve your design

When you've earned this badge, you'll have learned about the forces that affect flight as you design, build, and test a Fling Flyer. You'll know how to design an investigation-and fine-tune your design after testing it, just like engineers.



Mechanical Engineering: Race Car

Brownie (Grades 2-3) STEM





Brownie (Grades 2-3) STEM

# DESCRIPTION

Design, build, and test your own race car to explore how science can make a faster race car!

- 1. Learn how design can affect speed
- 2. Design and build your race car
- 3. Design your racetrack
- 4. Conduct a fair test and record results
- 5. Share what you learned

When you've earned this badge, you'll have designed a race car and a race track and carried out "fair tests" to learn how design affects speed.

#### **GET THIS BADGE**

Investigate the complexities of the sky as you learn to see things in a new way.

- 1. Meet the neighbors
- 2. See more than before
- 3. Investigate the Moon
- 4. Be a stargazer
- 5. Celebrate and share

When you've earned this badge, you'll know how to investigate the Sun, Moon, planets, and stars.

#### **GET THIS BADGE**

Find out how computers talk to each other.

- 1. Find out how computers read information
- 2. Discover how networks work
- 3. Find out what protocols are and create one
- 4. Explore computer communication protocol
- 5. Find out what malware is

When you've earned this badge, you'll know the basics of cybersecurity and how computers communicate.

#### **GET THIS BADGE**



Cybersecurity 1: Basics

Junior (Grades 4-5) STEM



BADGE	DESCRIPTION
****	Find out how to keep your online identity safe. 1. Create and protect a username 2. Create and protect a password 3. Discover how you share information and what to share 4. Find out how information online can last forever 5. Find out who is trustworthy online
<b>Cybersecurity 2:</b> <b>Safeguards</b> Junior (Grades 4-5) STEM	When you've earned this badge, you'll know know how to protect your online identity and stay safe online.
	<ol> <li>Become a cybersecurity investigator and learn how to spot threats online.</li> <li>Create and crack a shift cipher code</li> <li>Find out how updates can help your security</li> <li>Explore identity theft</li> <li>Find out what to do if your identity is stolen</li> <li>Investigate if a message is real or fake</li> </ol>
Cybersecurity 3: Investigator	When you've earned this badge, you'll know how computers use codes to communicate and how to spot cyber crime.
Junior (Grades 4-5) STEM	GET THIS BADGE
	Find out how to protect the environment when you go on a camping trip. 1. Learn the Leave No Trace Seven Principles 2. Plan meals with the environment in mind 3. Prepare a minimal impact campsite 4. Have fun with Leave No Trace 5. Take a conservation hike
<b>Eco Camper</b> Junior (Grades 4-5) Outdoors	When you've earned this badge, you'll have learned skills for minimal impact camping and know how to protect the environment when you go outdoors.





Mechanical Engineering: Balloon Car

Junior (Grades 4-5) STEM



#### Mechanical Engineering: Crane

Junior (Grades 4-5) STEM

# DESCRIPTION

Learn about air power and create an alternative fuel car.

- 1. Learn about potential and kinetic energy
- 2. Design and build a balloon car
- 3. Test your balloon-powered car
- 4. Analyze and share results
- 5. Brainstorm ways to improve your design

When you've earned this badge, you'll know how to engineer a balloon-powered car and understand potential energy, kinetic energy, and jet propulsion.

**GET THIS BADGE** 

Learn about simple machines and how they work together as you build your own heavylifting crane.

- 1. Explore simple and compound machines
- 2. Design and build a crane
- 3. Test your crane
- 4. Analyze and share your results
- 5. Brainstorm ways to improve your design

When you've earned this badge, you'll know how to build and test a crane and understand simple and compound machines.





Mechanical Engineering: Paddle Boat

Junior (Grades 4-5) STEM



Eco Trekker

Cadette (Grades 6-8) Outdoors

# DESCRIPTION

Explore how paddle boats work and engineer your own paddle boat.

- 1. Explore how paddle boats work
- 2. Design and build a rubber band-powered paddle boat
- 3. Test your rubber band-powered paddle boat
- 4. Analyze and share your results
- 5. Brainstorm ways to improve your design

When you've earned this badge, you'll know how to build and test a paddle boat and understand buoyancy, potential energy, and kinetic energy.

**GET THIS BADGE** 

Plan and take an outdoor trek-with minimal environmental impact.

- 1. Learn how to make minimal impact on a trek
- 2. Plan an eco trek with a purpose
- 3. Practice an eco skill while on your trek
- 4. Make a difference on your eco trek
- 5. Make a difference after your eco trek

When you've earned this badge, you'll have learned the skills for minimizing your impact on the environment while planning and taking an outdoor trek.

# GET THIS BADGE



#### Robotics 1: Designing Robots

Cadette (Grades 6-8) STEM Build a prototype of a new kind of robot that could help someone to overcome a daily obstacle. Decide on a challenge, brainstorm solutions, plan, build a prototype, and test it to see how well it meets the challenge.

- 1. Pick a challenge
- 2. Explore possible solutions
- 3. Plan your prototype
- 4. Build a prototype
- 5. Get feedback on your robot

When you've earned this badge, you'll know how to design a robot and build a prototype.



Robotics 2: Programming Robots

#### Cadette (Grades 6-8) STEM

# DESCRIPTION

To help you understand how robots work, learn about the parts that make up a robot. Get started with electronics by making a simple sensor, something robots use to function without human operators. Then practice coding robots using important programming concepts like functions and loops.

- 1. Learn about robots
- 2. Build a robot part: simple sensors
- 3. Make a box model robot with sensors
- 4. Learn about programming
- 5. Write a program for a robot

When you've earned this badge, you'll understand how robots work and how to control them.

#### **GET THIS BADGE**



#### Robotics 3: Showcasing Robots

Cadette (Grades 6-8) STEM After engineers build a working version of their robots, they release them to the public. They may enter them into challenges and competitions or market them through a website or crowd-funding campaign. Now that you've built your robot, share your design with others and explore a future in robotics.

- 1. Learn about robotics events and organizations
- 2. Create a presentation about your robot
- 3. Present your robot pitch to others for feedback
- 4. Find out about robotics opportunities for teens
- 5. See robot makers and robots in action

When you've earned this badge, you'll know how to share your robot designs with the world.





Journey: Think Like a Programmer

Cadette (Grades 6-8) STEM Journey

# DESCRIPTION

In this Journey, you will:

- 1. Find out how programmers use computational thinking to solve problems
- 2. Do 3 computational thinking activities: categorize various objects as "Computer" or "Not a Computer" to explore the four tasks that define a computer, create a cardsorting algorithm to learn about processing, and design technology that will best meet a user's needs using user-centered design.
- 3. Plan a Take Action project that helps others. If you're a Girl Scout volunteer, go to Volunteer Toolkit for complete meeting plans and activity instructions.

Learn more about how to earn your Take Action Award - and help your community - with the Girl Scout Take Action Guide. Then use your leadership skills to earn your Silver Award, the highest award for Girl Scout Cadettes!

# Get This Journey



#### Journey: Think Like an Engineer

Cadette (Grades 6-8) STEM Journey In this Journey, you will:

 Find out how engineers use design thinking to solve problems.
 Do 3 design thinking activities: design and build prototypes of a life vest for a dog, a model camp cabin inspired by nature, and a prosthetic leg for an elephant.
 Plan a Take Action project that helps others.

Learn more about how to earn your Take Action Award - and help your community - with the <u>Girl Scout Take Action Guide</u>. Then use your leadership skills to earn your Silver Award, the highest award for Girl Scout Cadettes!

Get This Journey





**Eco Explorer** 

Senior (Grades 9-10) Outdoors

# DESCRIPTION

Become an eco explorer as you get hands-on experience with environmental issues and help make positive changes to the environment.

- 1. Meet an eco explorer
- 2. Explore biodiversity
- 3. Investigate a global ecosystem issue
- 4. Plan a trip to explore and work on an issue
- 5. Share what you learned

When you've earned this badge, you'll have researched different environmental issues and taken at least one trip to see how an area is impacted.

#### **GET THIS BADGE**



#### Journey: Think Like a Programmer

Senior (Grades 9-10) STEM Journey In this Journey, you will:

- 1. Find out how programmers use computational thinking to solve problems.
- 2. Do 3 computational thinking activities: create rules for how to stack cards to share messages and learn about encoding information, develop an algorithm for building a simple block arrangement, and test whether an app will meet a user's needs to explore user-centered design.
- 3. Plan a Take Action project that helps others. If you're a Girl Scout volunteer, go to Volunteer Toolkit for complete meeting plans and activity instructions.

Learn more about how to earn your Take Action Award - and help your community - with the Girl Scout Take Action Guide. Then use your leadership skills to earn your Gold Award, the highest award for Girl Scout Seniors and Ambassadors!

Get This Journey





#### Journey: Think Like an Engineer

Senior (Grades 9-10) STEM Journey

# DESCRIPTION

In this Journey, you will:

- 1. Find out how engineers use design thinking to solve problems.
- 2. Do 3 design thinking activities: design and build prototypes of a can holder that isn't harmful to animals, a kinetic sculpture, and an assistive device for the elderly.
- 3. Plan a Take Action project that helps others. If you're a Girl Scout volunteer, go to Volunteer Toolkit for complete meeting plans and activity instructions.

Learn more about how to earn your Take Action Award - and help your community - with the Girl Scout Take Action Guide. Then use your leadership skills to earn your Gold Award, the highest award for Girl Scout Seniors and Ambassadors!

#### Get This Journey



#### Robotics 1: Designing Robots

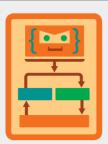
Senior (Grades 9-10) STEM Build a prototype of a new kind of robot that helps or replaces people who work in difficult or dangerous situations. Decide on a challenge, brainstorm solutions, plan, build a prototype, and test it to see how well it meets the challenge.

1. Pick a challenge

- 2. Explore possible solutions
- 3. Plan your prototype
- 4. Build a prototype
- 5. Get feedback on your robot

When you've earned this badge, you'll know how to design a robot and build a prototype.





# Robotics 2: Programming Robots

Senior (Grades 9-10) STEM

# DESCRIPTION

To understand more about how robots work, explore the parts and systems that make up a robot, and then learn about different ways to control a robot, including computer programming.

1. Learn about robots

- 2. Build a robot part: robot arm
- 3. Learn how robot systems work together
- 4. Learn about programming
- 5. Write a program for a robot

When you've earned this badge, you'll understand how robots work and how to control them.

#### **GET THIS BADGE**



#### Robotics 3: Showcasing Robots

Senior (Grades 9-10) STEM After engineers build their robots, they show them to others and enter them into challenges and competitions. Now that you've built your robot prototype, it's time to share your design with others.

1. Create a presentation about your robot

- 2. Present your robot pitch to others for feedback
- 3. Hold a mini robotic scompetition
- 4. Explore robotics opportunities in high school, college, and beyond
- 5. See robot makers and robots in action

When you've earned this badge, you'll know how to share your robot designs with the world.





# **College Knowledge**

Ambassador (Grades 11-12) Life Skills

# DESCRIPTION

From test prep to financial aid, explore the ins and outs of the college admissions process.

- 1. Explore your options
- 2. Start the admissions process
- 3. Make a financial plan
- 4. Get set for success
- 5. Build healthy habits

When you've earned this badge, you'll understand the steps in the college admissions process and be prepared to attend the school of your choice.

# GET THIS BADGE



#### **Eco Advocate**

Ambassador (Grades 11-12) Outdoors Discover a nature issue that's important to you, find solutions, and make a difference.

- 1. Learn what eco advocates do
- 2. Find an issue you're passionate about
- 3. Come up with a solution
- 4. Advocate for your issue
- 5. Teach others how to advocate for your cause

When you've earned this badge, you'll have learned how to advocate for environmental issues concerning nature.





#### Journey: Think Like a Programmer

Ambassador (Grades 11-12) STEM Journey

# DESCRIPTION

In this Journey, you will:

- 1. Find out how programmers use computational thinking to solve problems.
- 2. Do 3 computational thinking activities: build a message-sending machine out of everyday objects to learn about binary, develop an algorithm to find the smallest playing card in a row of cards, and design an app that solves a problem for others to explore user-centered design.
- 3. Plan a Take Action project that helps others. If you're a Girl Scout volunteer, go to Volunteer Toolkit for complete meeting plans and activity instructions.

Learn more about how to earn your Take Action Award - and help your community - with the Girl Scout Take Action Guide. Then use your leadership skills to earn your Gold Award, the highest award for Girl Scout Seniors and Ambassadors!

# Get This Journey



# Journey: Think Like an Engineer

Ambassador (Grades 11-12) STEM Journey In this Journey, you will:

- 1. Find out how engineers use design thinking to solve problems.
- 2. Do 3 design thinking activities: design and build prototypes of an animal enrichment product, a zip line course, and mobility equipment.
- 3. Plan a Take Action project that helps others. If you're a Girl Scout volunteer, go to Volunteer Toolkit for complete meeting plans and activity instructions.

Learn more about how to earn your Take Action Award - and help your community - with the Girl Scout Take Action Guide. Then use your leadership skills to earn your Gold Award, the highest award for Girl Scout Seniors and Ambassadors!

Get This Journey



#### Robotics 1: Designing Robots

Ambassador (Grades 11-12) STEM

# DESCRIPTION

Explore the Design Thinking Process as you build a model of a social robot that can make life better for others. Decide on a challenge, brainstorm solutions, plan, build a prototype, and test it to see how well it meets the needs it is designed to address.

- 1. Pick a challenge
- 2. Explore possible solutions
- 3. Plan your prototype
- 4. Build a prototype
- 5. Get feedback on your robot

When you've earned this badge, you'll know how to design a robot and build a prototype.

# **GET THIS BADGE**



#### Robotics 2: Programming Robots

Ambassador (Grades 11-12) STEM To help you understand how robots work, learn about the parts that make up a robot. Get started by making a simple motorized robot to see how robot parts work together. Then practice coding robots, using important programming concepts, like functions and loops.

- 1. Learn about robots
- 2. Build a robot model: motorized robot
- 3. Explore the way robotics systems work together
- 4. Learn about programming
- 5. Write a program for a robot

When you've earned this badge, you'll understand how robots work and how to control them.



#### Robotics 3: Showcasing Robots

Ambassador (Grades 11-12) STEM

# DESCRIPTION

After engineers build their robots, they share their work with others through challenges, competitions, or marketing campaigns. Now that you've built your robot, share your design with others and explore your future with robotics.

- 1. Learn about robotics events
- 2. Hold a mini robotics event
- 3. Give a presentation about your robotics activities
- 4. Find out about robotics career opportunities
- 5. See robot makers and robots in action

When you've earned this badge, you'll know how to share your robot designs with the world.