

AWARD/BADGE

DESCRIPTION



Animal Habitats

Junior (Grades 4-5) STEM Outdoors



Automotive 1: Design

Junior (Grades 4-5) STEM



When you've earned this badge, you will know more about wild animals and how to protect their homes.

GET THIS BADGE

Find out about wild animals
 Investigate an animal habitat
 Create an animal house
 Explore endangered habitats
 Help protect animal habitats

Do you want to take a ride in your dream car? Before you can do that, you need to design it! Discover how to create vehicles by sketching and sculpting a model.

- 1. Explore mobility across time
- 2. Conduct automotive market research
- 3. Create your vehicle's design criteria
- 4. Sketch a vehicle to meet your criteria
- 5. Sculpt and share your vehicle

When you've earned this badge, you'll know about innovation and market research. You'll know how to create criteria, sketch, and sculpt a vehicle.

GET THIS BADGE



Automotive 2: Engineering

Junior (Grades 4-5) STEM Find out how automotive engineers fuel the future by building and testing vehicles. Then, create your own model of an alternative fuel vehicle!

1. Learn about simple machines in vehicles

- 2. Engineer a vehicle that uses alternative fuel
- 3. Build a vehicle prototype
- 4. Test and revise your vehicle prototype
- 5. Share your vehicle prototype and testing results

When you've earned this badge, you'll know how to use the Design Thinking Process to plan, build, test, and improve prototypes.

GET THIS BADGE

Find out more about where animals live, how they play, and how humans can help them.



AWARD/BADGE	DESCRIPTION
	 Explore how automotive manufacturers build lots of vehicles without wasting time and how they make sure the vehicles are ready for the road! 1. Experience the manufacturing process 2. Learn about the automotive manufacturing process 3. Plan your own automotive manufacturing process 4. Manufacture a set of vehicles 5. Innovate your automotive manufacturing process
Automotive 3: Manufacturing	When you've earned this badge, you'll know how high quality vehicles are manufactured.
Junior (Grades 4-5) STEM	GET THIS BADGE
	Find out how programmers write computer programs for computers to solve problems.
~ 1 0	1 Create algorithms for a computer that follow a sequence

- 2. Use loops to improve your algorithm
- 3. Keep your code interesting with conditionals
- 4. Create your own set of commands that use conditionals
- 5. Learn about women in computer science

and how people can use computers to help others.

Coding for Good 1: Coding Basics

Junior (Grades 4-5) STEM



Coding for Good 2: Digital Game Design

Junior (Grades 4-5) STEM Find out how programmers create a video game that is fun and helps solve a problem.

When you've earned this badge, you'll know how programmers write computer programs

- 1. Discover how game design can be used "for good"
- 2. Explore tools used to develop digital games
- 3. Plan a maze game
- 4. Build, test, and improve your maze game using iteration
- 5. Share your game with others

GET THIS BADGE

When you've earned this badge, you'll know how to use iteration to plan, build, and test a game "for good."











AWARD/BADGE



Digital Photographer

Junior (Grades 4-5) STEM Life Skills Art

Entertainment Technology

Junior (Grades 4-5) STEM Art



Journey: GET MOVING!

Junior (Grades 4-5) STEM Journey

DESCRIPTION

Find out how to capture a winning photo with your digital device, whether you're using a phone, tablet, laptop, or digital camera.

- 1. Learn about digital cameras from an expert
- 2. Take tons of photographs!
- 3. Edit three photos
- 4. Make a digital photo project
- 5. Share your photos

When you've earned this badge, you'll know how to use a digital camera to create one-of-a-kind photos.

GET THIS BADGE

Explore the ins and outs of entertainment technology.

- 1. Animate your own artwork
- 2. Dig into video game development
- 3. Try the science of amusement park rides
- 4. Create your own special effects
- 5. Surf a sound wave

When you've earned this badge, you'll know the science behind the world of entertainment.

This badge comes in a packet that includes the Digital Photographer, Staying Fit, Musician, Entertainment Technology, and Scribe badges.

GET THIS BADGE

In this Journey, you will:

- 1. Explore energy and how to use it wisely by interviewing power-use experts and conducting an energy audits of a building in your community.
- 2. Plan a Take Action project to fix an energy problem in your community. Your could launch carpools, work to dim the lights on city buildings, or promote energy savings at your school. More Details →



AWARD/BADGE DESCRIPTION In this Journey, you will: 1. Find out how citizen scientists make observations, collect data, and work with scientists to receive feedback on research. 2. Do 3 citizen science activities: sharpen your observation skills through 2 observation games and a SciStarter project. More Details → Journey: Think Like a Learn more about how to earn your Take Action Award - and help your community - with **Citizen Scientist** the Girl Scout Take Action Guide. Then use your leadership skills to earn your Bronze Award, the highest award for Girl Scout Juniors! Junior (Grades 4-5) 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 algorithms to make images with tangrams; create mad libs and craft suncatchers to learn more about algorithms, abstraction, functions, and variables; and create a personal innovation to discover rapid prototyping. More Details → Journey: Think Like a Learn more about how to earn your Take Action Award - and help your community - with Programmer the Girl Scout Take Action Guide. Then use your leadership skills to earn your Bronze Award, the highest award for Girl Scout Juniors! Junior (Grades 4-5)

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 a paper structure that can support the weight of heavy books, an emergency shelter, and a prototype of a structure that can withstand an earthquake's shaking. More Details →

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 Bronze Award, the highest award for Girl Scout Juniors!



STEM Journey

Junior (Grades 4-5) STEM Journey



Math in Nature 2:

Numbers in Nature

Junior (Grades 4-5)

STEM

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My Award and Badge Explorer	
AWARD/BADGE	DESCRIPTION
	Explore what you're interested in and what you care about. Then, create a plan for how you'll change the world! 1. Explore your interests 2. Discover the possibilities 3. Learn about the day-to-day 4. Brainstorm your next steps 5. Share your goals
Junior STEM Career Exploration	When you've earned this badge, you'll know about STEM careers that make the world a better place.
Junior (Grades 4-5) STEM	GET THIS BADGE
	Explore patterns found in nature and use math to create your own. 1. Identify symmetry in nature 2. Explore bilateral symmetry in nature 3. Create nature-inspired art with circular symmetry 4. Find fractals in nature 5. Search for the Fibonacci sequence
Math in Nature 1: Shapes in Nature Junior (Grades 4-5) STEM	When you've earned this badge, you will know about symmetry, fractals, and the Fibonacci sequence. You'll have identified and made patterns inspired by nature. GET THIS BADGE
	Explore how math can be used to tell us all kinds of information about nature, from how tall or old a tree is to the weather, season, or time. 1. Tell time with nature 2. Track the weather 3. Explore the circumference of trees 4. Search for shadows 5. Find the area and perimeter of plants

When you've earned this badge, you will know how to use math to tell time, predict the weather, and learn about trees. You'll know how to measure shadows, perimeter, and area.

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AWARD/BADGE



Math in Nature 3: Design with Nature

Junior (Grades 4-5) STEM



Mechanical

Engineering: Balloon

Car

Junior (Grades 4-5) STEM

DESCRIPTION

Use math to plan and organize an outdoor adventure. Decide where you'll go, how long you'll be gone for, and what you'll bring.

- 1. Find your hiking pace
- 2. Choose a hiking trail
- 3. Find changes in elevation on a map
- 4. Decide how much food to bring
- 5. Pack for your adventure

When you've earned this badge, you will know about different types of maps. You'll know how to calculate distance, pace, elevation changes, and area.

GET THIS BADGE

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

Mechanical Engineering: Crane

> Junior (Grades 4-5) STEM

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.

GET THIS BADGE

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AWARD/BADGE 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 **Mechanical** understand buoyancy, potential energy, and kinetic energy. **Engineering: Paddle GET THIS BADGE Boat** Junior (Grades 4-5) STEM Plan and build a prototype of a robot that solves a global problem. 1. Discover the future of robots 2. Determine your robot's expertise 3. Plan your robot

- 4. Create a prototype
- 5. Get feedback on your robot

When you've earned this badge, you'll know how to plan, build, and share feedback like an engineer by creating a prototype of a robot that solves a global problem.

GET THIS BADGE

Robotics 1: Designing

Robots

Junior (Grades 4-5) STEM

Robotics 1: Programming Robots

Junior (Grades 4-5) STEM Engineer a simple machine that helps a robot land, learn about the robot brain, and create programs for your friends.

- 1. Learn how robots work
- 2. Discover the robot brain
- 3. Learn about programming
- 4. Try simple programming
- 5. Code a robot

When you've earned this badge, you'll know how robots receive instructions in a way similar to the human brain. You will be able to create simple programs that could be run by a robot.



AWARD/BADGE

DESCRIPTION



Robotics 3: Showcasing Robots

> Junior (Grades 4-5) STEM



Space Science Investigator

Junior (Grades 4-5) STEM Now that you have your robot prototype, create a presentation and share your design with others. Then, find out about robot teams and competitions. Create a presentation to share how you designed your robot Tell others how you designed your robot Learn about robotics competitions Learn about robotics teams See robots in action Note: Unlike the other robotics badges, these steps include options. You may be able to complete multiple steps, particularly steps three through five, at once. When you've earned this badge, you will have shared your prototype and design process with others. You will see a robot in action and learn about robotics

teams and competitions. Venture through the Solar System and beyond, and see that space is even bigger than you may have imagined.

- 1. Model the Solar System
- 2. Circle the Sun
- 3. Discover the stars
- 4. Use the tools to explore
- 5. Share your sky

When you've earned this badge, you'll understand that the Earth orbits the Sun, and how far away the Sun, Moon, planets, and stars are from our home planet, Earth.