



This booklet gives girls an overview of the badge requirements and badge steps for the Cadette STEM Career Exploration badge. It also includes interesting background information to spark girls' interest in STEM careers. Volunteers can access the Volunteer Toolkit (VTK) to find complete meeting plans, including detailed activity instructions and handouts.



Cadette

STEM Career Exploration

Imagine yourself 15 or 50 years from now: What are you doing? Have you traveled the world? Gone to space? Invented an app? Whatever it is, you can find a job that helps you do it!

Explore careers that make a difference. Then, map out how you'll help others and change the world!

Steps

1. Explore how you want to make a difference
2. Discover your career possibilities
3. Learn about the day-to-day
4. Brainstorm your next steps
5. Map your career path

Purpose

When I've earned this badge, I'll know about STEM careers and how I can make the world a better place.

HOW WILL YOU CHANGE THE WORLD?

Fill out the chart below to discover how you can make a difference for other people, animals, or the environment!

1. Fill in the column on the left with eight things you're good at or like to do, like dancing, writing, and camping.

2. Fill in the column on the right with eight ways you want to change the world, like protecting natural habitats, curing diseases, or designing robots.

3. For each bracket, choose the option you like more.

4. Continue until you have a final pair. Combine to create your dream job!

**WHAT ARE YOU GOOD AT?
WHAT DO YOU LIKE TO DO?**

1			
2			
3			
4			
5			
6			
7			
8			

STEP

1 Explore how you want to make a difference

We're all part of local, national, and global communities that experience different problems. Each of them has different needs, priorities, and concerns.

By knowing more about our communities and what they need, we can help our neighbors next door and all over the world. So, ask yourself:

- What bothers me? What problems do I want to solve?
- What communities am I a part of? Who do I want to help?
- What do my different communities want or need?
- What's important to my communities? What concerns them?

As you begin to look at different careers, knowing what you care about can help you find a job both that you like and that makes a positive change.

However, once you know how you want to change the world, you need a way to do it!

By knowing what you're good at and what you like to do, you can find a career that you'll like and that you can use to help others.

**WHAT DO YOU CARE ABOUT?
HOW DO YOU WANT
TO MAKE A DIFFERENCE?**

1

2

3

4

5

6

7

8



**I'm going to make
a difference by:**

BUILD THE FUTURE WITH STEM!



Check out these STEM careers that help other people, animals, and the environment.



COMPUTER SCIENCE

- **Analyze “big data”:** Data engineers write code, or instructions, for computers to collect and store large amounts of data (that’s information!).
- **Solve cybercrimes:** Digital forensics experts search for digital clues to keep us, our computers, and all of our data safe.
- **Design robots:** Roboticists build robots that can do jobs that are too hard, dangerous, or boring for humans.

CREATIVE TECHNOLOGY & DESIGN

- **Write creative code:** Programmers code things that are both useful and fun—from designing an app, website, or video game to animating a movie or TV show.
- **Create digital designs:** Tons of jobs use technology to bring an idea to life! Architects use computer software to sketch building plans. Entertainment engineers create museum exhibits that light up and respond to the viewer.
- **Design clothing and products:** Industrial designers 3D print new designs for accessories. Fashion designers can add sensors to make clothing that reacts to changes in weather and body temperature.

HEALTH & WELLNESS

- **Help others to be healthy:** You might first think of a doctor or nurse, but there are tons of jobs in medicine! For example, a sports conditioning specialist trains athletes to be game-ready and stay safe on and off the field.
- **Invent medical devices:** Biomedical engineers solve health care problems by designing things like prosthetics and artificial organs.
- **Cure diseases:** Medical scientists conduct research to investigate how to treat and prevent sickness.

STEP 2 Discover your career possibilities

Once you know what you like to do, what you're good at, and how you want to make a difference, you're ready to dig in and find a career that can help you to change the world!

STEM is a set of tools that can help us understand, design, and build our future. It stands for science, technology, engineering, and math.

Every day, people in STEM careers make our world safer, easier, and more fun. For example:

- An automotive engineer builds and tests vehicles that are safe for drivers and run on fuels that are better for the environment.
- An environmental scientist conducts research about our environment to look for solutions to problems like pollution and climate change.
- An animator designs the graphics for video games and cartoons.

So, how will you use STEM to make a difference?

FOOD & AGRICULTURE

- **Grow more food:** Agricultural engineers find new ways for farmers to grow food and feed more people, like using drones or vertical farming.
- **Farm in a city:** Urban farmers create green space in vacant lots, backyards, even rooftops to create gardens and farms in city settings.
- **Design new recipes:** Food scientists create new flavors and food combinations to make a new dish or product to be made in a factory.

ENGINEERING

- **Understand our world:** Chemical engineers work in chemistry, physics, and biology to analyze and design new foods, drugs, and materials.
- **Build our world:** Civil engineers design infrastructure like bridges, water systems, and roads.
- **Power our world:** Electrical engineers build electronics like motors and sensors.
- **Invent our world:** Mechanical engineers create all types of machines, from batteries to refrigerators.

NATURE & THE ENVIRONMENT

- **Study climate:** Meteorologists predict weather and understand how it affects the earth and people. Hydrologists research how water moves across Earth and solve problems related to accessing clean water.
- **Explore the universe:** Aerospace engineers are experts on flight and help astronauts travel to space. They develop, design, test, and produce aircrafts, spacecrafts, satellites, missiles, and defense systems.
- **Protect nature:** Conservation scientists are experts on how to use land without hurting the soil and water. They work at parks and forests to help communities have enough water, minerals, and trees.



What will
you discover
about your
dream job?

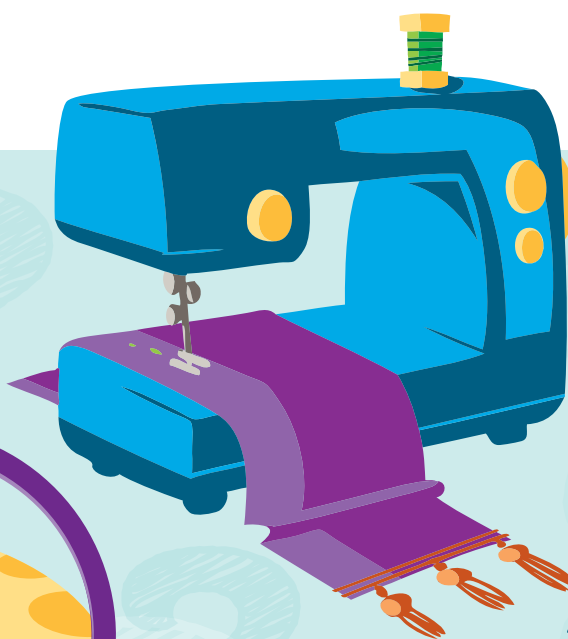
STEP 3 Learn about the day-to-day

When you have a dream for your future, you may want to make sure the job in reality is just as great as you've imagined!

To find out if a career is a good fit for you, try to find out these things:

- **What do people in the job do?** Where do they usually work? What kind of tools do they use? Do they work in a lab, travel into the field, or work in an office?
- **What skills do you need for the job?** What kind of education do people in this job have? What degrees or special certificates do they need to earn?
- **How does this job make a difference?** What impact does the job have on others? How does the job help people, animals, or the environment?
- **What can you do today?** How can you learn more about this job? Are there workshops, field trips, or events?

Once you have more information about the ins and outs, you can make a better decision on whether you see yourself in the job.



FIND A JOB THAT'S RIGHT FOR YOU

Are there a few different careers you're interested in? Fill out the chart below with information about each job to compare them and decide which is right for you!

Job			
Education			
Skills			
Average salary			
What do people in the job do?			
What's the job environment like?			
How does the job help others?			
Other notes			
How interested are you?	☆☆☆☆☆	☆☆☆☆☆	☆☆☆☆☆

TAKE THE NEXT STEP TOWARDS YOUR FUTURE!

Already know what job you're interested in?

Check out some ideas to explore each STEM field below.

COMPUTER SCIENCE

- Solve problems with the Think Like a Programmer Journey
- Explore new skills with the Coding for Good or Cybersecurity three-badge series
- Learn how to code at your Girl Scout council or school or in your community

CREATIVE TECHNOLOGY & DESIGN

- Examine the influence of media with the MEdia Journey and create digital products with the Think Like a Programmer Journey
- Combine computer science badges with others like Marketing, Comic Artist, Book Artist, Woodworker, and Screenwriter to practice your skills
- Take an art workshop or learn about digital design

ENGINEERING

- Solve problems with the Think Like an Engineer Journey or learn about air quality with the Breathe Journey
- Learn new skills with badges like the Robotics three-badge series
- Visit a local makerspace to build your designs (ask your school or Girl Scout council where to go!)

FOOD & AGRICULTURE

- Explore food with badges like New Cuisines and Eating for You
- Join a community garden or start a garden in your backyard
- Take a cooking class or look for ways to make a recipe even yummier

NATURE & THE ENVIRONMENT

- Get outdoors with the Cadette Outdoor Journey or collect data as part of the Think Like a Citizen Scientist Journey
- Learn more with badges like Animal Helpers, Night Owl, Trees, Eco Trekker, Trailblazing, and Space Science Researcher
- Walk your dog, take a hike, or participate in a citizen science project

HEALTH & WELLNESS

- Ask your doctor, school nurse, gym teacher, or coach for tips to stay healthy
- Earn badges like Science of Happiness, Cadette First Aid, Cadette Snow or Climbing Adventure, Cadette Trail Adventure, and Field Day
- Tour a hospital or visit a nursing home

ANY OF THE FIELDS ABOVE

- Explore how to help others with the aMaze Journey
- Become a leader with badges like Good Sportsmanship, Finding Common Ground, Public Speaker, and Financing my Dreams
- Learn how to build a business with Business Plan, Think Big, Budgeting, and Entrepreneur

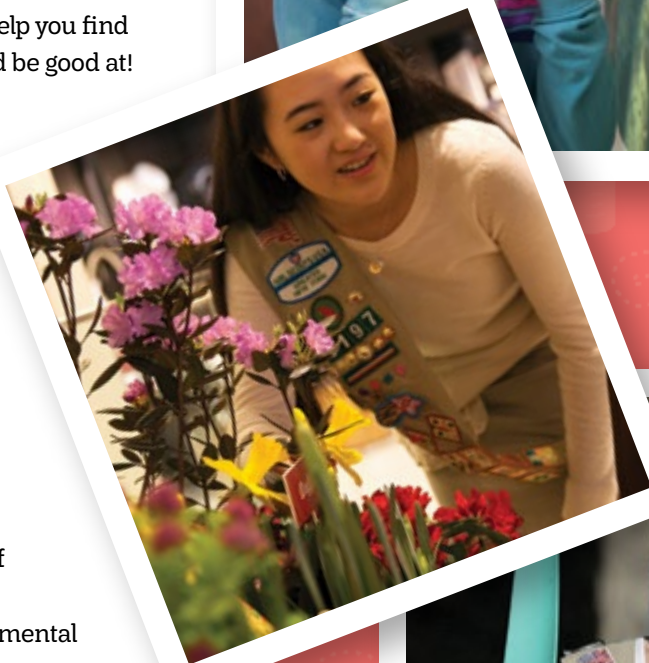
STEP 4 Brainstorm your next steps

Have you ever had a goal you wanted to reach? Was it for something you wanted to do in the next day, month, or even next year?

When you're thinking about your future career, it's important to know your goal and what steps you can take to reach it. This can help you find new hobbies, classes, and eventually a job that you'll like and be good at!

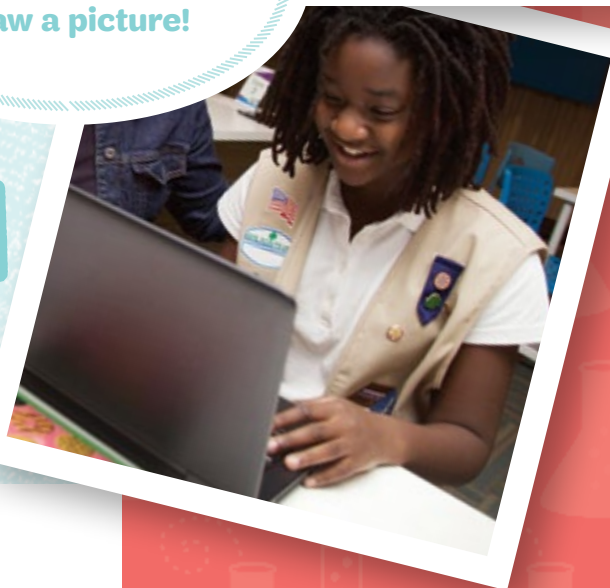
Here are 10 ideas to help you find a career you'll love:

1. Complete a Girl Scout badge, Journey, or Silver Award project
2. Find out about Girl Scout STEM events or camps
3. Visit a science museum, tech center, or makerspace
4. Ask a librarian or guidance counselor for books and information about careers or a certain job you're interested in
5. Search for videos and stories of innovations in STEM
6. Learn a new skill or research more about the topic
7. Choose what to study in school and beyond
8. Find a mentor who can give advice or look for stories of role models
9. Join a club in your community, like robotics or environmental activism, to connect with others
10. Help younger kids learn more about STEM



Dress up, take
a selfie, or
draw a picture!

IMAGINE YOUR STEM FUTURE!



STEP 5 Map your career path

Now, think about where you are today and where you want to be in the future. You have a lot of ideas, but it's time to map them out and get started on your next steps to success!

You can use milestones to help map your next steps. A **milestone** is an action or event marking a big change in your life. This could be anything like your college graduation, moving somewhere new, or starting a new job.

So, to reach your career goal, what are some things you can do:

- By the end of middle school?
- By the end of high school?
- After high school?

Once you know what your steps are for each milestone, create a map to show your entire career path! Fill out the chart on the right to get started.

Then, use a large sheet of paper to draw your vision for the future! Make sure to include your steps and add words and pictures that motivate you to reach your goals.

Once you have a map, you can use it to remind you of your goal and what you need to do to achieve it. You can also share it with others, like your family, teachers, or other mentors, who can help support you on your way to career success!



MAP YOUR MILESTONES

To map your career path, decide on your goal and actions you can take to get there!

What's your career goal?

.....

MILESTONE

1

**By the end
of middle school:**

What's your next step?

.....
.....
.....

How will you do it?

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.....
.....

What support do you need?

.....
.....
.....

MILESTONE

2

**By the end
of high school:**

What's your next step?

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.....
.....

How will you do it?

.....
.....
.....

What support do you need?

.....
.....
.....

MILESTONE

3

**After
high school:**

What's your next step?

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.....
.....

How will you do it?

.....
.....
.....

What support do you need?

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.....
.....

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

- **Mentoring or tutoring younger girls who are interested in STEM.**
- **Organizing a STEM career fair at my school or community center.**
- **Starting a blog to share with others about innovations in STEM.**

I'm inspired to:

Made possible by a generous grant from Lyda Hill Philanthropies.

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First published in 2020 by GSUSA
420 Fifth Avenue, New York, NY 10018-2798
www.girlscouts.org

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Printed in the United States

UPC 64208



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