



STEM Career Exploration

Take a moment and imagine yourself in the future. What are you doing? Are you helping people, protecting the environment, or designing and improving our world? Every day, more and more careers are utilizing science, technology, engineering, and math (STEM) and changing the world for the better. There are so many ways you can make a difference—what role you play is up to you!

In this badge, explore how you might want to impact the world and how STEM can help you do it. Then, take the next step towards your goal for the future and start to make your mark.

Steps:

1. Explore how you want to make a difference
2. Discover your career possibilities
3. Learn about the day-to-day
4. Find your career pathway
5. Take the next step

Purpose

When I've earned this badge, I'll know how STEM can support my goals for the future and help me build a better world.



Words to Know

Agriculture: another word for farming.

Career: work in a specific field where you can grow and develop your skills over time.

Computer Science: a field that focuses on the study of computers, the internet, and how they're used. It includes areas such as programming, robotics, and cybersecurity, and careers in computer hardware engineering, robotics, data engineering, cryptography, and digital forensics.

Creative Technology and Design: a field that combines art, design, and computer science to create things that are both useful and fun, from an app or a building to sound effects or a new pair of sneakers. It includes careers in video game or app design, digital sculpting, architecture, visual design, entertainment engineering, industrial engineering, fashion design, and sound production.

Engineering: a field that focuses on designing and building things like bridges, cars, and other products. People who do this are engineers. Engineers have jobs in every kind of field and build solutions big and small. There are four major types of engineering: chemical, mechanical, electrical, and civil. Specialized careers include aerodynamics engineering, agricultural engineering, and automotive engineering.

Food and Agriculture: a field that focuses on growing, cooking, and consuming food. It includes careers in baking, farming, food science, soil and plant science, culinary arts, agricultural engineering, urban farming, and agricultural science.

Health and Wellness: a field that focuses on human health. Medical professionals may specialize in taking care of patients (adults or children), researching diseases (such as cancer or diabetes), or treating parts of the body, such as the heart (cardiology) and the brain (neuroscience). This field includes jobs like doctor, dentist, personal trainer, nurse, and paramedic and can include careers in mental health, emergency medicine, sports conditioning, biomedical engineering, phlebotomy, speech-language pathology, radiology, genetic counseling, and medical science.

Nature and Environment: a field that focuses on science, nature, space, and the outdoors. It includes jobs like park ranger and geologist and offers careers in marine biology, veterinary medicine, wildlife rehabilitation, zoology, aerospace engineering, hydrology, conservation science, meteorology, climatology, and environmental science.

STEM: an acronym that stands for science, technology, engineering, and math. It's commonly used as shorthand for a wide variety of fields and careers.

Step 1: Explore how you want to make a difference

Think about the world you live in—your neighborhood, community, state, country, and even locations around the world and beyond. Have you ever witnessed something you wished you could change, like homelessness, inequality, limited resources, or pollution? Is there a local or global need that you want to bring awareness to, like health and wellness or clean water accessibility?

You have a unique set of skills and strengths that you can use to make the world a better place. To begin exploring how you can make a difference, find topics you are passionate about. Then use your passions as a starting point to explore how STEM can help you create impact and change!

Choices—do one:

Search for inspiration around you. You never know when you'll be inspired, so seek inspiration all around! Get outside and explore different areas in your community, like parks, your school, and the town center. Watch videos and documentaries or find articles that highlight local, national, and international news. Start asking people you know about their thoughts on the areas you're interested in to see what you can learn from others. As you search, create a list of issues and needs you're passionate about or interested in. What are you drawn to the most? Why is it important to you? Choose one issue to focus on and brainstorm what you can do to make a difference. How might STEM be useful? Does the solution involve designing or building something?

Examine your interests. Sometimes a conversation can inspire new ideas for your future. You can also find connections and commonalities as you learn about other people's interests and perspectives. To explore your interests, try "speed interviews" with your troop or a group of friends. Before you begin, write down some of your interests and issues you care about—maybe maintaining accessible green spaces, minimizing waste, or creating helpful or fun apps. Then spend a few minutes with each person and share with each other what's important to you. Discuss how you want

Build the Future with STEM

Find your purpose.
Learn how STEM can help.

Do you want to promote the performing arts? Create an app that tracks and sends out notifications about local live events and performances.

Do you want to help undernourished communities end hunger? Engineer a nutrition-packed super seed or a growing system tailored for specific conditions.

Do you want to help people have access to clean drinking water? Design a device that can filter minerals, toxins, and contaminants out of undrinkable water.

Do you want to help someone with a health issue? Research existing treatments so you can test new compounds and further the goal of getting better results.

Do you want to help eliminate the amount of waste that humans create? Find a way to reuse tossed items by turning them into something useful like vehicle parts or building insulation.

to make a difference. Then gather with others who have similar interests and find a way to combine your goals. What role will you play? How can you work together to create change? What tools or skills might you need or already have that you can leverage? How might STEM play a part?

Look to others who have made a difference. Search for stories of inspiring Girl Scouts and other people who are changing the world with STEM. Who are the advocates and trailblazers for climate change, hunger, or renewable energy? Search online, in your community, in newspapers, and using other digital resources. What inspired these leaders? How are they using STEM to help others? What did their career path look like? How did they get started? What skills or tools are they using to help their cause? Use all you find to begin thinking about your own future. How can you make an impact and help others with STEM?

Step 2: Discover your career possibilities

Picture your future and the life you want to lead. What kind of work you are doing? Do you see yourself in scrubs helping people who are sick or injured, in a lab coat testing new chemical formulas, or out in the field taking measurements to survey land with a team of developers?

What career fits your passions? A career is more than a job. When your career matches your interests, it offers opportunities for you to grow, help others, and make an impact in your field. STEM provides the tools to further that impact.

For the rest of the badge, explore careers and examine what your future might look like in six different fields of STEM:

- **Computer Science:** Focuses on the study of computers, the internet, and how they're used. It includes areas such as programming, robotics, and cybersecurity.
- **Creative Technology and Design:** Combines art, design, and computer science to create things that are both useful and fun, from an app or a building to sound effects or a new pair of sneakers.
- **Engineering:** Focuses on designing and building bridges, cars, or other products. Engineers may work in many different areas, designing prosthetics for the medical field, agricultural systems to grow more food, or cleaner energy systems that are less harmful to the environment.
- **Food and Agriculture:** Focuses on growing, cooking, and consuming food.
- **Health and Wellness:** Focuses on human health, including taking care of patients, researching diseases, and treating specific parts of the body.
- **Nature and the Environment:** Focuses on science, nature, space, and the outdoors.

Whether you realize it or not, you have a world of career possibilities ahead of you. Your experience in Step 2 will help you narrow down a career to focus on for Step 3. As you find careers you may be interested in, make sure to take note. Search for one that fits your interests and makes the greatest impact!

Choices—do one:

Map careers in STEM. One way to understand all the options available is to represent your ideas visually. Create a mind map for each STEM field or the ones you're most interested in. Brainstorm careers, tools, and skills to add to each map. Add photos, facts, and resources that highlight that field. Then share your maps with others and add their ideas. After, consider which map or part of a map you're most drawn to. Which STEM fields are you most and least familiar with? Check out "Explore a World of STEM" on the next pages. Did you include those careers on your map? Finally, rank the fields in order based on your interest. What is it about that STEM field that interests you the most? Which of the careers might you try (or not try) in the future? Why or why not?

Brainstorm careers. Play a categories game with others to understand all the possibilities of STEM! Go through each STEM field, one at a time. In one minute, silently make a list, brainstorming all the careers you can think of that relate to each field. Examine your lists. Which careers fall into more than one field? In which STEM field are you able to list the most related careers? Which field might you want to learn more about? Then, take turns reading your lists aloud and earning a point for each career on your list that no one else included. As a group, make a compiled list as you share. After a winner is announced, discuss what fields and careers interest you. Which field intrigues you the most? Which career best fits your interests and passions? Do any of your friends share the same interests? Check out "Explore a World of STEM" on the next pages for more ideas!

Complete STEM challenges. The best way to find out more about a topic and decide if you like something is by trying it out! Explore each STEM field with a quick, hands-on experience. Complete the challenges found in "Explore a World of STEM" on the next page to explore the six STEM fields. After, consider each challenge you explored: Which STEM challenge did you enjoy most and least? Which activity sets off a spark of interest or inspiration? What might that tell you about yourself and your future? Based on what you've done so far, which field and career can you imagine for yourself?

► **Explore a world of STEM on pages 5-7.**
Imagine yourself in each field. Try each challenge.
Explore how you can change the world.

Explore a World of STEM

Computer Science

With a career in computer science, you can...

- **Analyze “big data.”** Data engineers write code for computers to collect and store large amounts of data or information.
- **Keep data and networks safe.** Cryptographers write code to encrypt sensitive data, keeping it safe from hackers and providing privacy for people, organizations, and businesses.
- **Code apps, websites, or video games.** Programmers write code to design things that are useful, fun, or both!

Challenge: Imagine you're a programmer and explore how computers follow code. Draw a simple image, like a robot or a house. Then, give a friend step-by-step instructions, or an algorithm, to recreate it. Don't let them see your drawing. They should only follow your instructions! After, compare the two images. Did you end up with the same result? Could you use a different algorithm to get the same result?



Creative Technology and Design

With a career in creative technology and design, you can...

- **Create digital designs.** Digital sculptors create 3D computer models of game characters, vehicles, and other objects for video games, movies, or even 3D printing.
- **Design products.** Industrial designers use design software and other tools to create physical products like toys, shoes, and other items people use every day.
- **Make a statement.** Visual designers illustrate and design products like brochures, ads, and websites for brands and businesses.

Challenge: Imagine you're applying for your dream job. What's your personal vision? What are your qualifications? Tap into your creative energy and design a logo that brands you and your future in STEM. What are the special features of your logo? How does it communicate your message? What technology is involved in creating and sharing it?

Engineering

With a career in engineering, you can...

- **Invent our world.** Chemical engineers work in chemistry, physics, and biology to design new foods, medicines, and materials. Electrical engineers design machines that use electricity, like personal electronics, electric motors, surveillance systems, and electrical systems for vehicles and aircraft.
- **Build our world.** Civil engineers design infrastructure like bridges, water systems, and roads. Mechanical engineers create all types of machines, from batteries to refrigerators.
- **Improve your brakes to work their best.** Aerodynamics engineers test planes and vehicles to find ways to make them safer and operate at their top performance.

Challenge: To try it out, analyze your bicycle or scooter brakes, or ask a friend to borrow theirs. Test the brakes. Then, if it's your bike or scooter, use tools to adjust the brakes. If needed, replace the brakes with new ones and adjust for the best function. Compare how they work before and after. How did you decide on the final adjustment? What would you change about the brakes' design?

► **Important note: Be sure to wear a helmet and protective equipment!**



Food and Agriculture

With a career in food and agriculture, you can...

- **Farm in a city.** Urban farmers create green space in vacant lots, backyards, and even rooftops to cultivate gardens and farms in city settings.
- **Innovate agriculture.** Agricultural scientists study how plants, land, and animals are used to grow food. They look for ways to improve the quality of the food they grow and the output of farming efforts, while lessening the impact on the environment.
- **Grow more food.** Agricultural engineers develop ways for farmers to grow food and feed more people, like using drones or vertical farming.

Challenge: How can you make food more accessible? Explore agricultural engineering and design a vertical garden to bring more fresh food to a community with little space for fields or beds. What spaces would your design work for? What are the dimensions? What materials will you use? How will the hydration system maximize water usage and plant growth?

Health and Wellness

With a career in health and wellness, you can...

- **Practice a specialty.** Medical professionals work in all different fields of medicine. For example, phlebotomists are skilled in taking blood samples for testing; speech-language pathologists focus on speech, language, and swallowing; and genetic counselors help people identify whether they are at risk for certain diseases based on their health histories.
- **Invent medical devices.** Biomedical engineers solve health-care problems by designing things like prosthetics and artificial organs.
- **Conduct research to improve human health.** Medical scientists investigate how to prevent and treat human diseases.

Challenge: Take on the role of a medical scientist. Use magazines, newspapers, or another news source to find a product, practice, or trend that is hazardous to physical or mental health. Then research treatments that may be used. What kinds of warning signs do you see or think should be included? Where would you publish or share your findings and why?



Nature and the Environment

With a career in nature and the environment, you can...

- **Study climate.** Meteorologists predict weather and learn how it affects the earth and people. Hydrologists do research to understand how water moves across the Earth and solve problems related to accessing clean water.
- **Prevent pollution.** Environmental scientists study problems like pollution and how they affect nature and human health.
- **Research and protect nature.** Conservation scientists help communities understand how to best use land without hurting the soil and water.

Challenge: To understand more about nature around you, go outside and remove a rock or layer of mulch. Look at the uncovered sample and collect quantitative data (using numbers) about the different organisms you see. How many ants are there? Pill bugs? Worms? Then collect qualitative, or descriptive, data. What is the soil like? What relationships exist? How might human impact affect this little ecosystem?

How does this career feel to you?

As you learn more about a career, here are some questions to consider:

What are the main tasks for this job?
What else does it involve?

What kinds of tools or machines will I be using?

What skills do I already have or need to learn?

What might be possible in terms of traveling around my community, the country, or the world?

What are the educational requirements? Is a certification program or licensing exam needed?

How can I help others or do good through this job?

How do people work together to solve complex problems in this field?

How do people overcome obstacles to future success?

What other doors does this job open?
What paths can it lead towards?

What are the advantages and disadvantages of having this job?



Step 3: Learn about the day-to-day

Now that you've explored what's possible with STEM, choose one career to explore in depth. It might be your dream job or one you've only just heard of. This is your chance to take that spark, run with it, and find out what you can! You might talk to someone in that role, visit a workplace to see the job in action, or learn more about the career in any way you'd like.

As you learn more about the skills, tools, and other details of the job, pay attention to what you don't like as much as what you do. Envision your potential future and imagine yourself in the career as you learn the ins and outs of what it entails. Use the questions in "How does this career feel to you?" to help you investigate the possibilities of your career choice.

Do this step with friends who have similar interests or on your own with help from an adult, if needed. If you feel at any point that you want to explore another option, go for it! That shift is part of the process, too!

Choices—do one:

Talk to someone in STEM. Connect with someone with a STEM career and get the inside scoop! Find out how they chose their career, the path they took to get where they are, and their day-to-day work experiences. What do they love about their job? What are some of the challenges? What keeps them motivated? What can you learn from them to inform your own career path?

Experience STEM in action. See firsthand how a STEM career works. Schedule a tour of a job site or go on a virtual tour. What are the day-to-day tools, tasks, and skills? What parts of the job seem fun or interesting? Which parts excite you a bit less? How would it feel to you to be a part of that world?

Research a STEM career. Explore resources online or at the library to learn more about a career in STEM. Dive deep and uncover everything you can. Find articles, programs, and research projects. What skills are needed? What are the education requirements, job training, certifications, or licenses needed? Who can you talk to if you want to find out more?

Step 4: Find your career pathway

After looking at all the possibilities of a career in STEM, you may start to see a clearer vision of your future. The end goal is exciting, but so is the path to get there! There are many options for each step on your journey, so the path you take to get to your goal is entirely up to you.

Reflect on everything you've learned so far and consider what else you may need to do or learn about for a career in STEM. Then, map out your pathway and your next steps to reach your future goals. What are some steps that you can take now? What can you do in the near future? What will you do when you've achieved your goal? How will you stay motivated and continue to make a difference? What path will you choose?

If you need somewhere to get started, check out “Ideas for Big Next Steps” on the next page. Where might these steps fit in your plan, if at all?

Choices—do one:

Write a letter to future you. Create a time capsule for your future self about your career plan. Where do you hope to be in 15 years? What will you do to get there? How

do you hope and plan to make a difference? You might include pictures, accomplishments, a dream timeline, related badge activities, or other tokens of inspiration.

Create a vision board. Create a space to organize different steps to reach your goals. What skills do you need to learn? Which program will give you the training you need? Are there steps you can take before you finish high school? What resources are available to you? You might do this in a notebook, binder, or digitally. Add practical items like a list of schools or resources, as well as items to motivate you, like articles on how others are making a difference. If you can, share your vision board with someone in the field you're interested in joining. You might even ask if they can be your mentor!

Team up to reach your goals! Working with others can give you support and motivate you to reach your goals. You can share ideas and tips as well as help each other overcome any challenges together. Connect with someone who has similar career goals. Brainstorm steps towards your career goal and make a plan together. How can you support one another and work as a team? What classes can you take? What clubs can you join or start? How can you stay connected and motivate each other along your paths?





Ideas for Big Next Steps

Community colleges offer two-year programs. You can earn an associate degree for programs such as computer-aided design, electrical technology, applied science, engineering technology, dental hygiene, nursing, electronics, and more.

Colleges or **universities** offer four-year programs. You can earn a bachelor's degree in electrical engineering, computer science, materials science, wireless engineering, aerospace studies, and much more.

Trade, or technical, schools offer training and hands-on experience for specific jobs or skills such as aircraft maintenance, radiology, carpentry, and home inspection. You can earn a diploma or certificate or prepare for a licensing exam.

Internships or **apprenticeships** provide firsthand experience to strengthen job-related skills and networks before going into a career full-time.

Freelance work allows you to work for yourself, take control of your own work experiences, and grow your skills and portfolio.

Other Ideas for Next Steps

- Connect with professionals and experts.
- Take a class, workshop, or online course.
- Join a club at school or volunteer in your community.
- Watch videos to learn a new skill.
- Attend and ask questions at a local job fair.
- Start applications for a program.
- Learn more with Girl Scouts.

Step 5: Take the next step

The only way to figure out your future is by taking the first step towards it. Along the way, you'll continue to learn about your career and yourself. You may discover other strengths or passions that may shift or change your career path entirely, and that's okay!

Every step you take, even if it diverts or redirects you, is a part of your career journey. Embrace each step towards your future and remember that STEM is everywhere—even in the process of finding your path. You learn something new with each step, and it will inform your decisions of what to do next in your journey.

So, what next step will you choose to take? Review all the possibilities that you decided for your career pathway in Step 4 and decide on your next step by choosing an activity below. How does it feel to move closer towards your goal? Can you feel yourself becoming more prepared and ready for your future? Ready to make a difference in the world? Every step you take brings you closer to your goal!

Choices—do one:

Learn something new. Consider the skills you will need to succeed in your career. You can choose to learn a new skill, strengthen a skill you already have, or do something to learn more about your career path. You might join a club, enroll in classes that support your career goals, or

even attend a job fair or trade school open house. You can also talk to an expert who can answer questions you still have. Review the options and opportunities available to you and choose the one that seems most aligned with your goals. How does this step prepare you for your career? Are there any challenges you may face? How will you overcome them? How can this step springboard you to take another? After taking one step, do you feel motivated to continue?

Do something with others. Enrich your experience by connecting with other people. Team up with friends or others in the community who share your interests. How can you work together to reach your goals as individuals and as a collective? Share your career paths, decide on your next step, and do it together. What opportunities are available in person or online? Can you anticipate obstacles you may encounter in this career path? Who can you consult with to learn helpful strategies found in any career or field? How will sharing your experience with others bring you closer to reaching your goals? Take on this journey knowing that you have support along the way! Remember to always inform your caregiver about partnering with adult experts.

Take any step to reach your goal. Decide on your first step towards your career goal and take it. You might earn a related badge from Girl Scouts or use STEM as a tool for your Gold Award project. You might choose to arrange for a job-shadowing experience, join or start a club, or take an online course. Your next step is entirely up to you!





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Volunteer's Guide to the Senior STEM Career Exploration Badge*

Tips and ideas to help you guide your troop through this badge.

Step 1: Explore how you want to make a difference • 30–40 minutes

Ask: Have you ever witnessed something in the world, either local or global, that you wished you could change?

Share: Think about the world you live in—your immediate neighborhood, your local community, your state and country, and even locations around the world and beyond. Not all global issues can be seen in your community, but you can still make the world a better place and work towards a solution. To begin exploring how you can make a difference, find out what you are passionate about. Then use your passions as a starting point to explore how STEM can help you to create impact and change!

Do: Discuss the examples from “Build the Future with STEM” on page 3 in the Senior Booklet.

Tips: Remind Seniors that the goals of the badge are to learn how STEM can support their goals for the future and help them build a better world. Check out the resources in the Volunteer Toolkit to share throughout the badge.

Activity Choices—do one:

- **Search for inspiration around you.** If possible, explore your town center, local parks, or other physical spaces for inspiration. Encourage Seniors to find articles about local, national, and international news. Ask them to think about documentaries that they’ve felt moved by. Ask questions that inspire discussion, such as “Have you ever witnessed homelessness, inequality, or pollution? Is there a local or global need that you want to bring awareness to, like health and wellness or clean water accessibility?” Some Seniors may know people or have experienced some of these issues themselves; it’s okay to talk about it if they want to. Ask for one or two volunteers to make a list or word cloud of issues that arise during the brainstorming session. Next, suggest Seniors form groups based on issues they’re passionate about. Ask questions like, “If you combine your strengths and interests, how can you make a difference? Does the solution involve designing, building, or improving something that already exists?”

Materials: Whiteboard, chart paper, or large paper; markers; newspapers, magazines, computers, etc. for research

- **Examine your interests.** Give Seniors index cards and a few minutes to write down their interests and issues that are important to them. Encourage them to think about what past projects have inspired them and what role they want to play in the world. Then, explain that they will have 2–3 minutes to meet with a partner and learn about each other’s interests. Use a timer to let them know when to switch, or Seniors can simply take turns sharing out to the group. After sharing, suggest they form groups based on what they care about. Ask questions like, “How can STEM be useful in this cause? What tools or skills might you need, or do you already have that you can leverage? What role will you play in this?”

Materials: Index cards or paper; pens or pencils; timer

- **Look to others who have made a difference.** Find and share an inspiring story or video of a woman in STEM. Explain that Seniors might also be the sources of someone else’s inspiration one day. Help them to search online, in their communities, in newspapers, and other digital resources for inspiring Girl Scouts, women, and others who have changed the world with STEM. Challenge Seniors to find out what inspired each person and how they achieved their accomplishments. Ask questions like, “How did they find their passion? How did they get started?” Have Seniors share what they find and discuss how they can use these stories to begin thinking about their own future. Ask questions like, “How can you make an impact and help others with STEM? What can you learn from others’ paths?”

Materials: Newspapers, magazines, computers, etc.

Step 2: Discover your career possibilities • 30–40 minutes

Ask: Picture your future self and the life you want to lead. What is your vision for the kind of work you’re doing?

Share: Maybe you see yourself in scrubs helping sick or

*Detailed choice activities, meeting tools, and additional resources and materials can be found within the Volunteer Toolkit on my.girlscouts.org.

injured people or in a white lab coat testing new chemicals. Maybe you're surveying land and making plans with a team of developers. Whether you realize it or not, you have a world of career possibilities ahead of you. Search for one that fits your interests and makes the greatest impact!

Do: Engage Seniors by asking about their background knowledge of STEM. Ask, "What are some specific careers or fields in STEM that you are already familiar with or interested in? How do they use STEM to make a difference?" Explain, "For the rest of the badge, you'll explore careers and examine what your future might look like in different fields of STEM." List the six STEM fields on large paper and discuss their descriptions, found below and on page 4 of the Senior Booklet. Encourage Seniors to take note of careers that interest them. Explain that for Step 3, they will learn about the day-to-day of a career that matches their interests.

Computer Science: Focuses on the study of computers, the internet, and how they're used. It includes areas such as programming, robotics, and cybersecurity.

Creative Technology and Design: Combines art, design, and computer science to create things that are both useful and fun, from an app or a building to sound effects or a new pair of sneakers.

Engineering: Focuses on building bridges, cars, or other products. Engineers may work in many different areas, designing prosthetics for the medical field, agricultural systems to grow more food, or cleaner energy systems that are less harmful to the environment.

Food and Agriculture: Focuses on growing, cooking, and consuming food.

Health and Wellness: Focuses on human health, including taking care of patients, researching diseases, and treating specific parts of the body.

Nature and the Environment: Focuses on science, nature, space, and the outdoors.

Activity Choices—do one:

- **Map careers in STEM.** If the group is unsure of how to start a mind map, create one together for one of the STEM fields. Using poster paper or chart paper, start with the name of the field in the center. Then, brainstorm and add related careers branching off the center with additional notes (such as tools, skills, etc.) further branching out from each career. After completing one mind map together, ask Seniors to team up and create maps for the remaining STEM fields. They can use colored markers to help distinguish between sections of their map, such as careers, tools, and skills. Encourage them to use the careers and ideas on pages 5–7 in the Senior Booklet to

start them off. After about ten minutes, each team can share their map and add other ideas from the troop. After everyone has shared, ask questions like, "Which map or part of a map are you most drawn to? Which career best fits your interests and passions?"

Materials: *Poster paper or chart paper; pens or pencils; markers or highlighters*

- **Brainstorm careers.** Give each Senior a sheet of paper and have them fold it to make six sections (fold in half, then thirds, and unfold). Explain, "We're going to play a game and brainstorm careers for each STEM field. You'll have one minute for each round. When you share, you'll earn one point for every career on your list that no one else included, so the more ideas you come up with the better!" To begin, choose the first STEM field and start a one-minute timer. At the end of the minute, ask a Senior to read off their list of careers. If any other Senior has that career on their list, they must all cross it off. If no one else has that career on their list, they can circle it and count it as one point. Go around to other Seniors until all the careers on their lists have been mentioned. Do this for all STEM fields, discussing or looking up any careers along the way if they choose. Have Seniors count their points to determine the winner for each field. Then ask questions like, "Which field interests you the most or do you want to learn more about? Which careers seem to best fit your interests and passions?"

Materials: *Paper; pens or pencils; timer*

- **Complete STEM challenges.** Before the meeting, gather materials and review "Explore a World of STEM" on pages 5–7 of the Senior Booklet. Try each challenge on your own, making any adjustments that would make the challenge work better for your troop. If you're meeting in person, Seniors can work through each challenge as a troop, doing one at a time, or split up into pairs to rotate through stations around the room. If meeting virtually, drop off materials ahead of time for Seniors to do the challenges together from home. Afterwards, come together to discuss their thoughts on the challenges and the related careers in each field. Ask questions like, "Which activity or field interests you the most? Which career best fits your interests and passions?"

Materials: *Paper; pencils; bike or scooter; tools to adjust brakes; replacement brakes (optional); magazines, newspapers, or technology to research; outdoor area with a dirt sample*

Step 3: Learn about the day-to-day • 20–30 minutes

Ask: What does your future career in STEM look like?

Share: Now that you've explored what's possible with STEM, choose one career to explore more in depth. It might be your dream job or one you've just heard of. This is your chance to take that spark, run with it, and find out what you can!

You might talk to someone in that role, visit to see the job in action, or learn more about the career in any way you'd like. Do this step with friends who have similar interests or on your own with help from an adult, if needed.

As you learn more about the skills, tools, and other details of the job, pay attention to what you don't like as much as what you do. What skills does this career require that you might be good at, or might need to learn? Envision your potential future and imagine yourself in the career as you learn the ins and outs of what the career entails.

Do: Discuss "How does this career feel to you?" on page 8 of the Senior Booklet. Ask them why they may or may not see themselves in any STEM career. If a Senior makes a comment about women not being present in a particular field, provide encouragement and support. If any Senior feels the career they started learning about doesn't match their interests, encourage them to explore another option. Remind them that a shift can be part of the process.

Activity Choices—do one:

- **Talk to someone in STEM.** Help Seniors connect with professionals in their career or field of interest by reaching out to your network and the troop's family network. If there is a large interest in a particular career, invite a guest to speak to the troop, in person or virtually. Or have a panel of two or three speakers from different STEM careers. Ask that Seniors prepare questions ahead of time, such as how the professional(s) chose their career, what path they took to get where they are, what inspired them and keeps them motivated, etc. If many Seniors have their own unique interests, invite parents/caregivers to help their Senior schedule their own talks. Seniors with similar interests can also pair up. Encourage them to take notes to help them with the next steps of the badge. After, ask Seniors questions like, "How do you feel now after learning from someone in the career? What part of the career excites you the most? What challenges can you foresee?"

Materials: *Pens or pencils; paper*

- **Experience STEM in action.** Help Seniors find opportunities in their career or field of interest by reaching out to your network and looking into local businesses. If there is a large interest in a particular career or field, schedule for the troop to visit a job site and tour in person or virtually. Ask Seniors to prepare questions ahead of time to learn about the day-to-day tools, tasks and skills needed for success. Remind them that it's just as important to learn what they don't as much as what they do like about a job. If many Seniors have their own unique interests, invite parents/caregivers to help their Senior schedule their own visit or virtual tour. Seniors with similar interests can pair up. Encourage them to take notes to help them with the next steps of the badge. After, ask Seniors questions such as, "Which parts of the job seem fun or interesting? Which parts excite you a bit less? How would it feel to be a part of that world?"

Materials: *Pens or pencils; paper*

- **Research a STEM career.** Schedule to meet at the library, if possible, or conduct research together during an in-person or virtual meeting. Have Seniors explore questions like, "What are the main tasks for the job? What are the requirements? What skills are needed? What other doors does this job open?" If Seniors have similar interests, they can work in pairs and in a breakout room if meeting virtually. Encourage them to take notes to help them in the next steps of the badge. After conducting their research, Seniors can share some of their findings. Ask if anyone is considering a new career after what they learned and encourage them to continue their research until they find a career that excites them.

Materials: *Computers, tablets, or smartphones; pens or pencils (optional); paper (optional)*

Step 4: Find your career pathway • 20–30 minutes

Ask: What do you need to do to reach your career goal?

Share: After looking at all the possibilities of a career in STEM, you may start to see a clearer vision of your future. The end goal is exciting, but so is the path to get there! There are many options for each step of your journey, so the path you take to get to your goal is entirely up to you.

Reflect on everything you've learned so far and consider what else you may need to do or learn about your career. Then, map out the steps of your pathway, big and small. What are some steps you can take now? What can you do in the near future? What will you do when you've achieved your goal? How will you stay motivated and continue to make a difference?

Do: Discuss "Ideas for Big Next Steps" on page 10 of the Senior Booklet. Where might these fit in their plan, if at all?

Activity Choices—do one:

- **Write a letter to future you.** Seniors can create a time capsule by designing a folder or envelope and handwriting their letter. Or they can create a digital folder with a document or slideshow and any other items they may want to store together. To get started, encourage Seniors to exercise their imagination and write a letter to themselves that describes their future path. Ask questions to help generate ideas, such as, "What will you do by the time you graduate high school that will give you an advantage towards your career? What interests or experiences do you have that will help shape your career path? Where will you be 15 years from now? How do you hope to make a difference? What have you learned about challenges or obstacles connected to your future career path and what did you put into place to support yourself through it?" Ask Seniors to draw pictures or add clip art to their letter to help paint a picture of their future and the steps they may take.

Materials: *Folders or envelopes; lined paper; plain paper; pens, pencils, and colored pencils; computers, smartphones, or tablets*

- **Create a vision board.** Seniors can create a vision board in a digital space, like a slideshow or website, or they can build it in a notebook or binder. Explain that a vision board is a space to help them organize different steps to get to their career, valuable resources, and skills to learn over the course of their academic and upcoming professional career. They can add timelines, checklists, and mind maps to organize their future career pathway. Explain that there is no wrong way to do this, as long as the outcome paints a clearer picture of their future and the path they can take to get there. Ask questions such as, “What skills do you need to learn? Which program will give you the training you need? Are there steps you can take before you finish high school? What resources are available?”

Materials: *Paper; pens or pencils; binders or notebooks (optional); computers, smartphones, or tablets (optional)*

- **Team up to reach your goals!** Have Seniors form groups based on similar career goals or STEM fields (since different careers share some of the same requirements and skills). Seniors can then brainstorm together what steps they’ll need to take towards their career goals. Encourage them to think about how they can support one another and work as a team. Ask questions to help facilitate conversations and generate ideas, such as, “What classes can you take together? What local or virtual events can you attend? What clubs can you join or start if one doesn’t exist? What challenges might you face and how can you overcome them together?”

Materials: *Pens or pencils; paper*

Step 5: Take the next step • 20–30 minutes

Materials: *Varies depending on the experience*

Ask: What will your first step be on your career path?

Share: The only way to figure out your future is by taking the first step towards it. Along the way, you’ll continue to learn about your career, but also about yourself. You may discover other strengths or passions that may change your career path entirely, and that’s okay!

Every step you take, even if it diverts you, is a part of your career journey. Embrace each step and remember that STEM is everywhere—even in the process of finding your path. You learn something new with each step, and it will

inform your decisions about what to do next. So, what next step will you choose to take?

Activity Choices—do one:

- **Learn something new.** Explain to Seniors that they will never stop learning, even well into their careers. New technology will always arise, which then offers opportunities to learn new skills. For this activity, they’re taking a step towards learning something new, whether a new skill or new information about their career pathway. Encourage them to join a club, enroll in a class that supports their career goals, or attend a job fair or trade school open house. Seniors can also reconnect with an expert or talk to someone new in their field to get a different perspective, find out more information, and build their network. To help guide their step, ask questions like, “How else can you learn more about your career? Which step seems most aligned with your goal? How can this step help prepare you for your career?”
- **Do something with others.** Any experience that connects Seniors to other people sharing their interest is a great first step towards their career. Seniors can connect with community members who have similar interests or friends with similar career goals. Explain that working with others can enrich their experience, create opportunities, and help them build their professional network. Ask questions like, “How can you work with others to reach your goals? What opportunities are available to connect in person or online?” Encourage Seniors to discuss their career paths, review the options for their next step, decide on one, and do it together or with a community member. After taking this step, invite Seniors to reflect on their experience and find other ways to continue supporting one another.
- **Take any step to reach your goal.** Explain that each Senior is unique, and their career goals and paths can be customized based on their personal interests. Encourage them to take the step that calls to them the most! For example, if they want to get a firsthand account of the day-to-day, they can arrange for their own job-shadowing experience. If Seniors want to learn new skills, like robotics or engineering, they can join a class or an online course. If Seniors want to learn or develop skills like coding or nutritional know-how, they can enroll in a class or an online course. Seniors can investigate opportunities through the Girl Scouts Badge Explorer to find a related badge they can earn or brainstorm how they can integrate STEM into their Gold Award project. Remind Seniors that the step they take is entirely up to them!

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