

10th Annual STEM Conference & Expo

Welcome Girl Scout Daisies, Brownies, and Juniors!

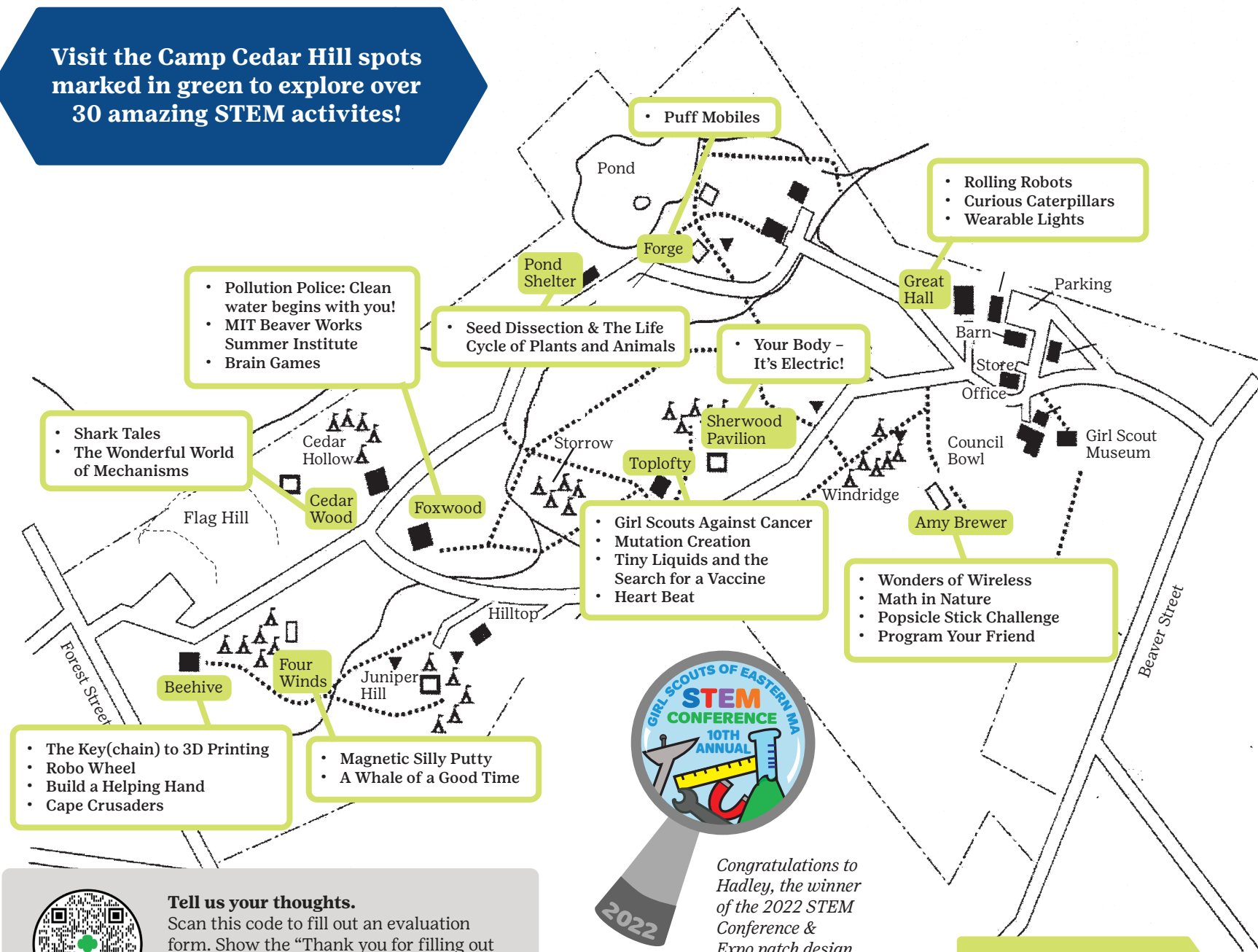
We are so happy to have you here today for our 10th Annual STEM Conference & Expo, the first one ever held here at Camp Cedar Hill. You will find over 30 amazing local organizations gathered here to share their work with you, teach you something new, and get you excited about **science, technology, engineering and math**. Activity descriptions are on the back of this map. You can plan out your route or wander and explore in any order. If a station is crowded, try something different and stop back later. Each activity includes the Girl Scout level (**D B J C S A**) to indicate who the activity has been designed for.

STEM Conference Committee


GSEMA is honored to work with these accomplished STEM professionals to help make the 10th annual STEM Conference & Expo a reality:

- Aurora Avallone Student, Harvard College
- Sara Burke Senior Software Engineer, MathWorks
- Caitlin Fitzmaurice Data Manager, Stellwagen Bank National Marine Sanctuary
- Meika Hayles Project Consultant, Simpson Gumpertz and Heger Inc.
- Francesca Nannizzi Senior Software Engineer, CloudHealth by VMware
- Nicole Sjoblom, PhD Education & Outreach Specialist, Estes Industries
- Greta Wilber Senior Level Strategic Business Partner in Tech & Hospitality
- Karen Williamson Retired Astronomer, Software Engineer, and Manager

Visit the Camp Cedar Hill spots marked in green to explore over 30 amazing STEM activities!



Congratulations to Hadley, the winner of the 2022 STEM Conference & Expo patch design contest!



Tell us your thoughts.
Scan this code to fill out an evaluation form. Show the "Thank you for filling out this survey" page at the registration table and get a free sticker or bookmark!

Descriptions of the activities are on the back.

Thank you to our sponsors

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Rolling Robots

B J *Location: Great Hall*
Learn to command a robot. Can you have it follow a specific shape as it rolls across the floor? –*Empow Studios*

Curious Caterpillars

D B J *Location: Great Hall*
How many different caterpillars are there? Explore 20 different specimens along with the plants they live on. Use a microscope to examine and observe these insect lives at their tiniest scales. –*The Caterpillar Lab*

Wearable Lights

B J *Location: Great Hall*
Add a little shine to your day by using lights to make something you can wear! Using an LED (small light-emitting diode) and a battery, you can put lights in your hair and on your clothes; you can even make your own badge. Join us for some LED fun! –*Society of Women Engineers*

Wonders of Wireless

B J *Location: Amy Brewer*
Find out about how we send information—words and pictures—from one place to another using radio waves. Listen to amateur radio signals from far away with our state-of-the-art radio equipment, learn about Morse code, and make a simple LED light device you can take home and use to send messages using light! –*New England Sci-Tech*

Math in Nature

B J *Location: Amy Brewer*
Did you know that bubbles are made up of patterns called fractals? Similar patterns are found everywhere, including tree branches and even in your facial measurements. Try a bean bag toss and even create your own fractals. –*IQ Experiential Learning*

Popsicle Stick Challenge

D B J *Location: Amy Brewer*
Test your building skills! See how strong of a structure you can build using only popsicle sticks and clothes pins. Learn how civil engineers apply the same skills to the buildings we use everyday. –*Suffolk*

Program Your Friend

D B J *Location: Amy Brewer*
Learn coding basics by guiding a friend through a maze. One is the robot and the other a programmer giving the directions. Remember a robot can only follow the directions given so your code must be accurate. –*Zeta Global*

Puff Mobiles

D B J *Location: Forge*
Learn about renewable energy sources as you are challenged with building a wind-powered car! Test your creation and get your car to the finish line using as few puffs of air as possible! –*WTS-Boston TYOU & BSCES*

Girl Scouts Against Cancer

B J *Location: Top Lofty*
What does cancer look like? How do we treat it? Take a peek at cancer cells through the microscope and try your hand at engineering a drug delivery device from natural materials. Can you find the tumors? –*MIT Koch Institute for Integrative Cancer Research*

Mutation Creation

D B J *Location: Top Lofty*
How do viruses such as Sars-CoV2 (Covid) mutate and change? This happens in a similar way to a game of telephone when one person changes the wording slightly which then gets passed on to the next. Try out some tongue twisters to see for yourself how these “mutations” occur and compare them to viruses. –*One Health Lesson*

Tiny Liquids and the Search for a Vaccine

B J *Location: Top Lofty*
Did you know that you can mix tiny amounts of liquids in a device that looks like a computer chip and is used to make vaccines? See your colorful mixture through a microscope and then design your vaccine model. –*MIT Biological Engineering*

Heart Beat

D B J *Location: Top Lofty*
How does your heartbeat change? Listen to your own heart with a stethoscope (that you can keep) to learn more. This activity occurs every 20 minutes for a max of 10 Girl Scouts at a time. –*Bayer*

Seed Dissection & The Life Cycle of Plants and Animals

D B J *Location: Pond Shelter*
Come meet our chicken and learn the chicken’s role in soil and plant growth. Use scientific tools to dissect seeds and soil and learn about the life cycle of plants and animals. –*Natick Community Organic Farm*

Pollution Police: Clean water begins with you!

D B J *Location: Foxwood*
We are all part of the water cycle and must take responsibility for the water we use, including “cleaning” it. Explore an interactive model to determine sources of water pollution and engineer ways to reduce waste. –*New England Water Environment Association*

MIT Beaver Works Summer Institute

D B J *Location: Foxwood*
Learn about program opportunities for students interested in artificial intelligence, robotics, and other engineering disciplines, and how to start thinking in terms of how to solve real-world problems. –*MIT Beaver Works*

Brain Games

D B J *Location: Foxwood*
How does your brain create thoughts, feelings, and actions? Assemble a 3D model of a human brain and learn about the different functions of the regions of the brain! –*Lahey Hospital and Medical Center*

Shark Tails

D B J *Location: Cedar Wood*
How well do you know your shark species? Join the Atlantic White Shark Conservancy to match shark species. Learn what makes a shark specifically a shark, and how to tell different shark species from one another. –*Atlantic White Shark Conservancy*

The Wonderful World of Mechanisms

B J *Location: Cedar Wood*
Ever wonder how a ballerina dances on top of a music box? Or how Gillette razors are assembled and brought to the shelves? The answer is “mechanisms”! Come learn about what a “mechanism” is and how engineers design them. Girl Scouts will build their own dancing toy! –*P&G Gillette*

Magnetic Silly Putty

D B J *Location: Fourwinds*
The science of silly putty! Come make your own silly putty (that you can take home) and learn about how simple everyday household products can be used to turn ordinary silly putty into magnetic –*Snapdragon Chemistry*

A Whale of a Good Time

D B J *Location: Fourwinds*
How big is a blue whale? Examine whale bones, skulls, baleen, and teeth to see just how big they are! Match marine animals to the ocean light zone they live in, then design your own model tinfoil boat fit for your own sea adventures! –*Whale and Dolphin Conservation*

The Key(chain) to 3D Printing

D B J *Location: Beehive*
You may have heard of 3D printing, but what can you do with it? How do 3D printers work? Come learn how you can make almost anything with a 3D printer, and then get your own 3D-printed keychain! –*Formlabs*

Robo Wheel

D *Location: Beehive*
Get ready to take flight with your own RoboWheel. Girl Scouts will learn about energy and how to build a Robot wheel. They will be able to add their own flair to their creation and then watch it go. –*Littleton Robotics*

Build a Helping Hand

B J *Location: Beehive*
Robots use a variety of different tools in order to pick up items from grippers to spinning wheels and even suction. Make your own simple mechanical arm and compete to pick up the most objects! –*Littleton Robotics*

Cape Crusaders

D B J *Location: Beehive*
A Cape Crusader looks out for the world like any other superhero, however, a Cape Crusader excels at taking care of the natural environment and our historic places. –*CARE for the Cape and Islands*

Your Body – It’s Electric!

D B *Location: Sherwood Pavilion*
Did you know that your body has electricity running through it? Come find out how we measure electricity in your body and what the results mean! –*Brandeis University*