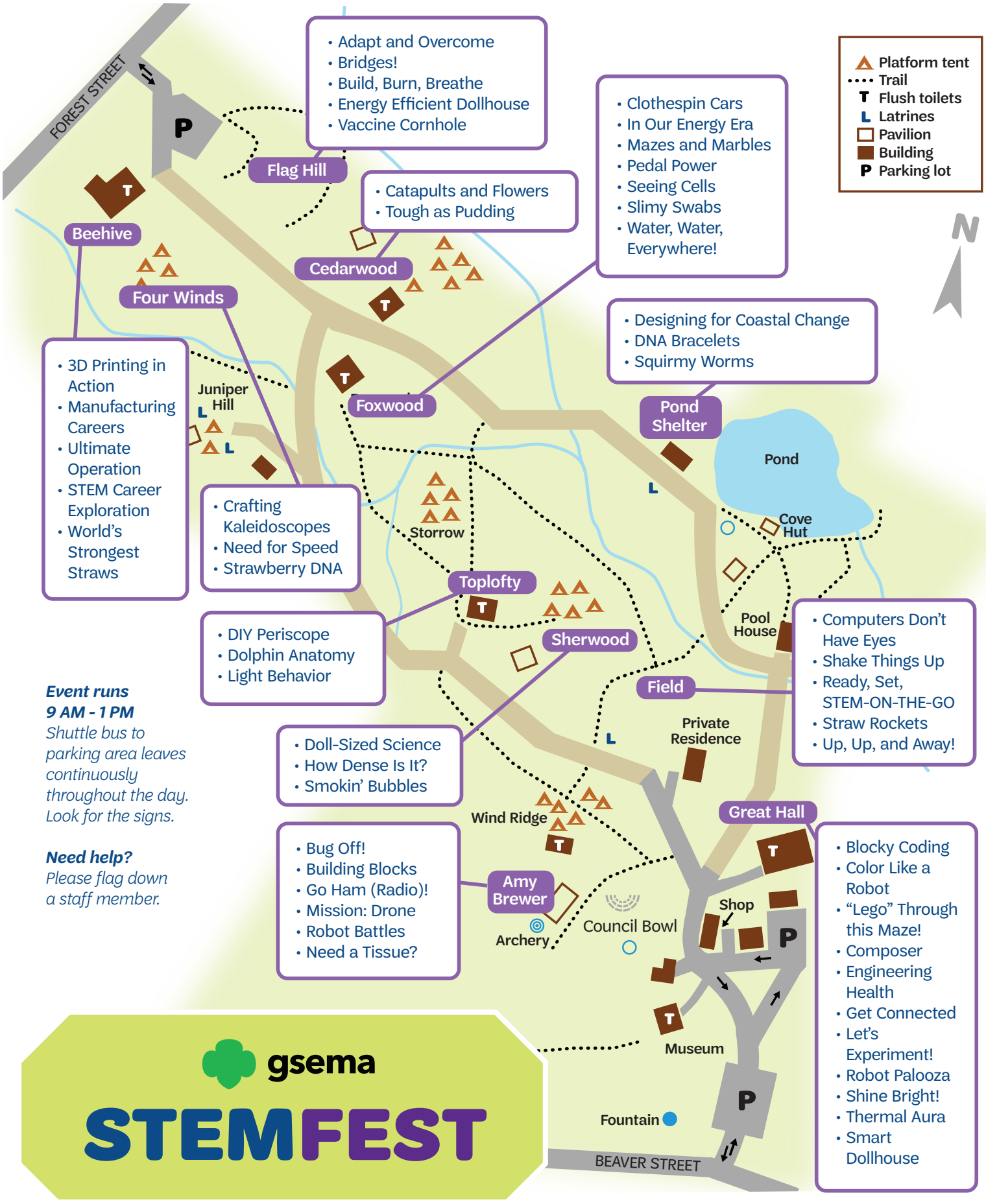

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WELCOME GIRL SCOUTS!
We are so happy to have you here today for our 13th Annual STEM Fest! You will find over 40 amazing local organizations gathered here to share their work with you, teach you something new, and get you excited about science, technology, engineering, and math.

You can plan out your route or choose to wander and explore in any order. Although each activity has Girl Scout levels to indicate who the program has been designed for, all of our activities are open to everyone!

D- Daisy **B - Brownie** **J- Junior** **C- Cadettes** **S - Seniors** **A- Ambassadors**

Bug Off!
D B J C S A **Location: Amy Brewer**
Learn how to make DIY natural bug spray! Learn about the kinds of harmful chemicals present in some store-bought products and how you can protect yourself and the planet by choosing alternative ingredients. – *Silent Spring*

Building Blocks
B J C S A **Location: Amy Brewer**
Use blocks made from deconstructed buildings to design your dream home or structure! This hands-on exercise allows Girl Scouts to learn about architecture and engineering by bringing their ideas to life. – *SA+C Inc*

Go Ham (Radio)!
B J C S A **Location: Amy Brewer**
Come and master the art of amateur, or ham, radio! Learn about the way hams use different kinds of radio technology for public service, safety in an emergency, and fun. With help from local ham radio operators, you can even send a radiogram message home to your family!
– *American Radio Relay League*

Mission: Drone
J C S A **Location: Amy Brewer**
Prepare for an exciting drone-piloting adventure! Code drones to navigate obstacles and complete thrilling missions before switching to manual mode to put your piloting skills to the test. You'll be a master of the sky in no time with this exciting mix of coding, teamwork, and hands-on experience!
– *Guild Hall Learning*

Robot Battles
D B J C S A **Location: Amy Brewer**
Get ready to design and build your own combat robot in this exciting hands-on activity! Using sustainable materials, participants will create robots powered by motors, wires, and batteries while they focus on building, design, and iteration. Then, test your creations' strength and battle strategy. Let your creativity soar as you build the ultimate mechanical warrior! – *Guild Hall Learning*

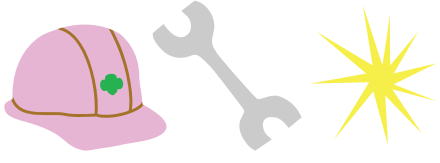
Need a Tissue?
D B J **Location: Amy Brewer**
Get a glimpse into how engineers think about creating synthetic tissues for people who need them! Then, make one of your own by building a model bone, crafting a heart, or assembling your own cells. – *Tufts BME*

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

Manufacturing Careers
C S A **Location: Beehive**
Have you considered a career in manufacturing? Stop by this station to learn about potential career pathways from engineers and business professionals.
– *Women in Manufacturing*

Ultimate Operation
D B J C S A **Location: Beehive**
Test your hand-eye coordination by trying to perform a surgical procedure! Try to grasp different small items using a camera to guide your hand! Start by watching a demonstration, and then give it a go yourself!
– *Johnson & Johnson MedTech (DePuy Synthes)*

STEM Career Exploration
D B **Location: Beehive**
STEM careers are for everyone. Use coloring pages to learn about ways princesses use their STEM skills to make the world a better place. Check back throughout the day to see our STEM vision board!
– *Ms Massachusetts Elemental*



World's Strongest Straws
D B J **Location: Beehive**
Drive a robot around a field and try to achieve various tasks with it! Work through the engineering design process by building a structure that can support a cup of pennies using only straws and tape. Challenge your peers to a friendly competition and try to build the structure that can support the most weight! – *Andover Robotics*

Catapults and Flowers
D B J C S A **Location: Cedarwood**
Have you ever seen how a flower can change colors? In this experiment, you will! Girl Scouts will also participate in a demonstration of a catapult and will take home a catapult kit to make and experiment on their own. This activity will highlight the P&G product development cycle with a display featuring women engineers who have worked on P&G products. – *P&G Gillette*

Tough as Pudding
D B **Location: Cedarwood**
Learn about material properties by mixing concrete made of pudding! Test out different ingredients to learn how to make your material stronger. *Modeling dough concrete is available as an alternative.
– *Simpson Gumpertz & Heger*

Computers Don't Have Eyes
D B J **Location: Field**
How can a computer check if something is ready to come out of the oven if it doesn't have eyes? Turn cookies into numbers (and back into cookies), and learn how computers interact with objects in the real world. – *Kensho*

Shake Things Up
B J C **Location: Field**
Can your building stand tall through the tremors? Build your own mini-structure and put it to the test with an earthquake simulation. – *WTS: Transportation YOU*

Ready, Set, STEM-ON-THE-GO
D B J C S A **Location: Field**
Get STEM programming delivered straight to your door! Check out what GSEMA's STEM ON-THE-GO mobile learning center offers and learn how to request it for your troop meeting. – *GSEMA*

Straw Rockets
D B J **Location: Field**
Make a paper rocket and launch it with a straw and compete with your fellow Girl Scouts to see how far it can fly!
– *WPI Campus Girl Scouts*

Up, Up, and Away!
B J C S A **Location: Field**
Elevate your paper airplane skills and learn to trim them like pilots do! With a few cuts and folds of paper, you'll be a master of the paper skies. Finally, launch your planes to test how well they fly.
– *Boeing/Aurora Flight Sciences*

Adapt and Overcome
D B J C S A **Location: Flag Hill**
How would your life change if you lost the function of a part of your body? Could you eat with one hand? Put your sweatshirt on? Use a phone? Learn how to create adaptive equipment to assist mobility during everyday tasks.
– *Charter Care*

Bridges!
D B J C S A **Location: Flag Hill**
Check out realistic model bridges and learn what makes a bridge strong!
– *Boston Society of Civil Engineers*

Build, Burn, Breathe
J C S A **Location: Flag Hill**
Take a deep breath and get ready to dive into the science of air! Build models using plastic building blocks to uncover the secrets of everyday air pollutants and discover where they come from.
– *MIT Biological Engineering*

Energy Efficient Dollhouse
J C S A **Location: Flag Hill**
This dollhouse needs your help! Increase this house's energy consumption grade by renovating it to be more energy efficient. Use your creative skills to make renovations out of the materials available and show us what updates you would make!
– *Christa McAuliffe Center at Framingham State University*

Vaccine Cornhole
D B J **Location: Flag Hill**
Face off in an epic battle between Team Virus and Team B cell in a game of vaccine cornhole to learn how vaccines work to keep your body healthy!
– *MIT Biological Engineering*

Crafting Kaleidoscopes
D B J **Location: Four Winds**
Create your own kaleidoscope with household items. Explore how light can reflect off a mirrored surface to create unique, symmetric patterns!
– *Society of Women Engineers Boston*

Need for Speed
D B J **Location: Four Winds**
Do you think you can use plastic building blocks to build something in less than a minute? Put your skills to the test with this speedy engineering challenge! Compete by yourself or take things to the next level by competing with another Girl Scout. – *RTX*

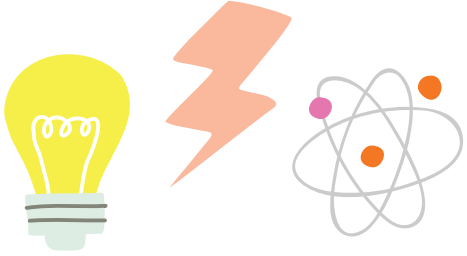
Strawberry DNA
D B J C S **Location: Four Winds**
When we think about genetics and biology, we usually aren't thinking about a fruity summertime favorite. Learn what DNA is and how scientists study it by using common household objects to extract genetic material (DNA) from living organisms (strawberries). – *X-Chem*

Clothespin Cars
B J C S A **Location: Foxwood**
Construct a race car using clothespins and buttons, and use an elastic band to propel it forward and compete with others. – *Suffolk*

In Our Energy Era
D B J C S A **Location: Foxwood**
Explore energy and conservation! Learn how to save energy and money at home, and make a new bracelet for your energy era. – *Eversource*

Mazes and Marbles
D B J **Location: Foxwood**
Create a maze using craft sticks and marbles, and challenge your fellow Girl Scouts to see who can navigate through it the fastest! – *Suffolk*

Pedal Power
B J C **Location: Foxwood**
Move your body while learning about energy efficiency! Use "pedal power" to learn the difference between LED and incandescent bulbs, and the importance of saving energy. – *Eversource*



Seeing Cells
D B J C S A **Location: Foxwood**
Discover the world of cells by looking through a state-of-the-art microscope! Spot the differences between common plants and animal cells and make unique slides of your own. – *AstraZeneca*

Slimy Swabs
D B J C S A **Location: Foxwood**
Search for and catch (toy) amphibians, practice swab techniques that scientists use in their field research, and learn about amphibian conservation work locally and around the world!
– *UMass Boston Woodhams Lab*

Water, Water, Everywhere!
B J C S **Location: Foxwood**
Enjoy a hands-on demonstration of a watershed, explore the different kinds of pollution that impact Charles River, and learn about the importance of nature.
– *Charles River Watershed Association*

Blocky Coding
C **Location: Great Hall**
Can you get your avatar through this online maze? Put your skills to the test by coding your digital step-count!
– *LEGIT (Liberty Encouraging Girls in Technology)*

Color Like a Robot
D **Location: Great Hall**
Did you know you can learn coding through coloring? Follow the algorithm to color in the pictures just as a robot would. – *LEGIT (Liberty Encouraging Girls in Technology)*

Composer
D B J C S A **Location: Great Hall**
Learn how to use your creativity with technology to create music and write your own song.
– *New Harmony Line*

Engineering Health
D B J C **Location: Great Hall**
Engineers help keep people healthy! Learn about CELL-MET's exciting research and how they are growing heart tissue in a lab that can cure heart disease! Then, test out some unique engineering experiments.
– *Boston University CELL-MET*

Get Connected
C S A **Location: Great Hall**
Step into the role of an IT Support professional and learn how to make your own Ethernet cable! – *Per Scholas Boston*

MORE ON BACK ▶

"Lego" Through This Maze!
B J **Location: Great Hall**
Build a custom maze using Legos and write code to create an algorithm to solve it! – LEGIT (Liberty Encouraging Girls in Technology)

Let's Experiment!
D B J C S A **Location: Great Hall**
Learn how to use science to uncover many of life's mini-mysteries! Use science to make things move without touching them, learn about the multiple ink colors inside pens and markers, and figure out how to make a balloon inflate on its own. – *Millipore Sigma*

Robot Palooza
D B J C S A **Location: Great Hall**
It's all about robots! Learn to operate Stormgears' 2024 UNH district finalist robot! Participants will pick up foam rings and shoot them out for other robot operators to collect. Then, make your own Bristle Bot to race alongside your fellow Girl Scouts. Bristle Bots will be provided for Daisies and younger Brownies. – *Stormgears FRC*

Shine Bright!
C S A **Location: Great Hall**
Explore the world of circuit planning! Build your own mini lighting circuit for a cardboard house, plan your electrical layout, install and connect, and learn how circuit planning impacts lighting throughout a structure. – *Arup*

Smart Dollhouse
D B J C S A **Location: Great Hall**
Imagine a world where you could control every inch of your home with the touch of a button. Explore every possibility with our incredible "smart" dollhouse using buttons, motion sensors, and photocells. – *Q-Sys*

Thermal Aura
B J C S A **Location: Great Hall**
Use thermal imaging cameras to see the different insulation performance of different materials! – *Arup*

Designing for Coastal Change
D B J C S A **Location: Pond Shelter**
Discover how waves and sea level rise can impact coastal cities like Boston, and channel your inner engineer by testing out different ways to help cities adapt to beach erosion and climate change.
– *Stone Living Lab*

DNA Bracelets
D B J C S A **Location: Pond Shelter**
DNA is the genetic code that plays a crucial role in the growth, development, and overall health of living organisms. Make a bracelet that represents this code and follows the same rules as our genes.
– *New England Biolabs*

Squirmy Worms
D B J C S A **Location: Pond Shelter**
Get up-close and personal with worms, pill bugs, mites, centipedes, and other decomposers! Look at soil samples under the microscope, learn what worms eat, and why decomposition is important to growing food!
– *Massachusetts Horticultural Society*

Doll-Sized Science
D B J C S **Location: Sherwood**
Learn about important women scientists throughout our history and observe the world on a small scale using paper microscopes and dolls!
– *Graduate Women in Science and Engineering at Boston University*

How Dense Is It?
D B J **Location: Sherwood**
Create a rainbow in a tube! Pour different colorful liquids together and learn about the concept of density. The order you pour won't matter, so which color will come out on top?
– *Girl Scout Troop 84329*

Smokin' Bubbles
D B J C S A **Location: Sherwood**
What happens when you combine dry ice and soap? Smokin' bubbles, that's what! Come learn about what makes these types of bubbles so unique, and get creative by adding a touch of color and making them "pop" even more!
– *Snapdragon Chemistry*

DIY Periscope
B J C S A **Location: Toplofty**
Use mirrors to peer around a corner! Make a periscope and learn how light reflects and refracts, and find out how your creation is similar to a microscope or a telescope. – *New England Sci-Tech*

Dolphin Anatomy
D B J C S A **Location: Toplofty**
Meet Echo, a life-sized model of a bottlenose dolphin! Learn about dolphin anatomy and discover the unique adaptations that dolphins have to their ocean environment.
– *Whale and Dolphin Conservation*

Light Behavior
J C S A **Location: Toplofty**
Make a different light pattern with a simple flip of a switch! Learn the ways UV light behaves differently from other lights and try out some light behavior experiments!
– *Boston University Photonics*

Thanks to our STEM Fest Committee for helping make this event a reality.

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Relationship Manager at LabXchange, Harvard University

Tell us your thoughts about today's event. Scan this code to fill out an evaluation form.