TMSC Summer of STEM Adventures 2025

Week 1: June 23 - June 27

(K-2) Weather Wizards: Make snow in the summer, create a model tornado, and experience mini lightning storms that will make your hair stand on end, literally! Create weather instruments to take home for your own personal weather lab!

(K-2) Robotics: SPIKE Prime: If you love robotics, this is the program for you! Assemble and program LEGO® SPIKE robots to tackle a variety of contests and challenges. Teamwork, perseverance, and programming skills will all be put to the test.

(K-2) Girls Rock! Have you dreamed of being a scientist? Fun and engaging activities focus on discovery skills and hands-on experiences - from rock IDs to biology labs to chemistry experiments. Highlights from all areas of STEAM are designed to build confidence and show that girls rock!

(3-5) Green Engineering: How can the wind power your house? How can we harness the energy of water? Can you cook with sunshine? Switch on to wind, water, and solar energy! Discover how electrons energize lights and motors as you build circuits and learn how to tap into nature for power!

(3-5) Cool Contraptions: Engineering, problem solving, and creativity - all in one! Build chain-reaction contraptions to perform tasks, using a wide variety of supplies. You will get to tinker, create, and collaborate - and learn some physics and engineering along the way.

(3-5) 3D Printing: 3D printers have opened up a world of do-it-yourself design and manufacturing, from game pieces to prosthetics. Using CAD programs and our suite of Prusa printers, you'll be able to design and print your very own gadgets and 3D models to take home!

(6-8) Anatomy and Physiology: If you want to know how our bodies work, this course is for you! Learn about bones, muscles, and cells - of humans and other creatures. You'll get to test your strength, listen to your heart, and explore skeletons. It doesn't get more hands-on than building models and doing dissections! Includes a field trip to the UConn Health Center in Farmington.

(6-8) Arduino Engineering: Want to get under the hood of today's electronics? Build circuits that can be used to power gadgets, games, and robots? You'll create cool stuff using an Arduino project board, LEDs, sensors, and motors. *Additional purchase of a SparkFun Arduino tinkerkit ($55) at registration if you want to bring yours home. If not purchased, you will use ours and it will stay at TMSC.

Week 2: July 7 - July 11

(K-2) LEGO® Science: From cars to catapults, from motors to robots, you can explore science and technology with LEGO®. Bring your creativity as you compete in challenges to create bridges, towers, and other contraptions. There is a world of possibilities when using LEGO® bricks!

(K-2) Robotics: SPIKE Prime: If you love robotics, this is the program for you! Assemble and program LEGO® SPIKE robots to tackle a variety of contests and challenges. Teamwork, perseverance, and programming skills will all be put to the test.

(K-2) STEM in Motion: Get ready to strengthen your mind and muscles in this class! Movement lessons and activities will be paired with STEM concepts to give everyone a challenge - and a workout. You'll test your heart rate, create a larger-than-life circulatory system obstacle course, and even play some math tag! Don't miss this opportunity to make your body and brain stronger while participating in a wide variety of physical education lessons.

(3-5) Natural Disasters: Put yourself (safely!) in a hair-raising lightning storm! Set off simulated volcanoes, earthquakes, and tornadoes. Learn about some of Earth’s wildest natural disasters and place yourself right in the action with our green screen!

(3-5) 3D Printing: 3D printers have opened up a world of do-it-yourself design and manufacturing, from game pieces to prosthetics. Using CAD programs and our suite of Prusa printers, you'll be able to design and print your very own gadgets and 3D models to take home!

(3-5) Claymation: Create animated stop-motion stories with your own clay creations. You'll work independently or in a team to write a story, set up a stage, move your characters, and create an original video of their adventures!

(6-8) Reach for the Stars: Explore the wonders of the solar system and beyond! Journey through the cosmos in our planetarium, see the sun like never before, and fit the moon in your pocket. From crafting constellations to lunar landings, anything is possible when you reach for the stars! Includes a night-time observing event using our telescopes on the last day of the program, weather permitting

(6-8) DNA Detectives: Learn about what makes you, YOU! Featuring DNA themed crafts and games, DNA extraction, transcription/translation, Punnett squares, and even use our very own PCR and Gel Electrophoresis equipment to solve a "who-done-it" genetic mystery.

Week 3: July 14 - July 18

(K-2) Earth Explorers: You live on Earth, but how much do you really know about it? Here's your chance to explore the world from our mountaintop. Learn about water cycles, rocks and minerals, fossils, the sky, and weather.

(K-2) Claymation: Create animated stop-motion stories with your own clay creations. You'll work independently or in a team to write a story, set up a stage, move your characters, and create an original video of their adventures!

(K-2) LEGO® Science: From cars to catapults, from motors to robots, you can explore science and technology with LEGO®. Bring your creativity as you compete in challenges to create bridges, towers, and other contraptions. There is a world of possibilities when using LEGO® bricks!

(3-5) Robotics: SPIKE Prime: If you love robotics, this is the program for you! Assemble and program LEGO® SPIKE robots to tackle a variety of contests and challenges. Teamwork, perseverance, and programming skills will all be put to the test.

(3-5) MicroSafari: Want to learn more about the little critters that run the world? Join us for a "microsafari" to get hands-on experience with insects, crustaceans, reptiles, plants, and more! You will do plenty of fun crafty projects, explore the miniature world of pond water, and learn to safely handle our unusual class pets. You'll get to search the outdoors to find creatures, and examine them back in the lab.

(3-5) Girls Rock! Have you dreamed of being a scientist? Fun and engaging activities focus on discovery skills and hands-on experiences - from rock IDs to biology labs to chemistry experiments. Highlights from all areas of STEAM are designed to build confidence and show that girls rock!

(6-8) 3D Printing: 3D printers have opened up a world of do-it-yourself design and manufacturing, from game pieces to prosthetics. Using CAD programs and our suite of Prusa printers, you'll be able to design and print your very own gadgets and 3D models to take home!

(6-8) Kinesiology: Science of Motion: Get ready to strengthen your mind and muscles in this class! Movement lessons and activities will be paired with STEM concepts to give everyone a challenge - and a workout. You'll test your heart rate, create a larger-than-life circulatory system obstacle course, and even play some math tag! Don't miss this opportunity to make your body and brain stronger while participating in a wide variety of physical education lessons.

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Week 4: July 21 - July 25

(K-2) Crazy about Cats: Join us for a purrfectly fun program, all about our feline friends! Discover the science of cats, including their anatomy and unique abilities. Travel through time to learn about the history of cats, domestication, and their role in mythology. Unleash your creativity in cat-themed art projects. We're not kitten around, you'll have a pawsome time!

(K-2) LEGO® Science: From cars to catapults, from motors to robots, you can explore science and technology with LEGO®. Bring your creativity as you compete in challenges to create bridges, towers, and other contraptions. There is a world of possibilities when using LEGO® bricks!

(K-2) Kid Coding: Everyone can learn to code, even you! You'll get to make your own games and graphics, tackle challenges, and use your imagination. Coding is fun for everyone!

(3-5) Geocaching: Treasure Hunt: Geocaching is high-tech hide-and-seek, a modern scavenger hunt. There are hidden treasures waiting to be found in mountains, forests, cities, and parks near you! Around the world, teams have hidden "caches" of items, and it is your job to find them. Learn GPS, create your own caches, and find caches on our campus. Includes a field trip to a nearby park to test your searching skills!

(3-5) Marine Science: From coral reefs to the deep sea to nearby Long Island Sound - there is so much of the ocean to explore! You will learn about geology, watersheds, tides, sea monsters, shells, and even dissect some squid. Includes a field trip to Hammonasset Beach State Park for a visit to Meig's Point Nature Center, ocean observations, and catch-and-release of some cool creatures!

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(6-8) Nature Collecting: Learn how to find and catalogue nature like a real scientist! Using museum standards, you'll spend the week creating an herbarium collection and an insect collection. On our mountaintop campus you will find plants and insects - and back in the lab you'll identify, preserve, and label them. Includes a field trip to the UConn Biodiversity Research Collections and Greenhouses.

(6-8) Computer Animation: Through hands-on paper crafts and digital lessons, learn the fundamentals of animation, and discover how to bring your imagination to life! Our animated adventure will include guided drawing lessons, classic cel animation, stop-motion, and 2D computer animation.

Week 5: July 28 - August 1

(K-2) Astro Adventures: Discover our solar system! Craft a constellation, eat a comet, and learn about space in our very own planetarium. The sun, moon, and planets wait to be explored!

(K-2) Budding Biologists: Amazing plants and animals are everywhere - and it's your job to find them! Discover life around us as you explore our mountaintop forest. You'll feel like a biologist as you examine cool creatures in the lab. Pond water, plant life cycles, class pets, and crafty projects are waiting for you!

(K-2) Pirate Science: Set sail on a science-filled adventure! All aspiring buccaneers are welcome during this week of ocean-themed fun. Build boats, make maps, design your own pirate hat, and hunt for buried "treasure". Arrrrrr you ready for an exciting week?

(3-5) Geocaching: Treasure Hunt: Geocaching is high-tech hide-and-seek, a modern scavenger hunt. There are hidden treasures waiting to be found in mountains, forests, cities, and parks near you! Around the world, teams have hidden "caches" of items, and it is your job to find them. Learn GPS, create your own caches, and find caches on our campus. Includes a field trip to a nearby park to test your searching skills!

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(6-8) AI: Friend or Foe? Dive into the fascinating world of artificial intelligence! Through hands-on activities, engaging discussions, and creative projects, students will explore how AI works, its role in our daily lives, and the ethical questions it raises. From coding simple AI programs to debating its potential benefits and challenges, you will develop critical thinking and tech skills while imagining the future of AI. Join us to uncover whether AI is a friend, a foe, or something in between!

Week 6: August 4 - August 8

(K-2) Pirate Science: Set sail on a science-filled adventure! All aspiring buccaneers are welcome during this week of ocean-themed fun. Build boats, make maps, design your own pirate hat, and hunt for buried "treasure". Arrrrrr you ready for an exciting week?

(K-2) Future Engineers: Are you an inventor at heart? Like to tinker and take things apart? You will get to build cool stuff, compete in design contests, and create your own new inventions. You're on your way to becoming an engineer!

(K-2) Creepy Crawlies: Insects, spiders, slugs... there are creepy crawlies everywhere! Find out how they move, what they do, and where to find them. There will be fun crafty projects, hands-on experiences, and plenty of time outside with butterfly nets and bug jars. Be prepared to catch, hold, and learn about the amazing creatures that live on our mountaintop campus!

(3-5) Wild and Crafty: Discover your creative talents using materials found in nature. Experiment with natural dyes, plants, shells, and more! Create fairy houses with nature's colors and textures. What you make is yours to keep!

(3-5) Game Design: Explore the world of computer games by building your own! Work on several platforms and game tools to create original characters, stories, and worlds. You'll end up with your own game to play and share with your friends!

(3-5) Science Takes Flight: What goes up must come down - eventually! Learn about how things stay aloft, both natural and manmade. See how nature has inspired modern designs of airplanes, rockets, and other flight vehicles. You will get to design, build, and launch your own rockets! Includes a half-day field trip to a nearby park for rocket launches.

(6-8) Marine Science: From coral reefs to the deep sea to nearby Long Island Sound - there is so much of the ocean to explore! You will learn about geology, watersheds, tides, sea monsters, shells, and even dissect some squid. Includes a field trip to Hammonasset Beach State Park for a visit to Meig's Point Nature Center, ocean observations, and catch-and-release of some cool creatures!

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Week 7: August 11 - August 15

(K-2) Dinosaurs! Join us for a dino-mite week of discovery as we journey back in time to the world of dinosaurs! Become a paleontologist and dig for fossils, recreate dinosaur skeletons, and learn what life was like millions of years ago. Includes a field trip to Dinosaur State Park to see real dinosaur footprints!

(K-2) Kitchen Chemistry: There's plenty of cool chemistry you can do with everyday materials from home - and we'll show you how! You'll experiment with acids and bases, make chemical reactions, and create colorful works of art - all with things right off the kitchen shelf!

(K-2) Physics is Fun! The way things look, move, and sound - are all due to physics! Experiment with motion, rockets, roller coasters, light, rainbows, and sound waves. Every action has a reaction, and every week of physics is fun!

(3-5) Creative Coding: Learn to code with fun programming apps that let you create graphics, solve problems, and use your imagination! All apps used are open-source or freeware that you can use after the program.

(3-5) STEM in Motion: Get ready to strengthen your mind and muscles in this class! Movement lessons and activities will be paired with STEM concepts to give everyone a challenge - and a workout. You'll test your heart rate, create a larger-than-life circulatory system obstacle course, and even play some math tag! Don't miss this opportunity to make your body and brain stronger while participating in a wide variety of physical education lessons.

(6-8) Raspberry Pi: It's not dessert - learn how to assemble and program your very own RaspberryPi computer! It runs RaspberryPi OS and can connect to a keyboard, mouse, monitor, or TV. Experiment with Java, Wolfram Mathematica, GIMP graphics, and Minecraft! Please bring your own microSD card. *Optional purchase of a RaspberryPi 5 2GB single-board computer ($50) at registration if you want to bring yours home. If not purchased, you will use ours and it will stay at TMSC.

(K-2 and 3-6) Camp Invention - Discover! This year’s exciting new program inspires curiosity and helps kids build essential STEM skills through collaboration with friends and one-of-a-kind creative problem-solving experiences. Students explore hands-on challenges and open-ended adventures designed to encourage new discoveries and bring big ideas to life! This year's activities include special effects and illusions, building a claw machine, "penguin launch", and creating a custom car control panel. See the Camp Invention website for videos and more details about what's in store!
https://www.invent.org/programs/camp-invention