

STEM Summer Camps: Exploring Engineering, Innovation, and Transportation Careers

Summer break provides a unique opportunity for students to explore interests beyond the classroom—and for many young learners, STEM camps provide an introduction to science, technology, engineering, and mathematics (STEM) fields in hands-on, engaging environments. Across the United States, summer camps hosted by universities, nonprofit organizations, and STEM education providers introduce students to engineering concepts through creative projects, team activities, and real-world problem solving.

For parents interested in helping their children discover potential STEM career paths—including fields related to transportation, infrastructure, and technology—summer camps can be an excellent starting point. The following programs are among the many STEM opportunities available nationwide.

National Summer Transportation Institute (NSTI)

The National Summer Transportation Institute is a nationwide STEM outreach program supported by the Federal Highway Administration and hosted by universities across the United States. The program introduces students to transportation systems and infrastructure through hands-on STEM activities and exposure to transportation careers. Most NSTI programs serve middle and high school students (typically grades 6–12) and are often offered at low or no cost to participants. NSTI even offers virtual and hybrid programs.

iD Tech Summer Camps

iD Tech offers technology-focused summer programs hosted at universities throughout the United States. Students participate in project-based learning in areas such as coding, robotics, artificial intelligence, and game development while working with experienced instructors. Programs typically serve students ages 7–19.

Camp Invention

Operated by the National Inventors Hall of Fame, Camp Invention focuses on creativity, innovation, and hands-on engineering challenges. Students collaborate to design prototypes, explore problem-solving strategies, and develop inventive solutions to real-world challenges. The program is typically offered for students in grades K–6.

National Youth Organizations

National youth organizations such as the YMCA, Boys & Girls Clubs of America, and Girls Inc. also offer local STEM-focused summer programs in many communities. While programming varies by location, these organizations frequently incorporate hands-on engineering, robotics, and science activities into their summer camps.

College and University Programs

If you're exploring summer opportunities for your student, be sure to take a look at the websites of local colleges and universities—especially their Colleges of Engineering. Many institutions offer engaging STEM summer programs designed to introduce students to fields like engineering, technology, and applied science through hands-on activities, campus experiences, and interactions with faculty and current students. These programs are often not widely advertised in one central place, so browsing university and engineering college webpages directly can uncover valuable opportunities that align with your student's interests.

Additional STEM Camps to Explore

Parents interested in STEM-focused summer opportunities may wish to explore the following programs offered by universities, nonprofit organizations, and professional associations across the United States. These programs provide a range of experiences in engineering, technology, robotics, and infrastructure systems.

- **National Summer Transportation Institute (NSTI)**
Grades: Typically 6–12
<https://highways.dot.gov/careers/stem-outreach/national-summer-transportation-institute>
- **iD Tech Summer Camps**
Ages: 7–17
<https://www.idtech.com>
- **Camp Invention**
Grades: K–6
<https://www.invent.org/programs/camp-invention>
- **Society of American Military Engineers STEM/Engineering & Construction Camps**
Grades: High school
<https://www.same.org/camps/>
- **NASA STEM Engagement Programs**
Grades: Varies by program
<https://www.nasa.gov/stem>
- **Engineering For Kids Camps**
Ages: 4–14
<https://engineeringforkids.com>
- **Play-Well TEKnologies Engineering Camps**
Ages: 5–12
<https://www.play-well.org>

Hands-on STEM programs play a crucial role in sparking curiosity and helping students envision themselves as future engineers, scientists, and innovators. These programs allow students to build problem-solving skills and confidence while exploring how engineering shapes the world around them. Early exposure to fields such as infrastructure, technology, and mobility can inspire interest in careers that support safe and efficient transportation systems. By encouraging students to engage with STEM learning opportunities, we help cultivate the next generation of transportation professionals who will plan, design, and operate the transportation networks of the future.