

# STEAM Schedule for NY 2024

## Camps Enrichment Options

Each week, every child will experience Robotics, computer programming, tinkering, circuitry, and other STEAM activities. However, each group of GEMS will have a week-long concentration with extended projects in one of these areas. Below is a schedule for the concentration activities by group and week. Each concentration segment will be 1:20 in length. The mini STEAM activities will be 45 minutes each.

### Weekly Concentration Activities: Girls Camp

Week 2	<b>Robotics-Robo Kids</b>
Week 3	<b>ChemiFun Explorers (see below)</b>
Week 4	<b>ChemiFun Explorers (see below)</b>
Week 5	<b>Techo Art- Illuminating Creativity</b>
Week 6	<b>Crazy Contraptions with Robotics</b>

Ideally campers will participate in Weeks 3 and 4 of **Chemifun Explorers** but it is not required and campers can choose either week if that works best for their schedule

## Weekly Concentration Activities: Boys Camp

Week 2	<b>Robotics-Robo Kids</b>
Week 3	<b>ChemiFun Explorers (See Below)</b>
Week 4	<b>ChemiFun Explorers (See Below)</b>
Week 5	<b>Crazy Contraptions with Robotics</b>
Week 6	<b>Artificial Intelligence for Kids Igniting Brilliance</b>

Ideally campers will participate in Weeks 3 and 4 of **Chemifun Explorers** but it is not required and campers can choose either week if that works best for their schedule

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# Concentration Descriptions 2024

## STEMTASTIC WEEKS

**Robotics:** Campers will use code various robots at different, age-appropriate levels. Campers will have fun coding robots and finding out how to command them. Campers will have the opportunity to extend their robotics capabilities by meeting challenges such as coding throughout a maze or pushing water bottles while in a race. This class will introduce programming concepts such as repeat loops and if/then statements and sensor use will also be taught.

**Chemistry For Kids:** Explore a different side of STEM with a week dedicated to the science of Chemistry. Campers will explore the way properties of substances can change, react, and create in a Make and Take format. Campers will participate in food chemistry investigations, chemical testing, volcano building, slime chemistry, and silly putty creation. **They will bring their projects home.**

**Build Artificial Intelligence Projects for Kids-** Starting with AI projects can be a fun and exciting way for kids to learn about this technology. AI for campers will begin with simple tasks that don't require prior knowledge or experience with coding or AI. Some examples of simple AI projects include creating a chatbot, or training a machine learning model to classify images. These projects can be done using online platforms, such as Code.org or Scratch, or with AI development tools like TensorFlow.

**Computer Science:** Campers will explore coding using age-appropriate programs such as Scratch and Scratch Jr. Experienced campers will have the opportunity to learn and apply skills using Minecraft and Java programming languages. At each level, the campers will develop an understanding of programming languages, and apply this knowledge to create their own interactive art, animated stories, and video games. Along the way, campers will use logic and critical thinking to explore different variables that

**Tech Art: Tinkering & Engineering:** There is something extraordinary that happens when STEM (Science, Technology, Engineering, and Math) education blends with Art; besides a new acronym (STEAM): an exciting hands-on and creative learning experience that is fun and, more importantly, gratifying and fulfilling. Campers get to tinker, test, and try out ideas to develop original creations. Imagine creating a drawing or a collage, and then using this special tape to turn it into something that lights up, makes sounds, or even moves! Artists can stick LEDs, tiny motors, or sound modules onto their artwork using this tape. When connected to a battery or

power source, the conductive tape completes an electrical circuit, bringing the artwork to life. They will be provided with all sorts of hardware and technology tools and given the ability to create a cohesive tinkering project. **They will bring their projects home**

**Crazy Contraptions with Robotics** An exciting week of creative exploration as campers learn the importance of creative thinking, design, engineering, iterative testing, and using materials and tools to create Crazy Contraptions “Crazy Contraptions” is a thought-provoking activity that engages students in the design and construction of exciting and innovative Rube Goldberg style mechanisms. This week-long activity will focus on the conceptualization, understanding, and application of simple and complex machines. Campers will work in small groups to build, test, modify and complete interactive machines. The week will end with a demonstration and competition that will reward campers for their innovative design and creative solutions. Time permitting campers will be introduced to Keva Plank Contraptions to expand the skills they developed working with Crazy Contraptions and using robotics to navigate through the mazes.