

# SCIENCE & TECH WORKSHOPS

These engaging and amazing programs will not only enrich your child's intellectual curiosity; but also, get him or her excited about science and learning! Children will use their analytical and critical thinking skills and explore topics in the science world.

All instructors are trained educators in S.T.E.M./S.T.E.A.M. (Science, Technology, Engineering, and Mathematics/Science, Technology, Engineering, Art, and Mathematics) All supplies and materials included.

**Note to Parents: Please have your child bring a nut-free snack and drink each day.** For your child's safety, please inform the Department Staff, at the time of registration, and the instructor of any known allergies that exist for your child!

## COMPUTER VIDEO GAME CREATION

If you think playing computer games is fun, think what a blast learning to program your own games will be! Your imagination is the limit as you use GameMaker software to an action game. You'll learn about creating sprites, objects, events, and actions. We'll teach you how to display health, lives, score, splash screens, and high score tables. Using drag and drop programming, you'll be creating exciting, professional-looking games you can play with your friends. You can keep creating after the class because we supply each child with a free, lite version of Game-Maker for Windows. You must be experienced using a computer to take this class.

FOR | Ages 8-14

WHEN | August 13-17 (Monday-Friday)

TIME | 1:00-4:30 pm

WHERE | Queensbury WHBI School, Classroom #121

FEE | Resident \$265; Non-Resident \$275

Class size: 15 max

## LEGO® WEDO ROBOTICS

Using the LEGO® Education WeDo™ Robotics Construction Set, students are introduced to simple robotics through building models, attaching sensors and motors, and using a computer to program the model's behavior. Some of the robot models include dancing birds, smart spinner, drumming monkey, hungry alligator, roaring lion, flapping bird, soccer kicker, soccer goalie, and cheerful fans. Students will also learn about simple engineering concepts such as pulleys, belts, gears and levels. **Robots are for use by students in class, only. Students will not be able to take them home.**

FOR | Ages 5-8 (For age 5, children need to have computer knowledge.)

WHEN | August 13-17 (Monday-Friday)

TIME | 9:00 am-12:00 pm

WHERE | Queensbury WHBI School, Classroom #121

FEE | Resident \$240; Non-Resident \$250

Class size: 10 max

## FORENSIC SCIENCE CAMP FOR YOUNG DETECTIVES – CSI IN ACTION

The Forensic Science camp will let students jump into the world of crime scene investigation. We will take on the role of the investigator when we ask, "How can we prove that someone came into a room or touched an object?" **Instructor: Thomas Jones, BA, MA, University of Illinois; JD, University of Michigan; noted author; for more information, [www.crimescenecamps.com](http://www.crimescenecamps.com).**

**Note to Parents: Please have your child bring a nut-free snack and drink each day.**

For your child's safety, please inform the Department Staff, at the time of registration, and the instructor of any known allergies that exist for your child!

FOR | Ages 6-14

WHEN | July 30-August 3 (Monday-Friday)

TIME | 9:00 am-12:00 pm

WHERE | Queensbury WHBI School, Classroom #119

FEE | Resident \$80; Non-Resident \$90

Designed  
for kids!

Class size: 14 min | 25 max

## MAKE YOUR OWN ROBOT WALKER AND ROBOT HAND

Low-tech robotics expert Kathy Ceceri will show you how to design, build, and test your own gravity-powered robot walker! Scientists call these "passive dynamic walkers" because they move in life-like ways — without any motors. As a bonus, you'll also learn how to make a life-like cardboard robot hand. Kathy is the author of "Robotics: Discover the Science and Technology of the Future," "Paper Inventions," "Musical Inventions" and "Fabric and Fiber Inventions," and other books of hands-on science/tech/art projects for kids. All supplies and materials included.

FOR | Ages 8 & Up

WHEN | August 7 (Tuesday)

TIME | 10:00-11:30 am

WHERE | Queensbury WHBI School, Classroom #121

FEE | Resident \$30; Non-Resident \$40

Class size: 10 min | 15 max

## YOUNG HACKS ACADEMY

Does your child have what it takes to lead in the 21st century? Young Hacks Academy (YHA) is a summer camp that uses technology to develop real-world leadership skills. Blending computer programming, problem-solving, and teamwork; YHA teaches kids to build cool video games and interactive stories about big challenges facing the world today, such as climate change, homelessness, and endangered wildlife. YHA is also committed to having fun away from the screen, moving campers outside each day for unplugged games. No programming experience is required. For more information, visit [younghacks.com](http://younghacks.com) or find us on Facebook: [facebook.com/YoungHacksAcademy](https://facebook.com/YoungHacksAcademy).

### AGENT TRAINING

Whether it's public speaking or collaborating with peers, YHA Agent Training models essential leadership techniques that will help students in and out of the classroom. Agents tackle daily missions using Scratch, a user-friendly, visual programming tool that empowers students to quickly start developing their own games and stories. The challenge is to come up with a project that will not only entertain their friends; but also, teach something about topics that are impacting our local and global community.

Children will receive a program t-shirt and Agent Kit, including a workbook and diploma. All materials included.

FOR | Ages 9-12

WHEN | July 9-13 (Monday-Friday)

TIME | 9:00 am-4:00 pm

WHERE | Queensbury Middle School, Computer Lab #177

FEE | Resident \$285; Non-Resident \$295

**PLEASE NOTE: Your child will need to bring nut-free lunch, snacks, and drinks each day.**

Please provide your child's t-shirt size at registration.

Class size: 12 min | 20 max

## Registration Information

**Online:** [recreation.queensbury.net](http://recreation.queensbury.net)

**In Person:** Queensbury Parks & Recreation Department  
742 Bay Road, Queensbury NY 12804  
8:00 am-4:30 pm, Monday-Friday

*The Department reserves the right to either cancel, change, or alter any program schedule based on availability of staff, facility, and/or enrollment.*



Queensbury  
**PARKS & RECREATION**

742 Bay Road, Queensbury NY 12804 | (518) 761-8216  
[recreation.queensbury.net](http://recreation.queensbury.net)

## Youth Science & Technology Programs

Summer 2018



Forensics · Chemistry · Engineering  
and so much more!



Queensbury  
**PARKS & RECREATION**

REGISTER ONLINE!  
[recreation.queensbury.net](http://recreation.queensbury.net)



# IS YOUR CHILD "MAD" ABOUT SCIENCE?

We have plenty of incredible programs to engage your child's curiosity. Children can explore and enjoy different topics; and most of all, have FUN! To be exact, it's SUPER SCIEN-TASTIC FUN!



Hands-on  
science  
FUN!

# MAD SCIENCE CAMPS



All Mad Science educators hold Bachelor's Degrees in STEM.

Note to parents: For your child's safety, please inform the Department Staff, at the time of registration, and the instructor of any known allergies exist for your child!

Note to Parents: Please have your child bring a nut-free snack and drink each day.

Class sizes:  
10 min | 20 max

All Mad Science educators hold Bachelor's Degrees in STEM.

We are thrilled to partner with Mad Science of the Capital District to offer the following outstanding and unique science programs! All programs are curriculum correlated and meet S.T.E.M. (Science, Technology, Engineering, and Mathematics) objectives. Professional equipment and materials will be used. All supplies are included. These programs will encourage team-building, as we work collaboratively to solve real-world S.T.E.M. problems!

## 1 AEROSPACE – BRIXOLOGY LEGO® WORKSHOP

Launch your imagination to new heights as you explore aerospace engineering! Discover the secrets of working in space — efficiency and compact design. Create a trussed space station module, then connect it with others to create a massive modular spacecraft.

FOR | Grades K-5  
WHEN | July 6 (Friday)  
TIME | 10:30-11:30 am

## 2 ROCKET SCIENCE – NASA WORKSHOP

Follow a detailed construction plan to build their very own model rockets while exploring the science of rocketry. The children will use their creative problem-solving skills as they take on the role of NASA engineers, and they will play a fun, educational game illustrating the four forces of flight.

FOR | Grades K-5  
WHEN | July 10 (Tuesday)  
TIME | 9:00-10:15 am

\*Special Note  
Below

## 3 SCIENCE OF TOYS

Did you know that some of your favorite toys work using basic science principles? Learn about bouncing balls and other classic toys to discover the science of motion through fun hands-on activities. Find out how vector toys and string things work and how fun they can be!

FOR | Grades K-5  
WHEN | July 10 (Tuesday)  
TIME | 10:45-11:45 am

\*Special Note  
Below

## 4 DRY ICE CAPADES\* – CRAZY CHEMWORKS WORKSHOP

Manipulate matter in all of its three states! Melt metal in boiling water and freeze water with just a breath of dry ice! Use your Thermocolor Cup to test the temperature of liquid matter in your home!

FOR | Grades K-5  
WHEN | July 23 (Monday)  
TIME | 9:00-10:00 am

\*Special Note  
Below

## 5 MOVIE EFFECTS\*

Grab your popcorn, but don't sit back! We're going to learn first-hand how advances in science and technology make our favorite special effects possible! It's Einstein meets Spielberg in a class of 3...2...1...action!

FOR | Grades K-5  
WHEN | July 23 (Monday)  
TIME | 10:30-11:30 am

\*Special Note  
Below

## 6 SCIENCE OF MAGIC

In this super science class, children will learn about the Science behind magicians. They will create their very own orbies, too! This class is a whole lot of magical FUN!

FOR | Grades K-5  
WHEN | July 26 (Thursday)  
TIME | 9:00-10:00 am

## 7 JR. REACTORS\* – CRAZY CHEMWORKS WORKSHOP

Create a tiny world of atoms with your very own set of Atomic Coins! Learn to recognize chemical reactions and mix up a few reactive ingredients for some sensational results!

FOR | Grades K-5  
WHEN | August 6 (Monday)  
TIME | 9:00-10:00 am

\*Special Note  
Below

## 8 BOATS\* – BRIXOLOGY LEGO® WORKSHOP

Create a sea-worthy vessel as you set sail with nautical engineering! Build and test a boat powered by potential and kinetic energy. Then try changing specific variables to improve speed, buoyancy, and stability.

FOR | Grades K-5  
WHEN | August 6 (Monday)  
TIME | 10:30-11:30 am

\*Special Note  
Below

## 9 SONIC SOUNDS\*

Surf sonic sound waves in this "off-beat" program. Music and all sorts of merry sounds engage children in sound experiments and live demonstrations showing the properties and transmission of sound waves. Children listen to sounds made with solid materials — from plastic, to metal, to string. Ordinary objects like handheld horns, metal screws, wooden ratchets and beads transform into a story sound-effect symphony. Electronic devices reveal frequency when a pitch-changing machine alters the children's voices to gruff monsters or happy chipmunks.

FOR | Grades K-5  
WHEN | August 9 (Thursday)  
TIME | 9:00-10:00 am

\*Special Note  
Below

## 10 OPTICAL ILLUSIONS

Build your own periscope while learning about optics, reflection, and sight. Children are introduced to the concepts of refraction, science of optics, and biology associated with sight as they explore the physics of optical illusions. The instructor uses a wide variety of optical illusions like the mirror mirage, twisting copper coils, and convex and concave mirrors to demonstrate how physics can trick our eyes. Children use erasable crayons to create a series of laminated paper illusions and explore the reflections of various mirror forms.

FOR | Grades K-5  
WHEN | August 9 (Thursday)  
TIME | 10:30-11:30 am

\*Special Note  
Below

## 11 RADICAL ROBOTS!

Children become wrapped up in the world of robotics. Volunteers act out a robot, remote control device, and an automaton. Children control an automaton through sound and make a soccer robot score a goal! They build their own Robot Hand – a human-like end effector.

FOR | Grades K-5  
WHEN | August 21 (Tuesday)  
TIME | 9:00-10:00 am

# Does your child LOVE science? Sign up for the SUPER SCIENCE 11 PACK

for \$110 and SAVE \$55!  
An Incredible Value!

\*SPECIAL NOTE: Your child may stay at the WHBI, if registered for multiple programs on the same day. Adult supervision will be provided during the half-hour break between the classes and they may bring a snack and drink.

## 3-2-1 ... BLAST OFF! CAMP

3-2-1 Blast Off! This action-packed week focuses solely on rockets and rocket flight. Learn about model rocket design, building, aerodynamics, propulsion, launching, safety, recovery, and repair. Take part in daily launches. Take home your own rockets and an abundance of model rocket knowledge. This Mad Science camp is a blast for boys and girls, alike! It's out-of-this world!

FOR | Grades K-5  
WHEN | July 16-20 (Monday-Friday)  
TIME | 9:00 am-12:00 pm  
WHERE | Queensbury WHBI School, Classroom #121  
FEE | Resident \$135; Non-Resident \$145

## RED-HOT RADICAL ROBOTS CAMP

Discover the world of robots inspired by science fiction writers like Isaac Asimov and Karl Capek. Build an OWI EM4Robot to take home! Learn about robot programming with Mad Science's Baby Steps and Sandwich programming. Program to navigate through an obstacle course! This is true hands-on science fun and it IS red-hot!

FOR | Grades K-5  
WHEN | July 30-August 3 (Monday-Friday)  
TIME | 9:00 am-12:00 pm  
WHERE | Queensbury WHBI School, Classroom #121  
FEE | Resident \$135; Non-Resident \$145

Camp sizes: 10 min | 20 max

## IT'S ALL ABOUT ROCKS!

We are excited to offer this fantastic program, featuring two popular elements that kids love — minerals and climbing! We partner with Mad Science and Rocksport to bring this awesome opportunity to your child. Children will learn about minerals, enjoy a snack which is provided, and have a blast as they rock climb.

**MINERAL MANIA:** The earth can be pretty crusty. Peek beneath its rough exterior and uncover what it's made of. Explore the process of rock formation and learn how scientists classify and identify rocks and minerals. Children will enjoy breaking open geodes to find and keep amazing crystals!

**ROCK CLIMBING:** Children will learn basic skills, techniques, and climbing strategy. Rocksport instructors will be monitoring the children as they have so much fun climbing at the spectacular, state-of-the-art Rocksport facility!

All material, supplies, and a snack are included.

Note to parents: For your child's safety, please inform the Department Staff, at the time of registration, and the instructor of any known allergies that exist for your child!

FOR | Grades K-5  
WHEN | August 7 (Tuesday)  
TIME | 1:00-3:30 pm  
WHERE | Rocksport, 54 Carey Road, Queensbury  
FEE | Resident \$45; Non-Resident \$45

Please Note: the completion of a Rocksport waiver is required.

Class size: 20 max

FEE: Resident \$15/class; Non-Resident \$25/class

WHERE: All Mad Science classes will be held at Queensbury WHBI School, Classroom #121