



Course Descriptions for Summer 2021 Programs in **Elmhurst and **Long Grove****
(For our programs in **Glenview, please see course descriptions on the program flyers, which can be downloaded from our website.)**

Note: Following each description are the location, month, and session in which the course is being offered. **Key:** **EL**=Elmhurst; **LG**=Long Grove

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3D Art and Math

Discover how these two disciplines intersect through builds, drawings, modeling, and structures. **EL-Aug I, LG-Jun IV, LG-Aug I**

3D Printing

Use open-source CAD software to design your own printable items and control the machines. Learn how to calibrate, align, and troubleshoot the machines for common issues. (\$12 lab fee)
EL-Jun V, EL-Jul III

Amusement Park Physics

Why do you feel a butterfly sensation when a roller coaster plunges you downward? It's all in the way Newton's laws of motion collide with your adrenaline. Physics plays an essential role in the exhilarating rides at amusement parks. How do they slow down after nose-diving at high speed? Discover how inertia, kinetic and potential energy, mass, and centripetal and centrifugal forces influence your carnival experiences. Experiment with time, distance, and speed. Design and build your own ride to discover the feats and thrills you can create by strategically employing laws of physics.
EL-Jun III

Animals, Stories, and Art

Do you like animal stories, especially with wonderful illustrations? Explore a rich diversity of stories--from Peter Rabbit to the Pigeon--and their artistic styles. Express your creativity and

love of animals by writing and illustrating animal stories of your own. **EL-Jul III**

Art Unlimited

Create multi-dimensional masterpieces of mixed media, methods and muses, such as collage, printmaking, sculpture, drawing, pastels and watercolor. **EL-Jul I**

Blender

Blender is a powerful 3D computer graphics software toolset used to create animated films, physics simulations, video games and much more. With it, you can create impossible scenes by controlling and animating physics. For example, quickly build a tower just to knock it down, and watch how it falls from any angle; pour water into a glass cup and get the perfect, photo-realistic picture as it splashes back out; write your name in big 3D letters, then hit it with a wrecking ball, smashing it into a million pieces. Computer creativity and imagination are all you need to produce endless animated possibilities.
EL-Jun V

Build and Code with Arduino

Learn micro-controller programming and electronic circuits. Build, program, and keep. (\$20 lab fee) **LG-Jun III, LG-Jul IV**

Chemical Concoctions and Math

How do math and chemistry work together? Measurements, conversions, proportions, and

weight are important factors in chemistry. Study the two disciplines together and separately. Mix strange brews and observe their chemical reactions. Analyze mystery powders and discover secret ingredients. Experiment in a hands-on chemistry lab. [EL-Jun IV](#), [LG-Jun IV](#)

Chemistry Lab

Explore chemical properties through hands-on experiments. Investigate molecular structure. Experiment with solutions, solvents, and reactants, but don't blow up the lab!

[LG-Jun III](#)

Cosplay Creations

Bring your favorite characters or unique creations to life through fabric, foam, hot glue, and more! What everyday items can you transform into horns, costumes, props, or personages? [EL-Jul I](#)

Creating Games from Scratch

Learn the basics of coding with Scratch, a free and easy-to-use coding language developed at MIT. Assemble lines of code and work toward creating your own projects. (A free Scratch account is required; we will register accounts on the first day. Visit scratch.mit.edu for more information.) [EL-Jul IV](#), [LG-Jul III](#)

Creative Space

Are you inventive? Do you have your own ideas that you would like to try? Come flex your building and engineering skills to create new designs and products of your own inspiration.

[EL-Jun III](#)

Creative Writing

Express your unique imagination and creativity by writing in your favorite genre. Which do you enjoy most—science fiction, short stories, rhyming or non-rhyming poetry, scripts, screen plays, biography, mystery, or something else?

Work among like-minded authors, poets, playwrights, etc., with plenty of story prompts, art, music and discussion to inspire and refine your output. [EL-Jul III](#)

Critter-Ology and Magical Creatures

It's time to follow the spiders! Learn about some of the fantastic beasts found in your favorite book series, like Aragog the Acromantula and the Basilisk, plus a few more never-before-seen magical creatures given to us by Newt Scamander himself. [EL-Jun IV](#)

Dry Ice Science

When science (especially chemistry) is depicted in movies or on TV, we usually see a block of dry ice bubbling away in a colorful liquid. Delve into this endlessly and wonderfully useful substance. Discover for yourself its many principles, attributes, and uses. [LG-Jun IV](#)

Grossology of Biology

Embark on an in-depth investigation of the unmentionable yet fascinating bodily functions that keep us going. Gain an understanding of the science behind the human body systems. Investigate the roles of blood, phlegm, sweat, gas, mucus, pus, and other things gross but indispensable. [EL-Jun V](#)

Historic Games of Strategy and Diplomacy

Re-enact history through games of strategy! Choose from games covering a variety of time periods and locations. Expand empires through 4000 years of History of the World, smite thine enemies in Ancient Conquest, invade Britannia, crown your pretender in Kingmaker, colonize exotic lands during the Age of Imperialism, lay iron track across the prairie in Empire Builder, make the world safe for democracy in Diplomacy, or fight World War II in Axis and Allies. [EL-Jul I](#), [EL-Jul III](#), [LG-Jun III](#), [LG-Jul I](#)

Innovation Creation Lab

Thrive in the freedom to discover, explore, and experiment! Your imagination will relish in the abundance of materials and resources and the ideas and possibilities they inspire. Explore a variety of activities, builds, and creations under the tutelage and practical guidance of an expert, creative teacher in a student-centered classroom. [EL-Jun II](#), [LG-Jun II](#)

Intro to Law

Explore the U.S. court system with a real attorney as you practice courtroom debate and take part in mock trials in which you play the parts of judge, jury, attorneys, or witnesses.

LG-Jul III

Java Script

All coding journeys have to start somewhere, and Java is a wonderful place to start. A robust language combined with easy-to-learn syntax, Java is the perfect way to start your journey.

LG-Jun V

Lego's or Lego Robotics: Your Choice

Be challenged each day through various builds! Some days we will be working with our massive amounts of loose Lego's. Other days we will be following builds with Lego Robotics and programming our robots to move. Choice of activities is heavily dependent on student input.

EL-Jun III, EL-Jul III, LG-Jun II, LG-Jul III

Let's Build a City

What would your ideal city look like? Map it out and create a model. Design parks, shopping districts, skyscrapers, and more. How about a zoo? Or a sports arena? You're in charge!

EL-Jul I, LG-Jul I

Lights, Jitterbugs, Action!

Discover electric circuits, with lights, switches, motors, and buzzers. Build your own motorized vibro bugs. Add lights and new features. Create your own design, of course. All powered with safe, low-power coin-cell batteries. LG-Jun III

Microbiology

Learn about helpful and harmful microbes, microscopes, and their roles in the history of medicine. Grow petri dishes showing what lurks on apparently clean surfaces, and discover what myriad tiny things really look like up close.

EL-Aug I, LG-Aug I

Motors, Mechanics, and Engineering

Explore forces, motion, and engineering through a series of rapid prototyping design challenges and building projects. All projects can be brought

home for further revision and experimentation.

EL-Jun V, LG-Jun V, LG-Jul IV

Optical Illusions and Other Ways to Trick Your Brain

Is it possible to not notice a gorilla walking right in front of you? Can something be both hot and cold at the same time? Learn how to fool your brain, and create some fun optical illusions.

LG-Jul II, LG-Jul IV

Physics Lab

Study the principles and properties of matter, energy, motion, and force through builds and experimentation. EL-Jul IV, LG-Jul IV

Platform 9¾

Calling all witches and wizards! You have been accepted into the Hogwarts School of Witchcraft and Wizardry. Before you take your O.W.L.'s, join us to learn a few more potions, compete in Harry Potter trivia, and create your own wands.

LG-Aug I

Polymers, Potions, and Powders

Concoct creative scientific solutions, cause weird chemical reactions, and create slippery slimy substances. EL-Jul II

Put on a Play: Write, Design, Create!

Love to design sets, make costumes, write scripts, or develop characters? Create a play from your own imagination with a small group of live-theater enthusiasts. Perform your play for parents and friends at the end of the week.

EL-Jul II

Python

Python is known for its accessibility. Not only does coding only require a Google account, but the language itself is almost as simple as writing a sentence. You can nail it one week, for sure!

LG-Jul I

STEAM Days

Same description as "STEAM Week" (see following paragraph), only it is not a one-week program. It runs for two days only, and students may enroll in one or both days. EL-Aug III

STEAM Week

Science, technology, engineering, art, math: What inspires your enthusiasm? Come explore your interests. Choose your own, or join in learning about some of ours.

EL-Aug II, LG-Jun I, LG-Aug II

Stock Market and Economics

Play the stock market game as you learn about money, stocks, interest rates, and economics. Learn the history of the stock market crash, housing bubble, and recessions, as well as the true value of a dollar. LG-Jul I

Stop-Motion Movie Studio

Discover all that goes into making a stop-motion movie. Begin with storyboarding; create characters using figures, models, or even humans for comedic effect; design backgrounds and props. Using a digital camera and movie software, turn photographs into your own unique movie, complete with sound and special effects. EL-Jul IV, LG-Jul II

The Science of Art

Traditionally, art and science have been treated as two separate disciplines, but when studied together it is clear to see the impact each has on the other—and ultimately on the artist. Create your own works inspired by your study of this indestructible relationship.

EL-June II

The Science of Star Wars

Learn from many of the technical secrets and principles behind, for example, invisible cloaking, light sabers (build one!), tractor beams, light speed, ships (like Millennium Falcon), droids, fusion, lasers, weightlessness (zero gravity), then try reconstructing them. Simulate beaming someone or something to a planet. Investigate how many of these ideas are currently being researched in the real world.

EL-Aug I, LG-Aug I

The Wonderful Realm of Exotics

Geckos and spiders and snakes, oh my! Get a close-up look (and touch) of these and other amazing and largely misunderstood creatures. Learn about their habitats, lives in the wild, and all of their crazy patterns and personalities.

EL-Jul I, LG-Jun V

Wildlife Conservation

What is a keystone species? Why are polar bears white? How do whales communicate? Explore Earth's various ecosystems and species and how they affect and interact with one another—and with us. EL-Jul IV, LG-Jul IV

Wizards, Spells, and Potions

Explore wand lore, formulate spells, create strange potions, write about your favorite characters, beasts, and ghosts, and take part in a Wizard's Duel! EL-Jun IV, LG-Jun III

Wonders and Blunders of Science

Invent a concoction that's actually good for something. Explore famous scientific bloopers that eventually worked out. EL-Jun V

Writing and Art

Express your ideas through your favorite genres, like short stories, free verse, haiku, imagery, rhymes . . . you choose! Then discover how to enhance and enrich your writing with your own one-of-a-kind art. LG-Jul I

Zombies, Zombies, Zombies!

Learn what to do and how to be prepared for many types of disasters and emergencies, including zombies! Do you know what to do if trapped in a car underwater, stranded without heat in the winter, or bitten by a wild animal? Where is the safest place to be in an earthquake? Can you escape from duct tape? How many types of zombies are there? LG-Jul I

The Center for Gifted and Midwest Torrance Center for Creativity

Joan Franklin Smutny, Director • 847-901-0173 • Fax 847-901-0179 • info@centerforgifted.org • www.thecenterforgifted.org

Mailing address: Box 364, Wilmette, IL 60091 • Physical address: 1926 Waukegan Road, Glenview

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