Winter 2025 Weekend Programs Course Catalog

PreK - Grade 8

Northwestern University's Center for Talent Development (CTD) has an array of high-quality, captivating in-person enrichment courses available for students on Saturdays. Our courses focus on high-interest topics, include both collaborative group work and individual hands-on projects, and are led by expert instructors who demonstrate the joy in learning. Courses in mathematics, science, design & engineering, and computer science & technology engage students during six Saturdays. The courses listed below for our youngest students in Pre-Kindergarten through grade 2 are open enrollment courses. Students in grades 3 through 8 with demonstrated strengths in verbal/reading and/or math, depending on course, may apply. See https://www.ctd.northwestern.edu/eligibility for eligibility details. Visit our application page to begin your application.

Weekend Enrichment Program Details
Dates: Saturdays: January 25, February 1, 8, 15, 22, March 1, 2025 (Make-up date: March 8) **Times:** 9:00 a.m. - 11:30 a.m.; select afternoon courses (12:00 p.m. - 2:30 p.m.) **Locations:** Evanston - view the Weekend Enrichment Program web page for details. **Tuition:** $395

PreK - Kindergarten

Astronomical Adventures AM/PM
Young astronomers learn about the objects in our solar system and how they impact each other. Discover how the Earth's orbit gives us day and night, how the moon appears to us on the planet's surface, and more. Through hands-on projects and play, research and demonstrations, students investigate the world of astronomy!
Open Enrollment: No Eligibility Requirements
Subject Area: Science

Geometry Jumpstart AM
Explore where we see shapes in the structures and objects we use. Through hands-on building, stories, movement, and song, young mathematicians discover geometric concepts found in nature and our everyday environment. Investigate the shapes, properties, and language of geometry. Collaborate as you identify symmetries and attributes in two and three dimensions. Apply math knowledge to create composite shapes and structures using a variety of materials.
Open Enrollment: No Eligibility Requirements
Subject Area: Mathematics

Kindergarten - Grade 1

Robot Road Trip AM/PM
Apply programming vocabulary through investigations and problem-solving, while building a foundation for future computer science experiences. Program a device to travel from point A to point B, using mapping and coding skills. Program various robots to perform increasingly complex challenges as they dash from one destination to another. Students are challenged to develop spatial reasoning skills as they program educational robots such as Bee-Bots to solve problems and maneuver around obstacles. Finally, students will collaborate to create an original maze or road for their robot to navigate.
Open Enrollment: No Eligibility Requirements
Subject Area: Technology & Engineering

Grades 1 – 2

Physics and Engineering: Planes, Trains, and Automobiles AM/PM
Analyze how planes, trains and automobiles are built! See the physics principles behind transport in our world. Build your own wheeled models and then test and compare the results with your classmates. Practice using the skills of an engineer as you create prototypes to test and improve upon, using various design strategies.
Open Enrollment: No Eligibility Requirements
Subject Area: Technology & Engineering AND Science

Getting Down to Business AM
Discover the characteristics of a successful business as you investigate the fundamentals of economics. Imagine you are an entrepreneur as you design and run a pretend business. Apply the skills of a successful businessperson while designing a prototype of an original product or service. Participate in a simulated business world where supply and demand, products, services, and taxes are all key components. Develop and market your original product to your peers.
Open Enrollment: No Eligibility Requirements
Subject Area: Entrepreneurship and Economics

Young Authors Workshop AM
Aspiring authors develop original narratives and performances in this active class. Students engage with the illustrations and writing of award-winning children's literature and analyze images and videos of skilled storytellers and actors to inspire unique works. Independent and collaborative exercises focus on dramatic play, creative writing, storytelling, and performance.
Open Enrollment: No Eligibility Requirements
Subject Area: English and Language Arts

Grades 3 – 4

The Science and History of Spy Work AM
Students receive top secret briefings and complete missions using history, science, and technology. Through hands-on individual and small-group activities, students explore the art and skill behind encryption, cryptography, surveillance, and how to make things disappear. Students uncover the science and engineering of spy work while researching and designing nifty gizmos and gadgets that can help them discover intel, identify assets, or observe an agent while remaining unseen.
Qualifying Area: Verbal
Subject Area: Social Sciences & Humanities

Puzzle Masters: Math and Computational Thinking AM
How do computers and mathematicians use step-by-step processes to solve large problems? Explore important math concepts like algorithms, conditionals, probability, and symbols through problems and games. Collaborate to solve a variety of mathematical, logical, verbal, and visual-spatial brainteasers. Investigate the concepts behind how computers encode and sort information, solve problems, display images, and encrypt data. Use your math mind to think like a computer and become a master of puzzles and problem solving!
Qualifying Area: Mathematics
Subject Area: Mathematics

Robotics with Microcontrollers AM/PM
A working robot is the result of both programming expertise and an effective design engineering process. Through their input/output ports, microcontrollers actuate motors, lights, sensors and sounds. Students gain hands-on experience designing, building and programming responsive, kinetic structures and/or robots using visual programming languages and microcontrollers. Through exploration and collaboration, sharpen the design and computational thinking skills needed to build the next great robot.
Qualifying Area: Math OR Verbal
Subject Area: Technology and Engineering

Grades 5 – 6

Introduction to Java Programming AM/PM
What is the value of a common coding language? Learn about the Java programming language and object orientation using Greenfoot, a complete, interactive Java-based development environment. As you build your own games, explore basic programming concepts, and learn to write in real code. Enhance your games with images and sounds and share feedback with classmates to improve your creation, as computer software engineers do!
Qualifying Area: Math OR Verbal
Subject Area: Technology and Engineering

Microscopy and the Cell AM
How do scientific tools such as microscopes influence the quality of scientific observations? What are the single-celled organisms living in our ponds, lakes and the dirt beneath our feet? Students learn how light microscopes work and how to operate them effectively while building an understanding of microscopic and cell biology. Students explore the vast world of microorganisms, strengthening their skills of observation and analysis by investigating busy microscopic worlds of life, such as a drop of pond water. Learn the different parts of plant and animal cells and how they function. Identify, observe, sketch and label individual organisms and cells while enhancing microscope skills.
Qualifying Area: Math OR Verbal
Subject Area: Science

Revolution and Industry: Play Through History PM
Course description coming soon!
Qualifying Area: Verbal
Subject Area: Social Sciences & Humanities

Science Fiction and the Graphic Novel AM
The graphic novel has become a popular storytelling format, and the genre of science fiction has taken flight along with it. In this course, students analyze and adapt works of science fiction into graphic novels, determining what elements of the story can be translated into a visual narrative. Students gain an understanding of the visual literacy techniques that speak volumes to readers as they independently write and illustrate graphic novels of their very own.
Qualifying Area: Verbal
Subject Area: English and Language Arts

Topics in Geometry AM/PM
Explore higher level concepts in geometry in this hands-on, collaborative class. Projects and investigations will center around geometric concepts such as constructing triangles, proving congruence, and applying the Pythagorean Theorem. Students will also solve problems with area, surface area and volume of cylinders, cones, and spheres. Build upon your prior knowledge as you strengthen your skills in the world of geometry.
Qualifying Area: Math
Subject Area: Mathematics

Grades 5 – 8

FUSE AM/PM
Complete design challenges developed by Northwestern University and foster problem solving, creativity, and persistence skills. Projects span fields such as electronics, robotics, biotechnology, architecture, sound mixing, and fashion design. With the help of an expert facilitator, use STEAM-based practices to produce and present artifacts for peer review, remixing, and expert feedback.
Qualifying Area: Math OR Verbal
Subject Area: Technology and Engineering

Grades 7 – 8

Psychobiology of Memory AM
Ready to explore the mysteries of the human brain? Students use biology, neuroscience, and psychology to investigate questions about memory and sleep. What happens to our brains and body when we sleep? How is it possible for the body to perform complex tasks while the brain is asleep? What are memories, and can we always trust them?
Qualifying Area: Math OR Verbal
Subject Area: Science AND Social Sciences & Humanities

Human Rights & International Affairs AM
Study issues of civil conflict, national security, and human rights in the context of contemporary global topics such as emerging economies and climate change. In this introduction to foreign policy issues, students will analyze the means of international cooperation such as economic globalization, international legal frameworks, environmental agreements, and diplomacy.
Qualifying Area: Verbal
Subject Area: Social Sciences & Humanities