

# Spring 2024 Encounters Course Catalog

## PreK - Grade 6

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. These 3-hour experiences in mathematics, science, design & engineering, and computer science & technology engage students during a single Saturday. CTD Encounters courses are at the amber tier for eligibility, which is open enrollment. Visit our application page to begin your application.

Encounters Program Details
<b>Date:</b> Saturday, March 16, 2024 <b>Time:</b> 9:00 a.m. – 12:00 p.m. <b>Location:</b> Morton School of Excellence, 431 N. Troy St., Chicago, IL 60612 <b>Tuition:</b> \$95
<b>Date:</b> Saturday, April 27, 2024 <b>Time:</b> 9:00 a.m. – 12:00 p.m. <b>Location:</b> Decatur Classical School, 7030 N. Sacramento Ave, Chicago, IL 60645 <b>Tuition:</b> \$95

## PreK - Kindergarten

### Building Bridges

Students learn about bridges and their structure as they playfully explore how bridges are used. Expand design-thinking skills while creating their own bridges. Test the bridge's strength. This course fosters the interests of avid builders and introduces engineering and architecture.

### Physics Fun

Why doesn't a ball or frisbee keep flying after we throw it? Why does water change when it gets hotter or colder? This introductory physics course helps students connect basic laws of physics to their everyday life. Discover the principles of motion, heat, thermal energy, moving electrons and their charges. Engage in an exciting array of activities, experiments and discussions that relate directly to the world students know.

## Grades 1 – 2

### Math in the Animal World

Could a sprinting cheetah beat a speeding porpoise in a race? How far do geese migrate each year? Animals do amazing things and learning about their fantastic feats is a great way to practice data comparisons, single-digit multiplication and algebraic equations. Young mathematicians use numbers to tackle story problems, carry out simple experiments and describe behavior in the fascinating world of animals.

### Skyscrapers and Structures

Students explore the challenges faced by architects of tall towers and stupendous skyscrapers as they design and build models that express ideas from their own up-and-coming imaginations. Foundational knowledge of physics becomes stronger and design thinking skills soar with each iteration. The design and problem-solving approaches used in this course are important for the ongoing study of engineering and architecture.

## Grades 3 – 4

### Volcanoes: Formation and Prediction

Since it was formed 4.5 billion years ago, Earth's surface has been continually reshaped by the hot, churning magma that lies just beneath its rocky crust. Explore the violent but valuable history of volcanism on Earth. Discover what causes volcanoes to form, why they tend to cluster in certain geographic areas, and how scientists monitor activity and predict eruptions. While learning about hot spots, students model the formation of the Hawaiian islands and discuss the past and future of the Yellowstone super volcano.

### Cryptography: Making and Cracking Codes

Codes and ciphers have been used for thousands of years to keep top secret communication hidden from others. Explore some of the more fascinating history of cryptography and steganography, and encrypt and decrypt your own secret messages. Compare different types of invisible ink, create your own secret codes, and learn how spies pass messages to one another without being detected.

## Grades 5 – 6

### **Finding Patient Zero**

Have you ever wondered how scientists are able to identify when and where a disease first started? In this highly collaborative workshop, students have a chance to role play a physician and diagnose infections based on patient history and laboratory results. Students then work together to identify the source of an outbreak through the interpretation of screening tests and contact tracing. Throughout the workshop, students learn and apply fundamental information about how infectious agents cause disease in humans, how to detect these pathogens, and how to ultimately treat these infections.

### **World Building**

Fans of Tomi Adeyemi, Sabaa Tahir, JK Rowling, and Phillip Pullman will develop an original universe for a fantasy series of their own! Students will draw on etymology, archaeology, cartography, and genealogy to answer questions about their universe. Students will design relics and runes, map out terrain, establish law and religion, or consider family lineages in order to leave with a realized setting for their next big story.