



Back at Headquarters

Computer Science Week December 6-12, 2021

[Computer Science Education Week](#) is being celebrated December 6-12, 2021 across the world as a way to promote computer science across the enterprise with students, families, educators, businesses, and communities. During this week, educators and families are encouraged to organize an [Hour of Code](#) to recognize the importance of inspiring students of all ages to better understand computer science and coding concepts. Access resources, tutorials, and promotional ideas through the Hour of Code and CSEdWeek websites to help guide participation.

[House Bill 2170/Public Act 101-0654](#) was enacted by the Illinois General Assembly and signed in to law by Governor Pritzker in March 2021. This Act defines “computer science” in Illinois statute:

““Computer science” means the study of computers and algorithms, including their principles, their hardware and software designs, their implementation, and their impact on society. “Computer science” does not include the study of everyday uses of computers and computer applications, such as keyboarding or accessing the Internet.”

In addition, the Act requires the Illinois State Board of Education (ISBE) to adopt computer science learning standards by December 1, 2021. These standards are in the final stages of adoption and have been published in the [Illinois Register October 22, 2021](#) beginning on page 13256. The Act also adds:

“Beginning with the 2023-2024 school year, the school board of a school district that maintains any of grades 9 through 12 shall provide an opportunity for every high school student to take at least one computer science course aligned to rigorous learning standards of the State Board of Education.”

“All school districts shall ensure that students receive developmentally appropriate opportunities to gain computer literacy skills beginning in elementary school.” The Act specifies that “for pupils entering the 9th grade in the 2022-2023 school year and each school year thereafter,” a prerequisite to receiving a high school diploma includes “one year of a course that includes intensive instruction in computer literacy.” Resources are under development by ISBE and related work groups, and are expected to be included on the [ISBE Learning Standards website](#) later this year.

Let off some STEAM with these fun activities!

K - 4

CS Fundamentals for Elementary Schools

5 - 8

Hour of Code Activities

9 -12

Youcubed Data Science Lessons

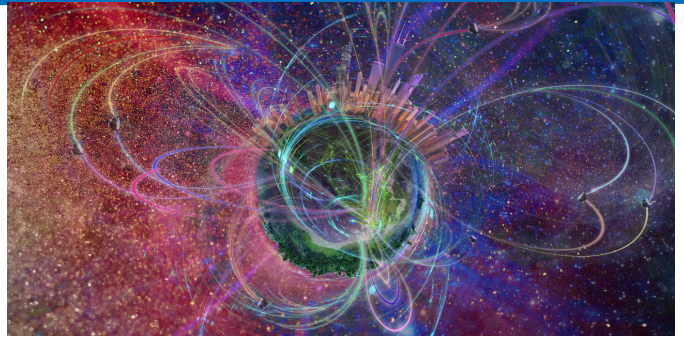
Educator's Corner

STEAM resources for in-person, hybrid, remote learning, and professional development

- [Governor Pritzker announces new interactive broadband mapping and speed test tools to help expand access to high-speed internet in communities across the state](#)
 - [CAPE Framework for Assessing Equity of CS Ed Ecosystems](#)
 - [Amazon Future Engineer](#)
 - [Amazon Cyber Robotics Challenge](#)
 - [DataScience4everyone](#)
 - [University of Chicago STEM Education](#)
 - [Northern Illinois University STEAM YouTube Channel](#)
 - [Free PD Workshops & Webinars](#) and [Try an Hour of Code with CodeHS](#)
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News & Events

Chicago Quantum Summit November 4, 2021



“The fourth annual Chicago Quantum Summit will be a daylong program of presentations and discussions focusing on growing quantum ecosystems, commercializing research, and considering complex issues such as workforce development and inclusion — on both local and global scales.

The Summit is a hybrid event. Virtual participation is broadly available.”

IDEA Playground | Coding 101: Building a Capacity for Coding in your Classroom

“Interested in incorporating the new computer science standards into your classroom, but not sure where to start? **IDEA's November Playground** has got you covered! This month, join our asynchronous sessions to learn how to build capacity for coding in your classroom with our Coding 101 playground.



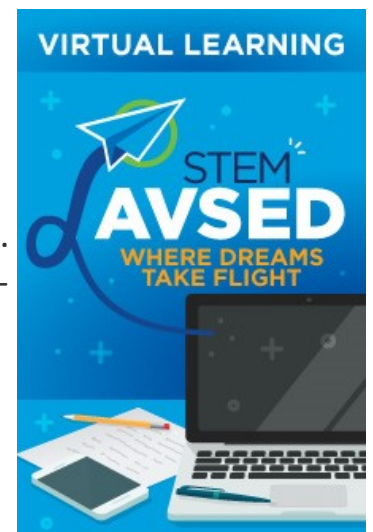
So how does it work?

Watch (or listen!) up to 6 pre-recorded sessions and collaborate with other learners in an online forum. The Playground opens at 8 am on **Monday, November 15** and lasts until **Saturday, December 31**. Learn what you want, when you want to! “

FAA Airport Design Challenge STEM AVSED Virtual Learning and Collaboration

“The Airport Design Challenge is a seven-week interactive, learning and collaboration opportunity which **begins on November 15, 2021**. The Federal Aviation Administration (FAA) Science, Technology, Engineering, and Math (STEM) Aviation and Space Education (AVSED) Program organizes and sponsors this exciting challenge.

Space is limited. **Registration opens November 1, 2021 through November 14, 2021.**”



Self-annealing photon detector brings global quantum internet one step closer to feasibility

Learn more about the role the University of Illinois Grainger College of Engineering professors and students have played in a quantum communications experiment that was launched in to orbit October 12, 2021.



IETC Illinois Education & Technology Conference

November 17-19, 2021 | Springfield, IL & Online

The Learning Technology Center is hosting the 2021 Illinois Education and Technology Conference (IETC) on November 17-19. IETC is an edtech conference focused on technology integration strategies, engaging instructional practices, digital tools and resources, and timely topics like SOPPA, computer science, digital equity, maker spaces, funding, and personalized learning. Attendees can join virtually or in person.

Learning Technology Center of Illinois Computer Science Symposium

**A One-Day virtual conference on Computer Science
January 14, 2022**

“Join your peers from across the Prairie State for the **2022 Computer Science Symposium**. This one-day, virtual gathering will feature numerous presenters from around the state who are excited to share their CS teaching experiences from across multiple grade levels. CS Symposium attendees will also have the chance to obtain proven curricular resources that can help their school or district fan the flames of their burgeoning CS program without needing to reinvent the wheel.”

STEAM Resource Spotlight

Hour of Code 2021: Return to the Moon

Join Tynker to access free activities and events with NASA



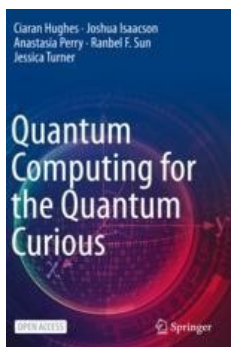
“Tynker has participated in Hour of Code since its inception, but we are the only coding platform to have collaborated with NASA for authentic Artemis-based coding activities. This year our NASA coding projects total 11 activities, including 4 NEW activities: Earth as Art, Martian Weather Station, Terrain Generator, and Design a Mission Patch in Spanish.”

Tynker has “integrated NASA’s latest Artemis Program into our newest coding projects, which aim to be as accessible as ever! From K-12, Tynker/NASA projects can be made in Tynker Blocks, Javascript, Python, and more!” Interested educators can have students join CodeLab Live with NASA subject matter experts, including a show in Spanish, during CS Education Week December 6th–10th.

Quantum Computing for the Quantum Curious

Authors: Hughes, C., Isaacson, J., Perry, A., Sun, R.F., Turner J.

“Quantum computing is a growing field at the intersection of physics and computer science. This module introduces three key principles of quantum computing: superposition, quantum measurement, and entanglement. The goal of this course is to bridge the gap between popular science articles and advanced undergraduate texts, making some of the more technical aspects accessible to high school students, early undergraduates, or the scientifically literate general public. Problem sets and simulation-based labs of various levels are included to reinforce the concepts described in the text.



The module starts by covering basic quantum mechanics concepts needed to understand quantum computing. However, it is not designed to be a comprehensive introduction to modern physics. Rather, the course will focus on the topics that students may have heard about but are not typically covered in a typical physics class.” This book is open access.

The 'A' in STEAM



"Arts foster scientific success" -Dr. Temple Grandin

This series is dedicated to showing how art and creativity play a crucial role in our society on its own and even within the STEM fields. There's a great deal of artistry that goes into our favorite products and media we consume that make our lives easier, or at least a bit more enjoyable, and teach us valuable lessons about history.

EarSketch

Make Beats. Learn Code.

“EarSketch is a free web-based platform to help students of all ages learn core topics in computer science, music, and music technology in a fun and engaging learning environment. EarSketch helps students learn to code in Python or JavaScript through manipulating loops, composing beats, remixing sounds, and applying effects to a multi-track digital audio workstation.

Are you ready to become the next big music producer? Get started composing your own songs in EarSketch with no coding experience needed. Create an account and navigate the EarSketch workspace. Identify the code editor and Digital Audio Workstation. Open your sound browser and try playing some audio clips.

Create a new script and choose your coding language: Python or JavaScript. Python is a popular general-purpose computer programming language that is used by many large companies. JavaScript is also a popular language that is primarily used in web development. Your coding activities may look different depending on the language you choose. The code editor is set to code in text, if you would like to code in blocks, click on the gear icon to toggle to blocks.”



www.illinois.gov/doit-steam



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