

Computer Science in a Box: Resources for Teachers



2017-2018 Workshops

UNIVERSITY OF
Nebraska
Omaha



Google CS[4]HS

UNK UNIVERSITY
OF NEBRASKA
KEARNEY

Where to get the bins we're using today

Today's set of Computational Thinking Bins will be left with the local ESU so that they can be borrowed by teachers in the region.

PDF files of all the handouts and instructions to make your own set of bins will be uploaded here:

<https://www.unomaha.edu/college-of-information-science-and-technology/computer-science-education/community-engagement/ct-bins.php>

Computer Science Teachers Association

<https://www.csteachers.org/>

FREE national membership organization for computer science teachers

[Annual conference](#) - in Omaha in July 2018!

Has many resources

LOCAL Chapters - Omaha & Lincoln. Omaha chapter has online meetings monthly <http://www.csteachers.org/group/omaha> (Second Monday of the month, meetings via Zoom start at 6:30. Contact Kristeen Shabram shabram.kristeen@westside66.net to join the mailing list)

NE CTE

Communication & Information Systems - New standards for high school and middle school

https://cestandards.education.ne.gov/Program_FileLink_Multi.aspx?Sub=Cm&Pg=1

Categories:

- CS
- PLTW CS
- IT
- IT Operations Management
- Web Development
- Data Science
- Software Development
- PLTW Software Development

NE Conferences for K-12 CS/IT teachers

Many ESUs have (Perkins) money for teachers to attend conferences such as:

- [NETA](#): Spring conference Omaha, [Fall conference Kearney](#)
- [UNK Tech Edge](#): February. Theme: 21st Century Education: Digital Tools Advancing Teaching and Learning
- [NCE](#) Mobile App pre-conference workshop funded by Google CS4HS

- For Teachers. Your one stop reference:
www.unk.edu/academics/csit/GoogleCS4HSGrant.php
- [IT Supplemental Endorsement](#) (21 credits) embedded in MS Ed program
 - 15 hours of CS/IT courses; 6 hours TE courses
- **Fully online**
- **IT Teaching Methods - 6 weeks summer course. *Tuition reimbursed by Google CS4HS funding.***
- MS Ed Instructional Tech Emphasis in Info Tech (36 credit program):
www.unk.edu/academics/ted/masters-programs/instructional_technology.php

UNK



- For Students. **Your one stop reference:** cs.unk.edu
- Several Undergraduate degree programs in computing
 - Applied Computer Science
 - Computer Science Comprehensive
 - Cyber Security Operations
 - Information Technology - *unique in Nebraska*
 - Information Networking & Telecommunications - *unique in Nebraska*
 - MIS
 - Multimedia
- Common core - allows students to delay major decision
- Many different activities throughout the year (from the one stop link above, click “community engagement” and then “Experiences for K-12 students”). A few of these include:
 - [Cyber Camp - June 2018](#)
 - [CoderDojos](#) - Meets September 18, October 16, November 20, 2017 at 6-8:00 PM at UNK Otto Olsen room 110. Will also meet the third Thursday in February-April, 2018.



For Teachers (Your one stop reference: <http://cist.unomaha.edu/csed>)

- Earn your IT Supplemental Endorsement, MS in CS Ed, or Grad Certificate (see one-stop link)
- Lending Library of Equipment for Teachers (“community engagement” tab on one-stop link)
- Paid summer PD opportunities in funded by the National Science Foundation (SPARCS, RET, and GenCyber -- see “Teacher Opportunities” on “Community Engagement”)

For Students

- 5 undergraduate degree programs in computing (<http://www.ist.unomaha.edu>)
 - Unique programs: Bioinformatics, IT Innovation
- Many different activities throughout the year (from the one stop link above, click “community engagement” and then “Experiences for K-12 students”). A few of these include:
 - CodeCrush -- program for 8th and 9th grade girls from all over the midwest
 - CSEdWeek Programming contest & Quiz Bowl
 - High School Internship Program (housing is available)
 - Nullify Cybersecurity contest and IT Innovation Cup

Nebraska / SW Iowa NCWIT Aspirations Award

NCWIT - National Center for Women in Information Technology

Aspirations Award recognizes outstanding young women with an interest in information technology. Both national and regional awards exist (same application)

UNO/UNL/UNK jointly facilitate the Nebraska and Southwest Iowa aspirations awards and host an annual celebration.

Awards are given for both the outstanding young women in the region and the outstanding educators who help them be amazing! Nominate your students and colleagues by Nov 6th each year:

<https://www.aspirations.org/aspirations-community/nebraska-sw-iowa>

Questions? Contact Sandy Vlasnik at UNO: svlasnik@unomaha.edu

Curricular Resources

Curricula to facilitate adoption

- UTeach CS: <http://uteachcs.org>
- Exploring Computer Science: <http://www.exploringcs.org/>
- Code.org CS Discoveries curriculum: code.org -> teach or code.org/educate/csd
- Creative computing from Harvard: <http://creativecomputing.gse.harvard.edu/>
- Google [CSFirst](#)
- [CS Principles](#) course - Curriculum designed for 9-10 grade, but can be used for older students, or more advanced middle school students.
- [CS Principles Mobile App Curriculum](#) - uses App Inventor to deliver the CS Principles course
- [Apple's Everyone can code curriculum resources](#)
- [Scratch Ed](#)

Lesson Materials & Other Resources

- [Seven Bigs Ideas](#) from the AP Computer Science Principles Framework.
- [Exploring Computational Thinking](#): Lesson plans, videos, and other resources on computational thinking to support integration into classroom content.
- Science Behind Pixar: sciencebehindpixar.org/ + sciencebehindpixar.org/educators
- CS Unplugged: <http://csunplugged.org/>
- [Computational Thinking for Educators Course](#): Online professional development course to help educators understand, apply and share CT concepts across subjects.
- [CS Learning Resources](#)
- [CS4HS YouTube Channel](#)
- CS 4 Fun: <http://www.cs4fn.org/> e.g. magic: <http://www.cs4fn.org/mathemagic/>
- CoderDojo : <https://coderdojo.com/>
- NCWIT CS Box: www.ncwit.org/resources/computer-science-box-unplug-your-curriculum
- [Even more resources: https://code.org/educate/curriculum/3rd-party](https://code.org/educate/curriculum/3rd-party)