

Resources for Computer Science Teachers

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tiny.cc/csresources



The University of Texas at Austin

Center for STEM Education

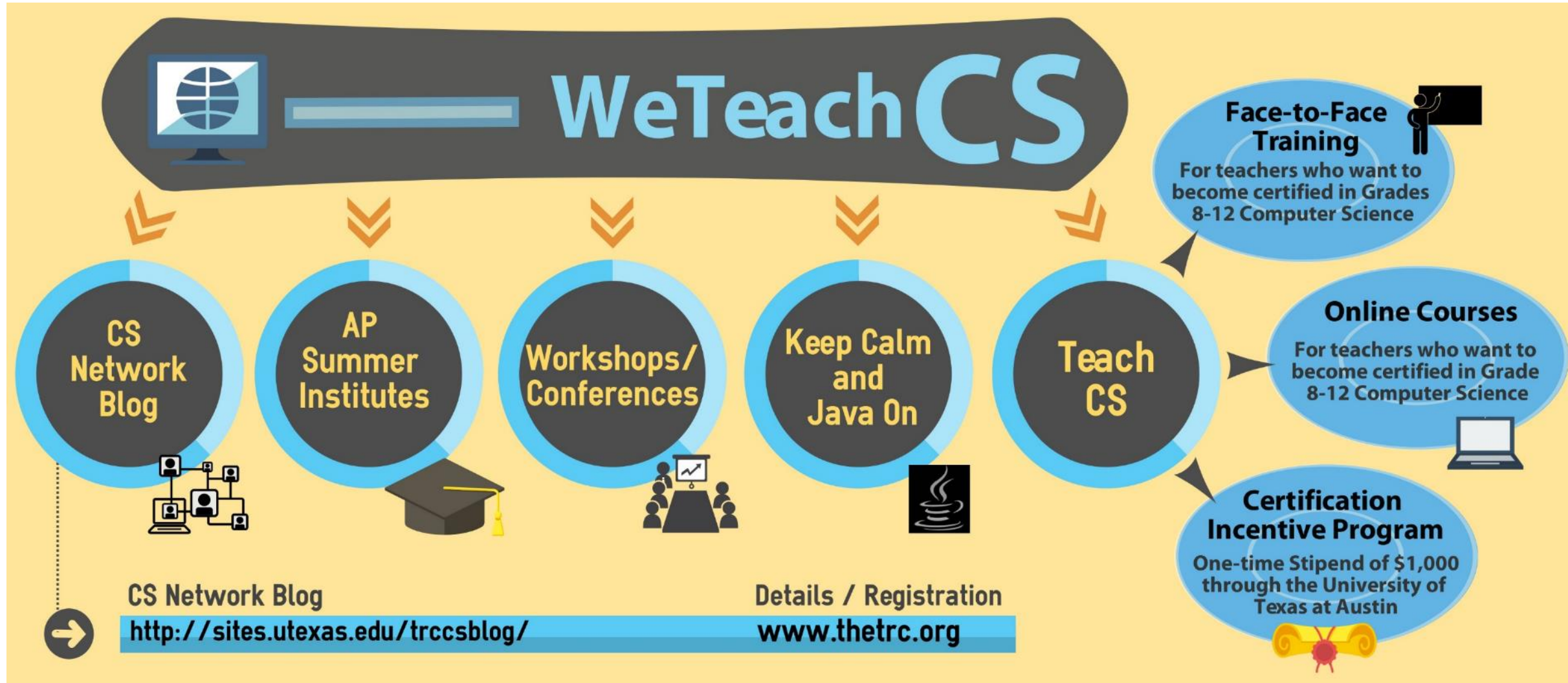
College of Education

Professional Development

WeTeachCS



WeTeachCS – Overview



WeTeachCS – *Central Texas* Teacher Professional Development Opportunities

Date	Event
Jan. 23-Feb. 28, 2016 <i>Austin</i>	STEMpreneurship Teacher Workshops With Raspberry Pi in partnership with student program and 3 Day Start Up; Registration Closed
February 24-25, 2016 <i>Austin</i>	CSP Mini-Conference CS Principles Mini-Conference: Registration Open
June 7-9, 2016 <i>Austin</i>	CS Summit App Inventor, AP CS Principles, Resources for teaching CS, Scratch, Python, Developing 4-year course sequences
June 13-16, 2016 <i>Austin</i>	College Board APSI * Computer Science Principles
July 6-8, 2016 <i>Austin</i>	First Bytes Teacher Workshop Partnership with UT Austin Dept. of Computer Science
July 11-14, 2016 <i>Austin</i>	College Board APSI * Computer Science A for NEW CS teachers
July 25-28, 2016 <i>Austin</i>	College Board APSI in partnership with TCU * Computer Science A for EXPERIENCED CS teachers

* TRC is paying for travel and lodging – details TBD

WeTeachCS – *Statewide* Teacher Professional Development Opportunities (1)

Teach CS	January 13-14, 2016	Austin
STEMpreneurship Teacher Workshop	January 23-February 28, 2016	Austin
TRC CS Network Mixer	Feb 3, 2016	Austin
CSP Mini-Conference	February 24-25, 2016	Austin
Teach CS	March 15-16, 2016	Austin
CS Summit	June 7-9, 2016	Austin
TRC Annual Meeting	June 21-23, 2016	Austin
First Bytes Teacher Workshop	July 6-8, 2016	Austin
Hands-On with Security and Nature workshops	April 2016	College Station
Hands-On with Hardware workshops	March 2016	College Station
AP CS Principles workshop	June 2016	College Station
Bootstrap: Video Game Programming with Algebra	May 14, 16, & 17, 2016	Dallas
Summer Institute	<i>Unknown</i>	Dallas
5 day Training-of-Trainers (TOT)	<i>Unknown</i>	Dallas
Teach CS	Unknown	Dallas
Teach CS at Houston ISD	March 22-23, 2016	Houston
Introduction to Coding and Computational Thinking	June 13-15, 2016	Houston
Bootstrap: Video Game Programming with Algebra	June 27-29, 2016	Houston
Teach CS at ESC 18	May 6-7, 2016	Midland

WeTeachCS – *Statewide* Teacher Professional Development Opportunities (2)

Basics of computational thinking into core content classroom activities	Jan/Feb 2016 (2 Saturdays)	Rio Grande Valley
Incorporation of computational thinking activities into grade/content specific teacher created lesson exemplars	May 2016 (Saturday)	Rio Grande Valley
Conference for the Advancement of Mathematics Teaching (CAMT)	June 29-July 1, 2016	San Antonio
Scratch	<i>Unknown</i>	Tyler
Robotics	<i>Unknown</i>	Tyler
Mobile app development	<i>Unknown</i>	Tyler
Bring business partners together with area teachers and district personnel	<i>Unknown</i>	Tyler
College Board APSI (Computer Science Principles)	June 13-16, 2016	<i>Location TBA</i>
College Board APSI (for NEW teachers)	July 11-14, 2016	<i>Location TBA</i>
College Board APSI (for EXPERIENCED teachers)	July 25-28, 2016	<i>Location TBA</i>
Keep Calm and Java On (Java Programming)	Feb 2016	Online
KCJO Spring Cohort (Java Fundamentals)	March 21st - May 11th	Online
KCJO Spring Cohort (Java Programming)	May 16-25, 2016	Online

Keep Calm and Java On – Spring 2016



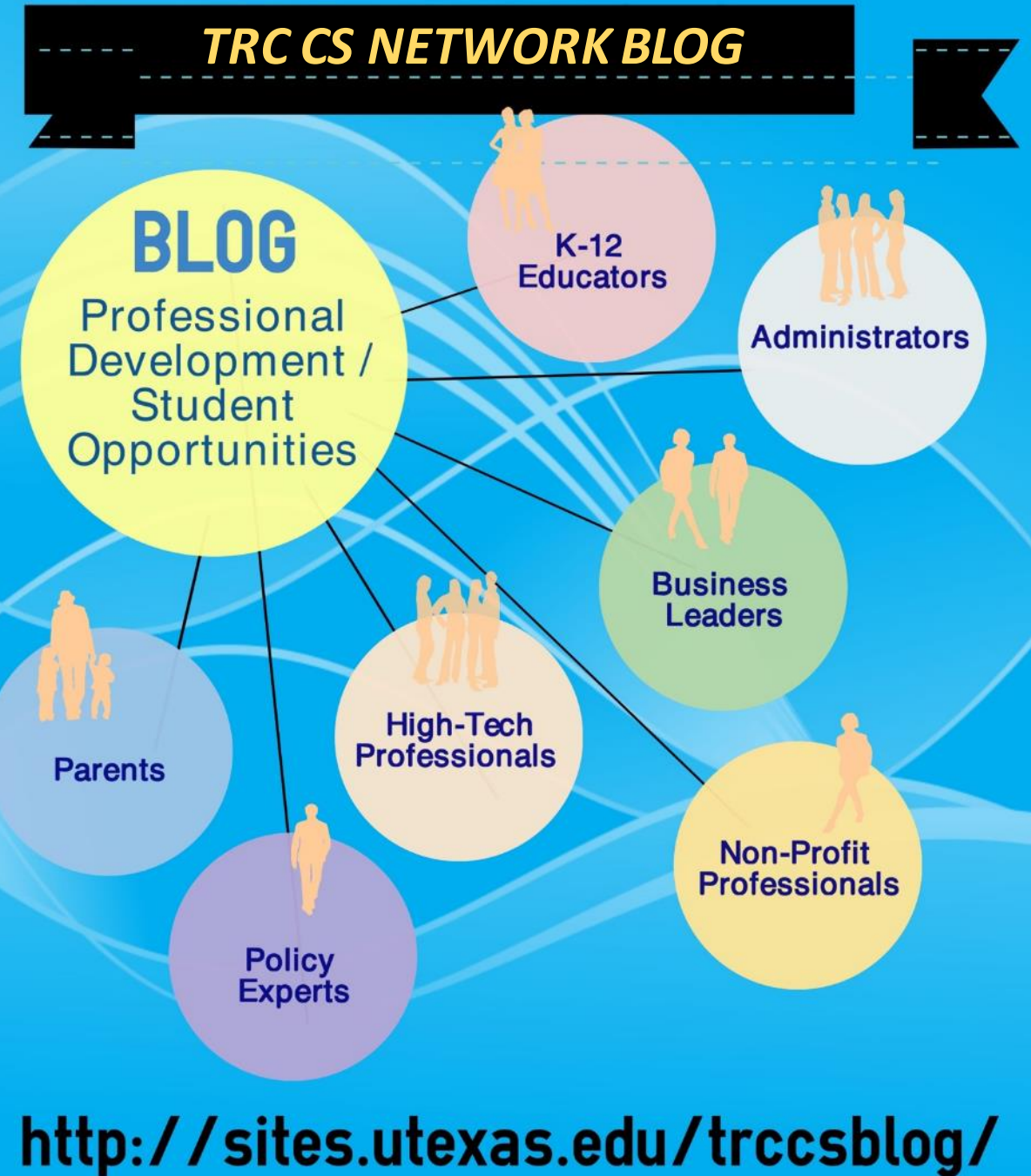
- **Java Fundamentals**
March 21 – May 11, 2016
- **Java Programming**
May 16 – May 25, 2016

Online Training

TRC CS Network Blog



Texas Regional Collaboratives



Teach CS 8-12 Certificate Incentive Program

This program provides an opportunity for Texas educators to apply for a one-time stipend through The University of Texas at Austin, Center for STEM Education.

Computer Science



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\$1,000

Details on TRC Website

Teach CS Online Course in EdX

*COMING SOON
TO A COMPUTER NEAR YOU*



June 2016

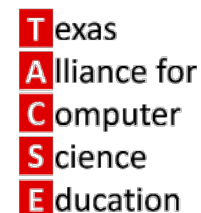
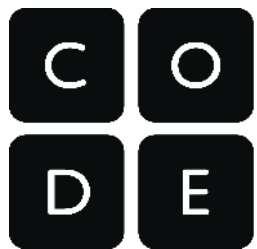
Additional Resources

cs10kcommunity.org/projects

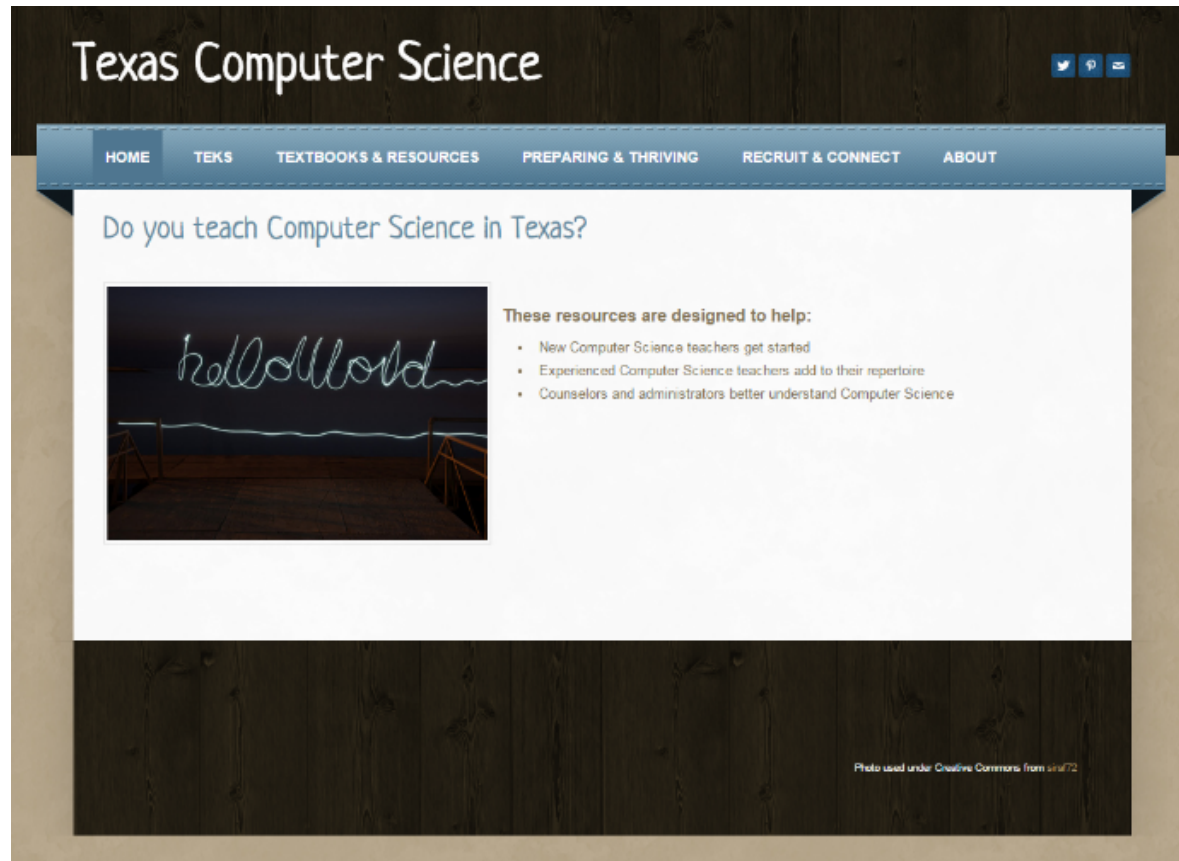
The screenshot shows the CS10K Community website. The header includes the CS10K logo, navigation links (About, ECS Course, CSP Course, Resources, CS10K Projects, Events, Groups, People), and a search bar. The main content area is titled 'CS10K Projects' and contains a paragraph about NSF funding. Below this, there are two columns of project listings: 'CSP Projects' and 'ECS Projects'. The CSP Projects list includes 'Hartford, CT Mobile CSP', 'Boise, ID IdoCode: A Sustainable Model for Computer Science in Idaho High Schools', 'Baltimore, MD CS 10K: CS Matters in Maryland', 'Durham, NC AP Computer Science Principles, Phase 2 Pilot', and 'Santa Fe, NM New Mexico Computer Science for All'. The ECS Projects list includes 'Milwaukee, WI CS 10K: Collaborative Research: Priming the PUMP - Preparing the Upper Midwest for Principles of Computer Science', 'Waltham, MA Massachusetts Exploring Computer Science Partnership (MECSP)', 'Chicago, IL The BASICS Study (Barriers and Supports to Implementing Computer Science)', and 'Salt Lake City, UT The Utah Exploring Computer Science Initiative'.

code.org/learn

The screenshot shows the Code.org website. The header includes the Code.org logo, navigation links (LEARN, TEACH, STATS, HOW TO HELP, ABOUT), and a 'Sign in' button. The main content area is titled 'Tutorials for Beginners' and features a large banner for 'Code Studio' by Code.org. The banner includes a cartoon character, a soccer field, and a complex geometric pattern. Below the banner, there are two sections: 'Tutorials that teach JavaScript' and 'Learn computer programming' by KhanAcademy. The JavaScript section includes a code editor and a penguin character. The KhanAcademy section includes a cartoon character and a laptop with the KA logo.



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thetrc.org/computer-science-resources



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Computer Science Resources

Posted in computer science, Computer Science



Recruitment and Clubs

- ncwit.org
- yeswecode.org
- starsalliance.org
- madewithcode.com
- cs-first.com
- blackgirlscode.com
- girlswhocode.com
- girlstart.org
- coderdojo.com
- ngcproject.org
- codenow.org
- techgirlz.org
- girlsintech.org
- tech-girls.org
- code2040.org
- projectcsgirls.com
- girldevelopit.com



TEALS



www.tealsk12.org

- TEALS (Technology Education And Literacy in Schools) is a grassroots program that recruits, trains, mentors, and places high tech professionals from across the country who are passionate about computer science education into high school classes as volunteer teachers
- TEALS volunteers team-teach with ISD teachers
- Two courses: Introductory and AP
- Embedded PD that builds teacher capacity
- Now recruiting schools that want industry volunteers

Professional Organizations Learn from Colleagues

<http://www.tcea.org/membership/sigs/tacs-sig/>



ta/cs SIG

csta.acm.org



connect.iste.org



Computing Teachers
Network

sigcse.org



Teaching & Learning Resources

Assignments, Activities, Videos


www.engage-csedu.org



 Sign-in

Search this site

Search

 Search Materials

 Engagement Practices



Find and share engaging materials for introductory computer science (CS) courses

nifty.stanford.edu

Nifty Assignments

The Nifty Assignments session at the annual SIGCSE meeting is all about gathering and distributing great assignment ideas and their materials. For each assignment, the web pages linked below describe the assignment and provides materials -- handouts, starter code, and so on.



See the [info page](#) for ideas about what makes a nifty assignment and how to apply for the Nifty session. Applications for Nifty-2016 are due **Mon Aug 24**, a few days before the regular SIGCSE deadline as usual. Please email any suggestions or comments to [Nick Parlante @ cs.stanford.edu](mailto:Nick.Parlante@cs.stanford.edu) with "nifty" in the subject. [Nick's Home](#)

Nifty Assignments 2015

[Counting Squares](#) -- Mark Sherriff, Luther Tychonievich, and Ryan Layer

CS0-CS1 Neat and easy squares activity

[Speed Reader](#) -- Peter-Michael Osera

CS1 Nifty Animation

[GeoLocator](#) -- Stuart Reges

CS1 Fun Geo Data

[Packet Sniffing](#) -- Suzanne Matthews and David Raymond

CS1 Eye Opening Networking

[Melody Maker](#) -- Allison Obourn and Marty Stepp

CS1 Fun with Sound

[Seam Carving](#) -- Josh Hug

CS1-CS2 Amazing Image Resize Trick

Nifty Assignments 2014

[Analyzing Google Books Dataset](#) -- Josh Hug

CS1 Amazing Language Data in CS1

[Game Of Sticks](#) -- Antti Laaksonen and Arto Vihavainen

CS1 Neat Game "AI" from shockingly simple trick

[Purple America](#) -- Kevin Wayne

CS1 Big Map Data

[Ants vs. SomeBees](#) -- John DeNero, Tom Magrino, and Eric Tzeng

CS1 Riff Plants vs. Zombies

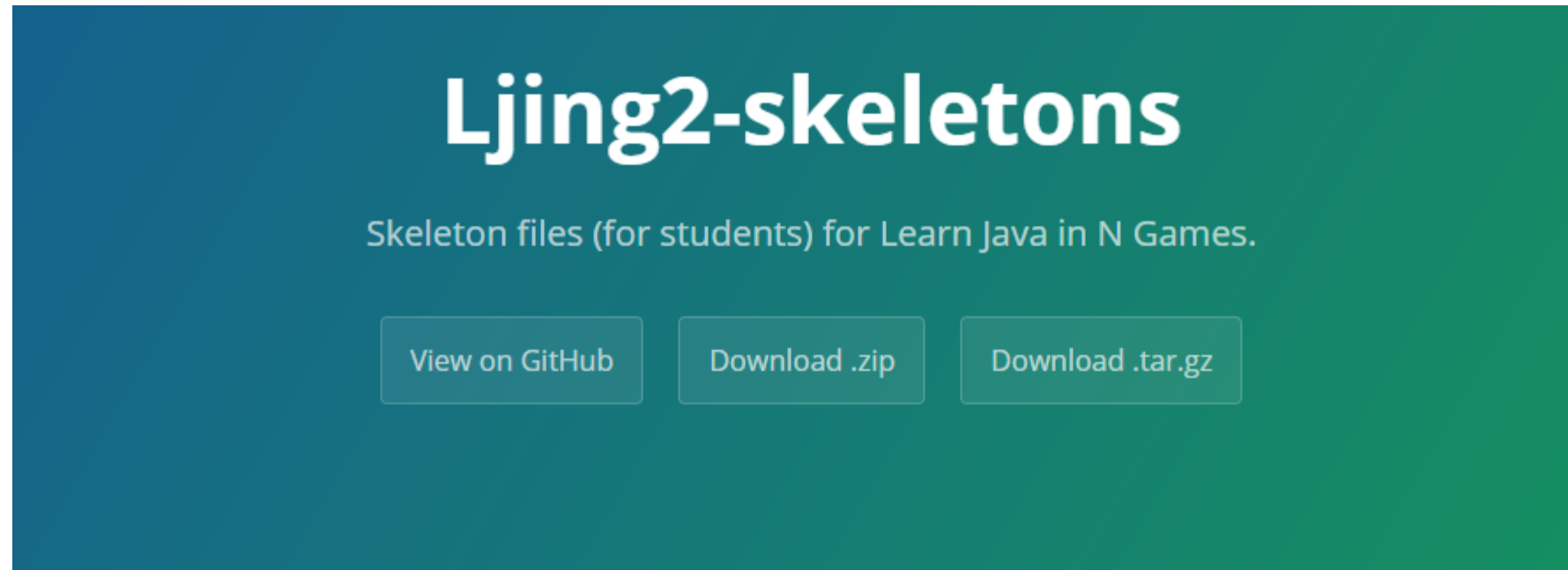
[Segregation Simulation](#) -- Frank McCown

CS1 Neat Real-World 2-d Modeling

[Image Stacker](#) and [The Pesky Tourist](#) -- John Nicholson

CS2 Two very neat 2-d image manipulations

peterdrake.github.io/ljing2-skeletons





Learn Java in N Games

This repository contains a collection of game-based activities for learning about Java programming.

www.youtube.com/user/CodeOrg/playlists

Code.org ✓

[Home](#) [Videos](#) [Playlists](#) [Channels](#) [Discussion](#) [About](#) 

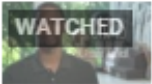


Learn about computer science


Code.org • 7 videos • 5,151 views • Last updated on Mar 24, 2015

[▶ Play all](#) [◀ Share](#) [+ Save](#)


1

**Chris Bosh explains FUNCTIONS**
by Code.org


2

**Bill Gates explains IF & IF/ELSE statements**
by Code.org

3

**Pair Programming**
by Code.org

4

**Mark Zuckerberg teaches REPEAT LOOPS**
by Code.org

www.youtube.com/user/AlgoRythmics

AlgoRythmics

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Uploads

Date added (newest - oldest) ▼

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**Quick-sort with Hungarian
(Küküllőmenti legényes) folk**
959,763 views • 4 years ago



**Merge-sort with Transylvanian-
saxon (German) folk dance**
298,642 views • 4 years ago



**Shell-sort with Hungarian
(Székely) folk dance**
365,104 views • 4 years ago



Select-sort with Gypsy folk dance
362,323 views • 4 years ago




**Bubble-sort with Hungarian
("Csángó") folk dance**
991,589 views • 4 years ago



**Insert-sort with Romanian folk
dance**
405,280 views • 4 years ago

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Categories

Computer Science

education

Binary Vs Linear Search Through Animated Gifs

Posted in algorithms, Learn Programming, Programming Gifs

Binary search steps: 3

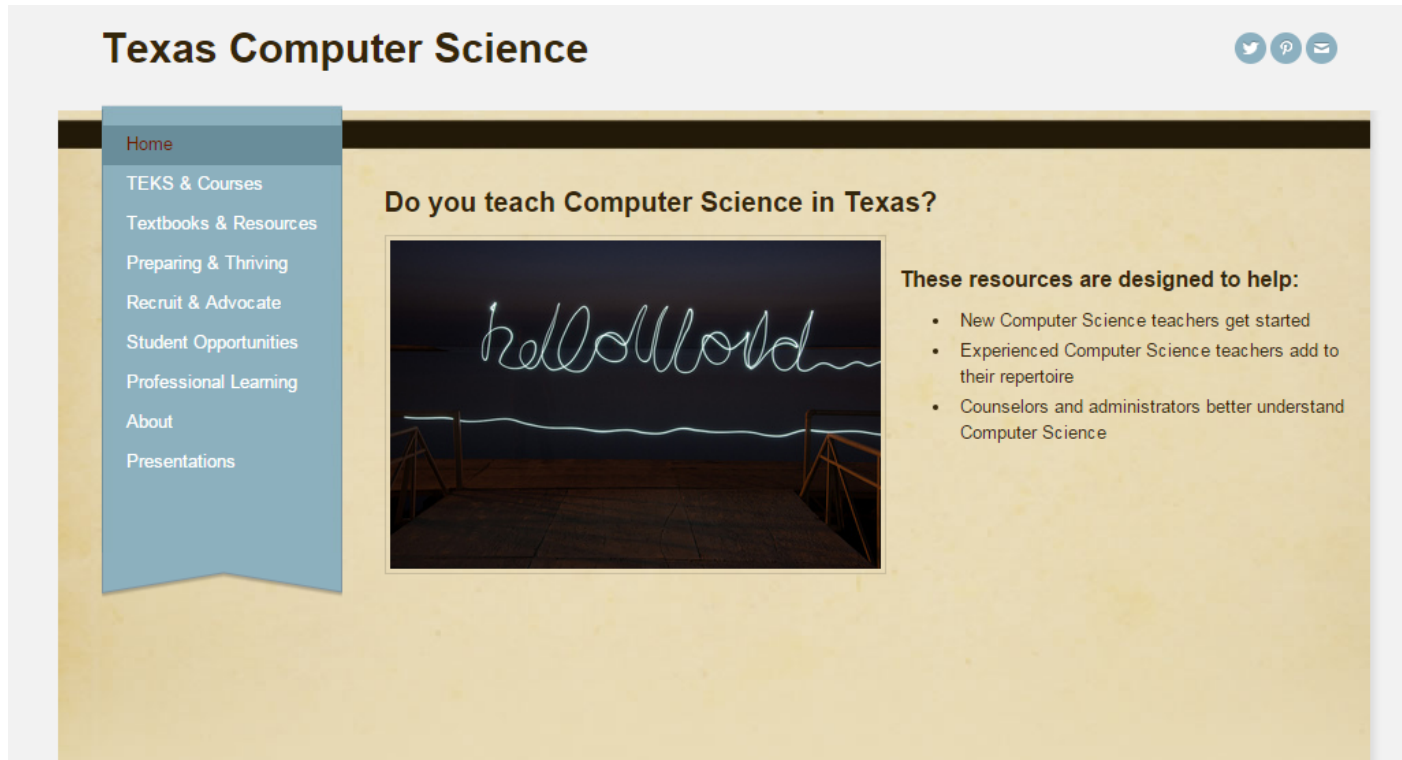
1	3	5	7	11	13	17	19	23	29	31	37	41	43	47	53	59
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

.....

Sequential search steps: 8

1	3	5	7	11	13	17	19	23	29	31	37	41	43	47	53	59
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

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Textbooks & Resources

- Assignment Ideas
- Topic Resources