

Integrating Technology Resources into your Classes and School

[Linked at the very bottom of <http://www.garfieldcs.com/>]

Building & updating a successful CTE program:

- Find **existing resources, observe other programs, and use them.**
A few hours of investigation can save you days of lesson planning.
- Leverage and make new **Industry contacts**, they can help to...
- Identify key **industry standards** to include in your classes. Follow your Profession Advisory Board meetings. Update them regularly.
- Keep your class relevant by integrating:
 - o **Speakers** from Industry (minimum once per semester)
 - o **Latest news & innovations** about you subject/career areas: videos & articles – discuss them with your class. Encourage students to bring them in to class.
 - o Supplement lessons with **constant examples** from your or others' work experience that relate to the material presented.
- Find & promote **free resources for your students**, use free applications that students can download when possible. i.e. Cloud Applications:
 - o Google Drive: https://www.google.com/intl/en_US/drive/start/index.html
 - o Microsoft Live/Office/Skydrive: <http://windows.microsoft.com/en-US/windows/outlook-office>
 - o Amazon Cloud: <http://www.amazon.com/gp/feature.html?ie=UTF8&docId=1000828861>
- Find ways to provide **Community College & University credit** for your high school classes through Tech Prep (<http://www.techprepseattle.org/>) and local university programs. Also certifications from **District Skills Centers**.
- Participate in Career and Technical Student Organizations (**CTSO's**) such as DECA, FBLA, SkillsUSA, TSA, & First Robotics (More details in your Student and Personal Leadership Development class.)
- Make sure to show **a worldview of the career workplace.**
- Highlight **under represented groups in your industry area.** As appropriate, encourage & provide additional opportunities for these students. NOTE: All WA school events must be inclusive.
- Advertise **local competitions and opportunities** for students to learn about the career area. Your district advisor and other mailing lists can help to identify these.
- Promote your class by having **clubs & events** and hopefully including your victories in school announcements.
- Have a class website: www.garfieldcs.com
- Use your **Passion** for the subject/career every chance you can. A student will remember your message so much more if you speak about it with personal vigor. Even if it may not be 100% related to the subject, this engages students and shows them you are more than a teacher.
(my example: <http://www.boneboy.com/costume/02hbcg.html>)

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Addendum: Tip of the Day...



Use Clean Video Search (AKA “iboss”) to reduce advertisements and avoid inappropriate content when showing You Tube videos in class. (in SPS, classroom computer video searches result in the iboss results.)

1) Find link (URL) for the YouTube video you want to show, it will look something like this: **<http://www.youtube.com/watch?v=8nwTj7I-XZQ>**

In this example, the “**8nwTj7I-XZQ**” is the actual VideoID of the video on YouTube.

2) Replace the beginning of the link up to the “**...watch?v=**” with the following:

<http://www.cleanvideosearch.com/media/action/yt/watch?videoid=>

Basically placing the Video ID after the equal sign.

3) For example this video would be:

<http://www.cleanvideosearch.com/media/action/yt/watch?videoid=8nwTj7I-XZQ>

4) Test out the new link, to make sure it works properly; there are occasionally links that do not allow access through iboss. Sometimes there are additional tags you may also need to remove

Reality Check on the Importance of Technical and Computer Science skills in the workforce:

- **The 21st Century** skills we need to include in our CTE class can be enhanced by **technical tools and computer science principles**.
- A graduate in any major (from University or High School) is much **more employable** if they have demonstrated **Technical skills and had Computer/Programming classes**.
- Being able to describe passionately **a personal, preferably team, Project** on applications and during interviews is a huge advantage for both academic and employment opportunities.

Computer Science Resources (are coming from everywhere):



Code.org – great resource and it's free!

Online tutorials, teacher resources, and advocacy.



Hour of Code had over **28 Million Participants** to date

(<http://code.org/>) arguably the largest

Practically every major Tech Company is helping out!

Promoting Computer Science skills: <http://code.org/promote>

Tech Start Education Foundation: (<http://www.techstart.org/>)



“Provide teacher training and student enrichment activities that incorporate computer science, information technology and engineering education in Oregon K-12 schools.”
Classes on: Using Google Tools, Robotics, and many others

Local University Resources:



University of Washington



UW **DawgBytes**, UW CSE's K-12 outreach program, DawgBytes, aims to introduce both students and teachers to the exciting world of computer science & engineering.

<http://www.cs.washington.edu/outreach/k12/>

- UW HS CS Outreach Contact: Allison Obourn
(aeobourn@cs.washington.edu)

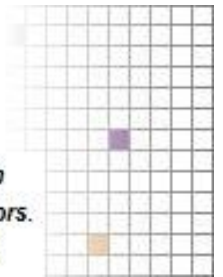
UW Summer Technology Classes:



CS 4 HS
WASHINGTON

An exploration of computer science for teachers of math and science with an additional track for school counselors.

~August 6-8th, 2012



<http://cs4hs.cs.washington.edu/>

- Earn 20 clock hours from WSTA
- Expose you to exciting examples of computer science operating in close relationships with other disciplines.
- Teach you the basics of computational problem solving and give you the vocabulary to relate these concepts to your students and your own subject material.
- Broaden your view of computer science and the way it is shaping Washington's communities and people--and those of the entire world.
- Explore opportunities for you to help broaden your students' interest in computer science and dispel myths about what computer science is and is not.

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Project Lead the Way: (<http://www.pltw.org/>)



“Project Lead The Way (PLTW) is the leading provider of rigorous and innovative Science, Technology, Engineering, and Mathematics (STEM) education curricular programs used in middle and high schools across the U.S.”

Gateway To Technology | Middle School Engineering Program (<https://www.pltw.org/pltw-gateway>)

Units like: Automation and Robotics (AR), Design and Modeling (DM), Energy and the Environment (EE), Flight and Space (FS), Green Architecture (GA), and more.

Pathway To Engineering | High School Engineering Program (<https://www.pltw.org/pltw-engineering>)

Units like: Introduction to Engineering Design (IED), Principles of Engineering (POE), Aerospace Engineering (AE), Biotechnical Engineering (BE), and a **Capstone Course:** Engineering Design and Development (EDD)

Biomedical Sciences | High School Biomedical Sciences Program (<https://www.pltw.org/pltw-biomedical-science>)

Units like: Principles of the Biomedical Sciences (PBS), Human Body Systems (HBS), and a **Capstone Course:** Biomedical Innovation (BI)

PLTW Computer Science Program (<https://www.pltw.org/pltw-computer-science>)

Units like: Introduction to Computer Science (ICS), Computer Science and Software Engineering (CSE), Artificial Intelligence (AI), Cybersecurity (SEC) and a **Capstone Course:** Computational Problem Solving (CPS).

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Local Seattle Schools with these Programs: (I believe still accurate)

Cleveland HS:

School of Life Sciences (Biomedical Sciences)

School of Engineering and Design

Roosevelt HS: (Pathway To Engineering, Semester model)

Introduction to Engineering Design (IED)

Aerospace Engineering (AE)

Computer Integrated Manufacturing (CIM)

Digital Electronics (DE)

+ Project Lead

Ballard HS:

Series of classes with **Capstone Course:** Engineering Design and Development (EDD)

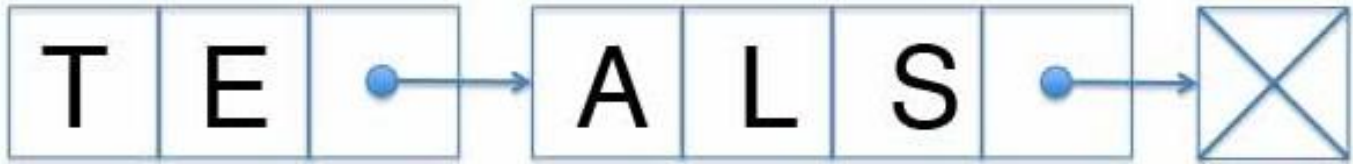
Garfield HS:

Introduction to Engineering Design (IED)

Principles of Engineering (POE)

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Get HELP!



<http://tealsk12.org/>

“TEALS (Technology Education And Literacy in Schools) is a grassroots employee driven program that recruits, mentors, and places high tech professionals who are passionate about digital literacy and computer science education into high school classes as part-time teachers in a team teaching model where the school district is unable to meet their students' Computer Science needs on its own.”

Current Focus on:

- Introduction to Computer Science
- AP Computer Science A

Local Associations:

For example, us CS teachers have:

Puget Sound Computer Science Teachers Association

<http://www.pscsta.org/>

- Monthly meetings on a variety of topics with other teachers (<http://www.pscsta.org/p/meetings.html>)
- Programming Competitions
- Outreach contacts – guest speakers

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Extra Credit: University Partnerships

Tech Prep: Community College Credit for HS Classes



<http://www.techprepseattle.org/>

Courses Offered:

- [North Seattle Community College](#)
- [Seattle Central Community College](#)
- [South Seattle Community College](#)
- [Seattle Vocational Institute](#)

UW in the High School: UW credit for certified HS classes

(<http://www.outreach.washington.edu/uwhs/>)



Through the UW in the High School (UWHS) program, high school students can complete University of Washington courses — and earn UW credit — in their own classrooms with their own teachers.

- Comparative Literature
- English Composition
- History
- Informatics and Computing
- Math
- Psychology
- Science
- World Languages

Promoting your classes:

Identify National Events: Make them a special event in your school



<http://www.csedweek.org/>

My Example: <http://www.garfieldcs.com/wordpress/wordpress/wp-content/uploads/2012/12/CS-Ed-Week-2012.pdf>

Have a Clubs for your students: provides way for students to participate even if they are not in your class. (<http://www.garfieldcs.com/cs-clubs/>)

Promote under represented groups in industry:

Inspiring Girls Now in the Technology Evolution

(<http://www.ignite-us.org/>)



- Events focused for Girls in Computing & Technology
- At school special classes, introduction to programming
- Sponsors Field Trips to Microsoft and other companies

IGNITE
INSPIRING
GIRLS NOW
IN
TECHNOLOGY
EVOLUTION

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District Skills Centers:

Additional opportunities for your students, usually arranged through your counseling office. Districts vary; Seattle's new programs is for Junior/Senior year, 2 afternoon classes per Semester that can earn Certifications in subject area:

For Seattle: <http://skillscenter.seattleschools.org/>

AEROSPACE SCIENCE and TECHNOLOGY



CISCO/MICROSOFT IT ACADEMY



DIGITAL ANIMATION & GAME PROGRAMMING



MEDICAL CAREERS

Plus several others have been added in the past couple years!!



Any further Questions? feel free to contact me at:

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