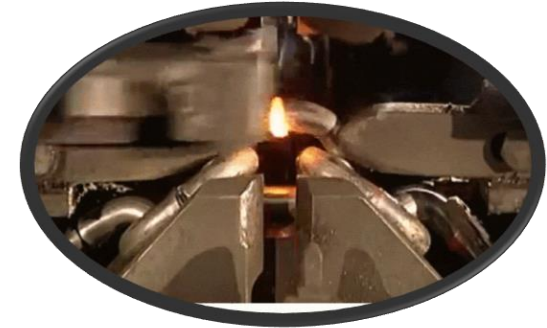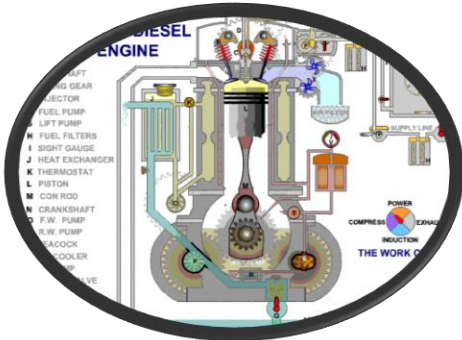# Tech Resources for CTE Instruction

Michigan Career Education Conference

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Topics:

1. Online Interactive Video Training
2. Teacher Classroom Websites
3. Diagramming Processes
4. Instructional Planning
5. Miscellaneous tools
6. Advice on Using Tech Tools

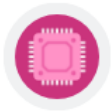# 1. Online Interactive Video Training

- Khan Academy
- Youtube for Schools

- Online Interactive Learning Management System?
    - Individuals
    - Students
    - Teachers / Classrooms
    - Parents

- [Khan Academy Videos](#)

Selected CTE Topics in Khan Academy

Lego robotics
0 of 26 complete
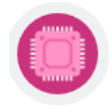Introduction to the Lego NXT robotics platform

Introduction

Light guitar

Coin detector

Ant bot

Programming basics

Circuit analysis
0 of 93 complete
Circuit analysis is the process of finding all the currents and voltages in a network of connected components. We look at the basic elements used to build circuits, and find out what happens when elements are connected together into a circuit.

Circuit elements

Resistor circuits

DC circuit analysis

Natural and forced response

AC circuit analysis

Home-made robots
0 of 84 complete
Start your own robotics project with Spout, Spider, and Bit-zee!

All about Spout

Spout Bot with Solder

Spout Bot without Solder

Spider Bot

Bit-zee Bot

Lab values and concentrations
0 of 10 complete
Ever wonder about your lab values and what they mean? Lab values measure amounts of electrolytes, metabolites, proteins or cells in your blood and occasionally tell you about how hormones and enzymes are working! Dive deeper and expand your understanding of concentration units used in common medical lab values as well!

Introduction to lab values and no...

What's inside of blood?

Units for common medical lab val...

What is an equivalent?

The mole and Avogadro's number

Molarity vs. molality

Molarity vs. osmolarity

Calculate your own osmolarity

Molarity, molality, osmolarity, osm...

Tonicity - comparing 2 solutions

Personal finance

0 of 124 complete

Making financial decisions can be intimidating, especially if you're just starting to manage your own money. But you don't have to figure things out on your own. Whether you're creating your first budget or saving for retirement, these lessons can help you make the financial choices that work best for you.

Saving and budgeting

Interest and debt

Investment vehicles and retireme...

Income

Housing

Auto

Taxes

Paying for college

Keeping your information safe

Careers

0 of 151 complete

Are you wondering how to land your dream job or negotiate your salary? Finding answers to questions like these can be hard, but we're here to help. We ask real people in real jobs how they make it all work in our new video series about careers.

Navigate your career

Serve your community

Support health and wellness

Work in tech

Educate

Start a business or go freelance

Explore hospitality

Design, create, perform

Conduct research

Build and fix things

Manage people and processes

Analyze and advise

Travel and explore

Entrepreneurship

0 of 50 complete

Personal lessons and insights from accomplished entrepreneurs are the basis of this interview series produced by the Ewing Marion Kauffman Foundation and Khan Academy.

Interviews with entrepreneurs

Healthcare

New Topics in Khan Academy

Pixar in a Box

Topics

Orientation	Virtual cameras	Animation	Sets & staging
The art of storytelling	Effects	Environment modeling	Rendering
Simulation	Patterns	Character modeling	See descriptions ∨
Color science	Rigging	Crowds	

- Setting up a Khan Academy Classroom
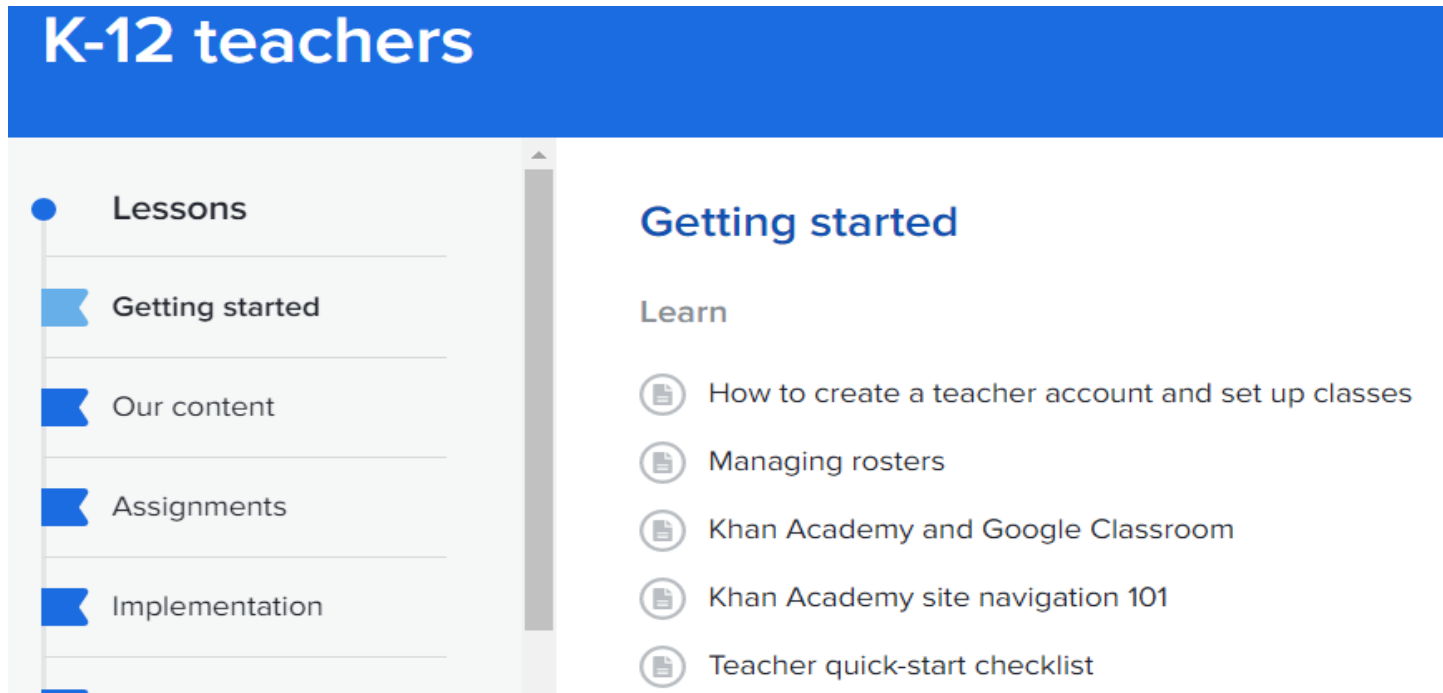
Khan Academy in My Classroom

CTE and Khan Academy Suggestions

- Inventory the academic skills needed by students to be successful in each segment and have these available at your school website and in the class materials.

- Use as a targeted resource for remediation.

- Report on a new skill of the month – student reports

- Khan Academy material can be used with Google Classrooms

- Communicate with academics instructors concerning how the content is reinforced in career and technical education.

- Khan can help parents help their students

Best practices

School Tube

- ….. is the nation's largest K-12 video sharing platform, specifically designed for students, teachers, and parents. All student uploaded videos on SchoolTube have been approved by local educators - ensuring a safe and informative video sharing experience.
- It promotes a code of conduct and ethics related to video and internet use.
- School administrators typically approve SchoolTube for use in their schools.
- Used in over 60% of all K-12 schools nationwide.

[School Tube for Classrooms](#)

School Tube CTE Examples

- [Autobody Program](#) - Promotion

- [Automotive](#) – Tire Repair

- [Computer](#) Power Supply

- [Health](#) – Blood Vessels

- [Welding](#) – Welding Rods

- [Manufacturing](#) - Robotics

How to Make and Upload a Video on YouTube / School Tube Resources

- [Video 1](#)
- [Video 2](#)
- [Video 3](#)

CTE Uses:

- Collections of student projects
- Students taping processes
- Program highlights
- Advisory board information
- Employment Opportunities
- Interviews with program graduates
- Differentiated instruction
- Collaboration with other programs
- Others?

Best practices

Teacher Websites?

1. It is a gateway for classroom engagement

2. It is communication between teachers, students and parents

3. It is okay to show off your class projects

4. You have an easily answer to "What did I miss?"

5. A website can keep you organized and on track

6. A website can be an archive of your class – complete with the exact materials you've used

7. It can be an easy way to meet the needs of students who have IEP and 504 plans

Source: http://www.cleanapple.com/?p=165

Checklist Prior to Starting a Website

- Is there a cost?
- School Policy?
- Connections to other internal school systems
- [Children's Online Privacy Protection Act](#)
- Updating schedules and ability to make quick changes
- Accessibility - (ADA)
- Host: Can you download your file and move it to another site?
- Browser issues?
- Others?

Items to Include in Teacher Websites

1. Contact Information
2. Welcome Message
3. Teacher Bio/Photograph
4. Syllabus/Description/ Objectives
5. Homework Assignments
6. Calendar of Events with Test/Quiz Schedule
7. Learning Resources
8. Classroom Rules and Policies
9. Worksheets & Handouts
10. Resource Lists
11. Parental Resources
12. Class Showcase/Class News
13. Activities to Energize Learning (Extended Activities)
14. Awards & Recognitions
15. Update – Update – Update the site

Source:
https://www.cgesd.k12.or.us/cms/lib/OR01915656/Centricity/Domain/51/Schoolwires_TeacherSiteElements.pdf

Design Elements of Great Teacher Websites

- [Award Winning Teacher Websites](#)

Teacher Website Builders

[Wix](#)

[Yola](#)

[Weebly](#)

[Wix](#) (for teachers)

[Yola](#)

[Weebly](#)

Get Started Now

Already have a Weebly account? Log-in

Username
Password
Email
☐ I accept the

Sign Up

Create a Free Class Website
and let your students build sites too

What can I do with Weebly?

- Easily create a classroom website & blog
- Manage your students' accounts
- Accept homework assignments online
- Keep your parents up to date

TIME

Time says:
50 Best Websites of 2007: Clever WYSIWYG website building tool for non-techies

Featured Site
Memorable Math With Ms. Napolitano

Schools and Districts
Bring Weebly to your school district or University.
Find out how

CTE uses and suggestions:

- Post Student Organization events and accomplishments
- Updating websites is very important
- Make requests for materials and quest speakers
- Honor advisory committee members
- Hall of Fame for Program Graduates and others
- Job Postings for graduates
- Special Projects
- Highlight student of the Week/ Month
- Others?

Best practices

3. Diagramming Processes/ Story Boarding

Storyboarding and diagraming processes can be applied to sequences of images and narrative which demonstrate the relationship between individual events and actions within a system. A typical storyboard can contain a number of images depicting a process or procedure such as preparing an autobody for painting, preparing a syringe, taking blood pressure, and many other standard or non-standard process with any field in CTE.

Diagramming Processes/ Story Boarding Tools:

- Microsoft Word
- Smartdraw

  - Powerpoint
  - Google Docs
  - Google Slides
  - Storyboardthat

Applications

Applications

Mold Remediation – Key Steps
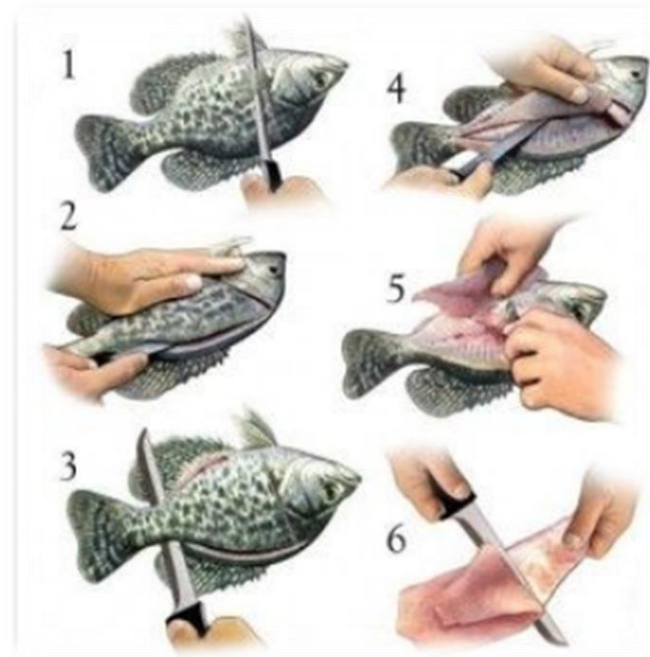
Diagram Categories

Calendar

Cause and Effect

Chart

Decision Tree

Education

Emergency Planning

Engineering

Event Planning

Family Trees and Genograms

Fault Tree

Flowchart

Flyers and Certificates

Form

Healthcare

Infographic

Lean

Legal

Map

Mind Map

Network Design

Organizational Chart

Planogram

Project Management

Project Management

Software Design

Strategic Planning

Timeline

Venn Diagram

Web Design

closes IV clamp

cleanses medication port

inserts needle into medication port

rotating container of solution to distribute medication

adheres label to IV container to show medication.

Cover the person's mouth tightly with your mouth.

Pinch the nose closed.

Keep the chin lifted and head tilted.

Give 2 breaths. Each breath should take about a second and make the chest rise.

MS Word

- Easy Tabs in MS Word:

  - Shapes
  - Icons 3-D Art
  - Smart Art
  - Charts
  - ScreenShot
  - Pictures
  - Online Pictures
  - (Import pictures taken by students)

CTE Assignment Approach

1. Name of Process
2. Pictures to support the major steps in process
3. Narrative to describe process
4. Refine and rework
5. Final

CTE

- Personalize CTE processes
- Study for certification exams
- Portfolio documentation
- Differentiated instruction
- Clarify thought processes
- More effective group work activities
- Encourages critical thinking
- Evidence of work and tasks completed
- Others?

Best practices

4. Instructional Planning

- Chalk – a larger student and school performance system. The suite includes: Planboard, Markboard, Attendance, Resources, and Standards

Chalk - Planboard:

a modified learning management system.

Create subjects and sections
Create schedules
Develop and share lesson plans
Create individual lessons for students based on IEP
Create units
Create and upload standards
Develop an instructional calendar
Make changes within the instructional calendar due to snow days and other unexpected events
Track curricular progress
Add students, monitor their progress and attendance
Connect to Google Drive and external links

Markboard

Real Assessment Made Possible

Markboard brings both summative and formative assessment to your students. Get real-time insights into your students' learning progress to provide the best feedback. Best of all, it's free for individual teachers.

CTE advice and application

Start small and pilot a system

Compare with other programs as the programs evolve
Google Classroom, Edmodo, Schoology. Blackboard, etc.

Make sure the data and resources in one system can be used in another or at least the structure is reproducible.

Check costs$

Data security?

Others?

Best practices

5. Miscellaneous Tools

- [Google Trends](#)
  - 3 billion searches
  - 500,000 hours of Youtube video
  - 1 million news articles
  - Per day

Uses of Google Trends

- Discover what people are searching for. Your school or programs
- Developing Marketing Plans
  - Identify buyer key terms to describe what you have for sale
  - When should you advertise during what time of year
  - What are the demand patterns for a product or service
  - Compare one product to another based on location, time, etc.
  - Discover niche markets
  - Product or concept dispersion
  - Popularity of products, techniques, services, market share,
  - Create predictions and examine relationships between various variables: hot chocolate, blizzards, auto repair, tropical vacations, the need for auto repair

Google Trends

- [Searches:](#)

- Examples and ideas?

Advice Using Instructional Tools

1. Embrace creativity as part of learning
2. Use the most effective strategies
3. Think of creativity as a skill
4. Make emotional connections
5. Give students time to ask questions and develop ideas
6. Creativity builds confidence
7. Use a collaborative creative thinking model to solve classroom problems
8. Design multidisciplinary lessons when possible
9. Understanding that creativity is important to a student's futures in the job market
10. Teach creative skills explicitly
11. Use the search terms: Teachers best use of _____.

Source: E. Paul Torrance, and Classroom-Aids.com

Thank you for attending the session!

Questions?