Common Core State Standards & Career and Technical Education

National Conference on Education

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Achieve, Inc., was created by the nation’s governors and business leaders in 1996 following the first National Education Summit.

Achieve is a bipartisan, non-profit organization that helps states raise academic standards, improve assessments, and strengthen accountability to prepare all young people for postsecondary education, work, and citizenship.

Major initiatives include:

- American Diploma Project Network
- Common Core State Standards
- Partnership for Assessment of Readiness for College and Careers (PARCC) consortium
- Next Generation Science Standards
The Moment is Here and the Opportunity is Clear:

As states are working to align their education systems with the CCSS in support of the goal of graduating all students ready for college, careers and life, academic and CTE leaders at the state and local levels can and should maximize this opportunity to finally:

• Break down the silos between their disciplines, and

• Collectively find ways to ensure that the new standards rigorously engage all students in both academic and CTE courses.

http://www.achieve.org/CCSS-CTE-BridgingtheDivide
1. **Develop a Common Understanding of College and Career Readiness:** Include CTE leaders in efforts to create a broader view of college and career readiness that gives equal weight to college AND career readiness.

2. **Form Cross-Disciplinary Teams for CCSS Planning and Implementation:** Ensure that CTE representatives are part of state and district CCSS planning and implementation teams. If this has not occurred, CTE leaders should take the initiative to get involved.

3. **Ramp up Communications and Information Sharing:** Implement a communications plan that specifically includes CTE educators and uses a wide variety of communication strategies: email and listserves, informational videos, local workshops and presentations, and regional and statewide conferences.

4. **Create or Update Curricular and Instructional Resources:** Engage CTE and academic educators to update CTE standards to reflect the CCSS. Whenever possible, update or create model CCSS-aligned instructional resources for both CTE and core academic teachers.
5. **Enhance Literacy and Math Strategies within CTE Instruction**: Launch new or build upon existing professional development activities to help CTE teachers integrate literacy and math strategies in their CTE classrooms.

6. **Foster CTE and Academic Teacher Collaboration**: Bring CTE and academic teachers together in structured professional development activities to review and reflect on the CCSS, unpack the standards to see how they can apply in the CTE context, and create model instructional resources.

7. **Establish Expectations for and Monitoring CCSS Integration into CTE**: Include references to the CCSS in annual funding applications, continuous improvement planning, CTE teacher qualifications and criteria for local monitoring visits.

8. **Involve Postsecondary CTE in CCSS Implementation**: Ensure that postsecondary CTE is also included in outreach and implementation planning.
Achieve-NASDCTEc
CCSS-CTE Task Pilot
In Summer 2011, Achieve and the National Association of State Directors of Career and Technical Education Consortium (NASDCTEc) entered a partnership to co-host workshops focused on the integration of the Common Core State Standards in Math and CTE expectations.

Engaged a number of states – three were selected: Illinois, Nebraska, and New Jersey based on the commitment of their leadership to the integration of math and CTE.
Common Core State Standards/Career and Technical Education Instructional Tasks Pilot

**The Goals of the Pilot Include:**

- Facilitate cross-disciplinary discussions about the Common Core State Standards and CTE instruction.
- Provide strategies for mathematics educators to integrate real-world examples and exercises into classroom instruction that is aligned to the CCSS.
- Provide strategies for CTE educators to inject rigorous mathematics into their courses.
- Development of instructional tasks well aligned to the CCSS in math and state-selected CTE expectations.
  - All/part of tasks can be used by math OR CTE educators
  - Part of the CCSS “commons”
- Support existing integration/alignment activities already underway in a state
- Develop a protocol any state or district leader could use to ensure the alignment and authenticity of their existing or new instructional tasks.
Other Details about the Workshops:

- States selected their own pathways.
- High school math and CTE educators, postsecondary math and CTE educators, state/district leaders, and subject matter experts participated.
- Whenever possible, recruited educators from same school, district and/or community to foster collaboration post-workshop.
- The process used to review and/or modify the tasks to ensure their alignment was drawn from a protocol Achieve developed for a large urban district (without the CTE component).
Steps for Aligning Mathematics Tasks to the CCSS and Career Clusters Knowledge and Skills Statements

Step 1. Read the task thoroughly.

Step 2. Compare your work with the answer key/rubric and other instructional support materials and/or with the work of colleagues.

Step 3. Identify the content and performances required to complete the task.

Step 4. Compare task performances to the CCSS Standards for Mathematical Practice

Step 5. Compare task content and performances to the grade-level (grades 6-8) and high school CCSS

Step 6. Compare task content and performances to the Knowledge and Skills statements that apply to the relevant Career Cluster/ Pathway.
What Does This Alignment Process Tell Us? What Are the Next Steps?

- Is the task, as written, of high quality and well-aligned with the CCSS Standards for Mathematical Practice, CCSS grade-level/high school standards, and the cluster/pathway Knowledge and Skill statements?
  - **If so, it is “ready to go.”**

- Are there ways that the task can be improved to enhance alignment with the relevant standards and better meet the needs of teachers and the range of students they encounter in their classrooms?
  - **If so, the task “needs improvement.”**

- Is the task so poorly aligned with the CCSS and the cluster/pathway Knowledge and Skill statements that it is not really usable?
  - **If so, discard the task.**
The Experience of the Alignment Process

Participants are collectively:

- Reviewing tasks
- Identifying relevant standards
- Debating (and coming to agreement on) alignment ratings
- Looking for areas of improvement – and making adjustments to the tasks as necessary
- Developing task extensions, either from the existing task or building on that task
- Developing original tasks, drawing on the alignment experience
Disease can spread quickly in enclosed spaces, such as on an airplane. The spread of the flu is modeled by the equation $P(t) = \frac{100}{1 + e^{(3-t)}}$ where $P(t)$ is the total number of passengers infected after $t$ days of a trip on an airplane.

1. Estimate the initial number of people infected with the flu.

2. How fast is the flu spreading after 3 days?

3. When will the flu spread at its maximum rate? What is the maximum rate?

Adapted from [http://yale.edu/ynhti/curriculum/units/2009/5/09.05.08.x.html](http://yale.edu/ynhti/curriculum/units/2009/5/09.05.08.x.html)
Sample Task from New Jersey:
Spread of Disease

- **How can the set up be improved?**
- **What exactly is it asking students to do?**
- **How authentic is it?**

- Not a realistic prompt (who spend 3 days on a plane?)
- Not anchored in solving a problem
- Only hit on two mathematical practices (perseverance/problem solving and mathematical modeling) when opportunity for more application
Final Task: Spread of Disease

Disease can spread quickly without the use of universal precautions. Suppose the spread of a direct contact disease in a stadium is modeled by the exponential equation $P(t) = \frac{10,000}{1 + e^{3-t}}$ where $P(t)$ is the total number of people infected after $t$ hours. (Use the estimate for $e$ (2.718) or the graphing calculator for $e$ in your calculations.)

1. Estimate the initial number of people infected with the disease. Show how you found your answer.

2. Assuming the disease does not present symptoms for 24 hours, how many people will have been infected after 3 hours? Show how you found your answer.

3. What is the maximum number of people who can become infected? (*Note: $e^{(3-t)}$ will approach 0 for very large values of $t$*).

4. Explain why your answer for Question #3 is the maximum.

5. The stadium needs to warn its guests about a rapid disease spread if it affects over 800 people. After how many minutes should the stadium inform its guests of the disease? Show how you found your answer.

6. Create a flyer/poster/pamphlet describing the chain(s) of infection for a typical contact disease, the mode(s) of prevention, and what your school can do to limit the spread of disease/pathogens. Research will be required to verify flyer information and statistics. (Materials could be shared/posted throughout school)
Final Tasks Can be Found at:

www.achieve.org/ccss-cte-classroom-tasks

www.OERCommons.org

(search for “CTE” and pathway area)
Common Core-CTE Task Alignment Workshop Planning Tool

Make tools available for anyone to use, off the shelf

Developed self-guided tool for the planning and execution of Common Core-CTE Task Alignment Workshop

Three major components:

- Video for potential organizers/facilitators of workshop
- Video for potential participants of workshop
- Self-guided planning module for workshop organizers/facilitators, with resources embedded
If you are considering offering a Common Core-CTE Task Alignment Workshop for your teachers, we invite you to explore this brief video. The purpose of this video is to clarify the experience, value, requirements and tools that will help you discover how Task Alignment can support your efforts. Welcome!
You have been selected to participate in a Common Core-CTE Task Alignment Workshop. The purpose of this video is to clarify the goals of the workshop. Learn how to better connect CTE and math, as we review valuable information that will help you gain from your experience on the team. Welcome!
Welcome to the Planning Module for Lead Facilitators of Task Alignment Workshops
Creating Classroom Tasks that Align Common Core State Standards (CCSS) for Mathematics and CTE Standards

A few notes before you begin:

- This module is intended for persons taking on the role of organizing and leading a task alignment workshop at the state, district or school level. It is intended to give you the background and tools you need to plan and deliver your own event. Others helping with the workshop may find some sections helpful. Use the course as you see best.
- This module will take approximately 45 minutes to complete. It is divided into five main components, each with subsections. You can choose to complete the course at your own pace. It is advised that the entire module be taken within the span of one week. NOTE: the module will only track what you have completed within each session.
- The menu is at the side of the player. You can go to any section or slide in the module that you wish. You are not required to take the module in sequence, but we do recommend that the first time through, you start at the beginning and go through the module in order.
- As you complete the module, you will notice that there are several resources you can save and/or print for future use. Plan where on your computer to save these resources.
- This course does not contain audio.
- Turn off pop-up blocker. Some of the course resources will launch in a new window.

Begin Course!
Facilitator Training Module

Section 1 - Designing the Right Workshop for Your Needs

Section 2 - Understanding the Task Alignment Protocol

Section 3 - Planning Logistics of the Workshop

Section 4 - Delivering a Successful Workshop

Section 5 - Creating Your Action Plan
Facilitator Training Module

Section 1 - Designing the Right Workshop for Your Needs

Section 2 - Understanding the Task Alignment Protocol

Section 3 - Planning Logistics of the Workshop

Section 4 - Delivering a Successful Workshop

Section 5 - Creating Your Action Plan

This module provides an outline of the facilitator training, including sections on designing the right workshop, understanding the task alignment protocol, planning logistics, delivering a successful workshop, and creating an action plan. The module also includes resources and links identified in this module.
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• Common Core State Standards & Career and Technical Education: Bridging the Divide Between College and Career Readiness: www.achieve.org/CCSS-CTE-BridgingtheDivide

• CCSS-CTE Tasks: www.achieve.org/ccss-cte-classroom-tasks

• CCSS-CTE Task Planning Tools: www.achieve.org/ccss-cte-workshop-planning-tools