

This document crosswalks the definition of global competence, as defined by the Asia Society (<http://asiasociety.org/files/book-globalcompetence.pdf>) to the Common Career Technical Core (CCTC), a state-led initiative to establish a set of rigorous, high-quality standards for Career Technical Education, managed by Advance CTE (<https://www.careertech.org/cctc>). The definition of global competence and the CCTC were developed separately by state education leaders as well as diverse groups of teachers, business and industry experts, administrators, and researchers.

* Please note, if the URL links do not work, copy and paste them into your browser.

Manufacturing Career Cluster© (MN)							
Cluster Element		Investigate the World	Recognize Perspectives	Communicate Ideas	Take Action	International Application	Resources
1	Evaluate the nature and scope of the Manufacturing Career Cluster and the role of manufacturing in society and in the economy.	X	X	X		Watch the video on the future of global manufacturing and discuss the role of manufacturing in the global economy.	https://www.weforum.org/communities/global-agenda-council-on-the-future-of-manufacturing/
2	Analyze and summarize how manufacturing businesses improve performance.						
3	Comply with federal, state, and local regulations to ensure worker safety and health and environmental work practices.	X	X	X		Use the PBS lesson plan on Ethics of Outsourcing, which includes a video from PBS titled "Last Train Home." Discuss if manufacturing companies have a responsibility to use factories with safe and fair working conditions and how laws in the United States differ from those in China.	http://www.pbs.org/pov/lasttrainhome/lesson-plan-1/
4	Describe career opportunities and means to achieve those opportunities in each of the Manufacturing Career Pathways.	X		X	X	Find a job description for an international manufacturing company. Describe to classmates the jobs and the skills needed for the job.	
5	Describe government policies and industry standards that apply to manufacturing.	X	X	X		Use the PBS lesson plan on Ethics of Outsourcing, which includes a video from PBS titled "Last Train Home." Discuss if manufacturing companies have a responsibility to use factories with safe and fair working conditions and how laws in the United States differ from those in China. Same as MN 3.	http://www.pbs.org/pov/lasttrainhome/lesson-plan-1/
6	Demonstrate workplace knowledge and skills common to manufacturing.		X	X		Read the article on manufacturing skills and discuss how manufacturing careers are changing and how companies are capitalizing on the skills gap.	http://blog.softwareadvice.com/articles/manufacturing/manufacturers-skills-in-demand-1042911/

Health, Safety, & Environmental Assurance Career Pathway (MN-HSE)							
Cluster Element		Investigate the World	Recognize Perspectives	Communicate Ideas	Take Action	International Application	Resources
1	Demonstrate the safe use of manufacturing equipment.						
2	Develop safety plans for production processes that meet health, safety, and environmental standards.	X	X	X		In teams, allow students to research a country of choice on the International Labour Organization's website under "Country Profiles." Have each team prepare a brief report for the class on that country's policies and standards adopted. Allow students to discuss the similarities and differences they notice between the countries.	http://www.ilo.org/dyn/normlex/en/f?p=1000:11003:0::NO::
3	Demonstrate a safety inspection process to assure a healthy and safe manufacturing environment.	X	X	X			
4	Evaluate a system of health, safety, and/or environmental programs, projects, policies, or procedures to determine compliance.	X	X	X			
5	Evaluate continuous improvement protocols and techniques in health, safety, and/or environmental practices.	X	X	X			
6	Conduct job safety and health analysis for manufacturing jobs, equipment, and processes.						
7	Develop the components of a training program based on environmental health and safety regulations.		X	X		Review the OSHA International website to review the updates to OSHA concerns internationally. As a class, discuss some of the current news.	https://www.osha.gov/international/
Logistics & Inventory Control Career Pathway (MN-LOG)							
Cluster Element		Investigate the World	Recognize Perspectives	Communicate Ideas	Take Action	International Application	Resources
1	Demonstrate positive customer service skills in regard to logistics and inventory control issues.			X		Review the information on the website and watch the video. Discuss how customer service and language skills can impact international supply chain issues.	https://www.groovehq.com/support/how-to-deliver-international-customer-service
2	Demonstrate proper handling of products and materials in a manufacturing facility.						
3	Develop a safety inspection process to assure a healthy and safe manufacturing facility.		X	X		After discussing the safety inspection process, read the <i>NY Times</i> article and discuss how to ensure healthy and safe manufacturing facilities abroad.	http://www.nytimes.com/2013/09/02/business/global/superficial-visits-and-trickery-undermine-foreign-factory-inspections.html?_r=0
4	Manage inventory using logistics and control processes and procedures.		X	X		Have students read the article and discuss how managing inventory and logistics internationally can impact business operations.	http://www.inboundlogistics.com/cms/article/from-the-outside-in-supply-chain-as-strategic-advantage/

Maintenance, Installation, & Repair Career Pathway (MN-MIR)							
Cluster Element		Investigate the World	Recognize Perspectives	Communicate Ideas	Take Action	International Application	Resources
1	Demonstrate maintenance skills and proficient operation of equipment to maximize manufacturing performance.						
2	Demonstrate the safe use of manufacturing equipment to ensure a safe and healthy environment.						
3	Diagnose equipment problems and effectively repair manufacturing equipment.						
4	Investigate and employ techniques to maximize manufacturing equipment performance.	X				Watch Daimler career video in the Global Competence through CTE toolkit. How do they learn from factories in other countries and leverage that for their factories around the world?	http://asiasociety.org/education/ctetoolkit
5	Implement a preventative maintenance schedule to maintain manufacturing equipment, tools, and workstations.						
6	Implement an effective, predictive, and preventive manufacturing equipment maintenance program.						
Manufacturing Production Process Development Career Pathway (MN-PPD)							
Cluster Element		Investigate the World	Recognize Perspectives	Communicate Ideas	Take Action	International Application	Resources
1	Produce quality products that meet manufacturing standards and exceed customer satisfaction.						
2	Research, design and implement alternative manufacturing processes to manage production of new and/or improved products.		X	X		Jigsaw the PDF report by GE, <i>The Workforce of the Future</i> , into eight groups in class, each taking one of the eight sections. Have groups share the information they read in the order presented in the report. Discuss the impact of globalization on advanced manufacturing of the future.	http://dsg.files.app.content.prod.s3.amazonaws.com/gereports/wp-content/uploads/2016/04/04184419/AM_FIN_AL.pdf
3	Monitor, promote, and maintain a safe and productive workplace using techniques and solutions that ensure safe production of products.						



4	Implement continuous improvement processes in order to maintain quality within manufacturing production.						
5	Develop procedures to create products that meet customer needs.	X	X	X		In teams, have students read the MasterCard Biz article "Going Global: Adapting Your Products to Meet the Needs of the Marketplace." Have students then select a local product and a country to expand to. Using the tips in the article, students write a list of considerations for expanding that product into the country of choice.	http://www.mastercardbiz.com/blog/2013/05/24/going-global-adapting-your-products-to-meet-the-needs-of-the-marketplace/
Production Career Pathway (MN-PRO)							
Cluster Element		Investigate the World	Recognize Perspectives	Communicate Ideas	Take Action	International Application	Resources
1	Diagnose production process problems and take corrective action to meet production quality standards.						
2	Manage safe and healthy production working conditions and environmental risks.		X	X		Use the "Standing Up for Sweatshops" activity on the Foundation for Teaching Economics website. For the Production Career Pathway, extend the discussion questions to include managing safe and healthy production working conditions and improving conditions in other countries. This activity could be done with a business class to have a cross discussion on the economic impact of production choices.	http://www.fte.org/teacher-resources/lesson-plans/tradelessons/standing-up-for-sweatshops/
3	Make continuous improvement recommendations based on results of production process audits and inspections.		X	X			
4	Coordinate work teams when producing products to enhance production process and performance.		X	X		Use the lesson plan from the World Affairs Council, Washington, DC, on "Culture and Communication." Discuss how this could be specific to coordinating international production work teams.	https://www.worldaffairscouncil.org/Attachments/CultureandCommunicationsLessonPlan.pdf
5	Demonstrate the safe use of manufacturing equipment.						

Quality Assurance Career Pathway (MN-QA)							
Cluster Element		Investigate the World	Recognize Perspectives	Communicate Ideas	Take Action	International Application	Resources
1	Evaluate production operations for product and process quality.		X	X		After discussing how to evaluate production operations and how to make improvements, read the article "Five Ways to Ensure Quality Manufacturing – Sourcing Success" from PROQC International. Discuss the article and how this process or improvement recommendations may or may not change based on sourcing abroad.	http://blog.proqc.com/five-ways-to-ensure-quality-manufacturers-sourcing-success/
2	Recommend and implement continuous improvement in manufacturing processes.		X	X			
3	Coordinate work teams to create a product that meets quality assurance standards.		X	X		Use the lesson plan from the World Affairs Council, Washington, DC, on "Culture and Communication." Discuss how this could be specific to coordinating international production work teams.	https://www.worldaffairscouncil.org/Attachments/CultureandCommunicationsLessonPlan.pdf
4	Employ project management processes using data and tools to deliver quality, value-added products.						
5	Perform safety inspections and training to ensure a safe and healthy workplace.						
6	Implement continuous improvement processes to maintain quality products.						
7	Identify inspection processes that ensure products meet quality specifications.						