Contextualized Curriculum

for Adult Learners in Math and Literacy

Communicating to Increase Safety

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How Kaizen Teams use oral communication to address safety issues in manufacturing.

Industry Sector: Advanced Manufacturing
Content Area: Literacy
Core Topic: Oral communication

Expand All | Collapse All

Common Core State Standards

SL.6.4. Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.

SL.11-12.1.c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.

SL.11-12.3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used.

Adult Basic Education Standards

Adult Basic Education Standards:
Oral Communication Standard 1: Learners will speak with ease and confidence for a variety of purposes.

- **OC1.3b** Express themselves in problematic situations (e.g. advocate for special services for child or self, address supervisor about difficult situation at work).
- **OC1.3c** Deliver a well-organized oral presentation with consideration of audience, purpose, and the nature of the selected information.

Oral Communication Standard 2: Learners will listen actively in order to learn and communicate effectively in a variety of situations.

- **OC2.3c** Facilitate a discussion amongst others as they attempt to solve a problem or debate an issue.

Critical Thinking Standard 1: Learners will solve problems by comprehending, comparing, applying, analyzing, evaluating, and synthesizing information.

Industry Overview

Today's Manufacturing Workplace

A manufacturing renaissance is occurring in the United States. The United States is the largest manufacturing economy in the world, producing 21 percent of the goods manufactured across the globe. In addition to the 12 million Americans working directly in the manufacturing industry, manufacturing supports more than 6.5 million other jobs, thus accounting for nearly 17 percent of all private sector jobs in the United States. In 2010, the average U.S. manufacturing worker earned $77,186, including pay and benefits (the average in all industries was $56,436).[1]

While manufacturing jobs in Massachusetts have declined, as they have nationally, manufacturing is still a critical industry in this state and provides opportunities for good, high-paying jobs. In the Greater Boston area, most of the manufacturing jobs are in computer and electronics companies, and much of the state relies on manufacturing positions in these and other very high-tech areas, such as aerospace and biotechnology.[2]

Advanced manufacturing involves the use of computers and technology in the manufacture of products. While not all manufacturing companies use technological innovations in developing their products or processes, the competitive advantage of the United States in the manufacture of goods relies on technological innovations. This means that today's manufacturing workplace is usually highly technical, which accounts for the high-paying positions many workers in this field receive in compensation for their work. It also means that today's advanced manufacturing workplace is very different from many people's conceptions of factories and mills as dark, dirty, and unsafe. Today's advanced manufacturing facilities are usually bright, clean, and very safe, and the emphasis is on working efficiently—with as little waste as possible.

In the advanced manufacturing industry, there has been a marked shift from the traditional role of line workers to workers who demonstrate creativity and innovation. Innovation is a hallmark of the U.S. manufacturing industry, and key to maintaining its position in the global market since products can often be produced at a lower cost in developing countries. Critical-thinking, problem solving and reasoning are important components of the innovation process. Today's manufacturing workers are expected to formulate solutions to problems using critical thinking and reasoning skills while working independently and/or in teams.

1. http://www.nam.org/~/media/AF4039988F9241C09218152A709CD06D.ashx
2. http://www.bostonglobe.com/business/2012/05/08/high-end-factory-jobs-boston-paying-high-wages/3gZuNc6GywDGKoYNP2hnaO/story.html?camp=pm

Careers in Advanced Manufacturing

The manufacturing sector includes jobs related to planning, managing, and performing the processing of materials into intermediate or final products and related activities such as production planning and control, maintenance, and engineering. Thus, this industry includes not only those people who actually produce the manufactured goods, but also managers, maintenance staff, scientists and researchers, analysts, administrative personnel, and IT personnel.

Career Pathways

The manufacturing industry includes six career pathways:

- Production is the construction and assembly of parts and final products. People in these positions work in factories and mills, with machines, to make or assemble parts, construct components of parts (such as plastics), and print materials. Occupations in this pathway range from production helpers who move parts and materials around the factory, to numerical control machine operators

who run the computer-controlled machines that modify metal and plastic to create products, to manufacturing production technicians who oversee production.

- Manufacturing production process development occupations are involved in designing products and manufacturing processes. People in these occupations work with production workers to set up the machines and processes to develop new products. These occupations include engineers and production managers.

- Maintenance, installation and repair workers take care of products after they've been sold and delivered to customers—they install the products, perform maintenance on machines, tools, and equipment so that they work properly, and repair systems that are not performing adequately. Workers in this pathway include automotive technicians, automotive electronics installers, building maintenance workers, industrial electronics repairers, industrial machinery mechanics, millwrights, and small engine mechanics.

- Quality assurance is provided by quality control inspectors and technicians, who ensure that products both meet design standards and are of high quality.

- Logistics and inventory control workers ensure that those working in Production have the materials they need to complete their work. Workers in these occupations inventory materials and products, move materials to the line, and pack and ship finished products. Thus, they include production and planning clerks, and operators of moving machinery such as cranes and forklifts, and packers.

- Health, safety and environmental assurance occupations are focused on keeping the workplace safe by ensuring that workers are using equipment safely and that manufacturing processes are as safe as they can be. The also conduct investigations and conduct inspections.

Mathematics and Communication Skills Needed in Advanced Manufacturing

Mathematics and communication are key skills needed for success in today's high-performance advanced manufacturing workplaces. Mathematics is used in the advanced manufacturing industry to measure the amounts and sizes of materials and parts, create "recipes" used to manufacture man-made materials, and analyze data. Data analysis is critical at many levels of a manufacturing organization in order to ensure quality and to continuously improve both quality and processes. Today's manufacturing industry must operate extremely efficiently and produce very high-quality products in order to maintain competitiveness. Many front-line workers are involved in collecting data and working to improve quality and efficiency. Thus, in addition to basic mathematical calculations (which rarely involve simple whole numbers), workers are engaged in mathematical reasoning and solving problems using a variety of mathematical tools.

To succeed and move up the ladder in today's advanced manufacturing workplace, workers need reading skills to understand technical concepts, vocabulary, and to bring together information needed for a particular situation; to locate, organize, and document written information from various sources needed by co-workers and customers; and to locate written information needed by co-workers and customers. They need to use correct grammar, punctuation and terminology to write and edit documents and to develop and deliver formal and informal presentations using appropriate media to engage and inform audiences. In addition, they need to interpret verbal and nonverbal behaviors to enhance communication with co-workers and clients/participants; apply active listening skills to obtain and clarify information; and interpret and use information in tables, charts, and figures to support written and oral communications. They also must communicate with co-workers and customers using technology tools. As they move up the corporate ladder they will need to explain written organizational policies, rules and procedures to help employees perform their jobs.

Career Opportunities in Advanced Manufacturing with Education from Community Colleges

Massachusetts Community Colleges play an important role in preparing the state's citizens to take advantage of the career opportunities available in advanced manufacturing. Degree and certificate programs prepare students to enter advanced manufacturing occupations, including:

- production occupations, including people who work as assemblers (such as airplane assemblers), machine operators, machinists, systems operators, CNC machine tool operators, machine setters,

laminators/fabricators, metal and plastic workers, packers, molders, semiconductor processing operators, welders and solderers, tool and die makers, and other production workers;

- manufacturing production process development occupations, including numerical control tool programmers who write the programs that control machine tools and industrial production managers who plan and oversee production;

- maintenance, installation and repair occupations include automotive, electronics, and biotechnology technicians, industrial machinery mechanics, and millwrights (who install and maintain heavy equipment);

- quality assurance occupations including quality control technicians and inspectors.

Recent Career Opportunities in Massachusetts

The following is a sample of advanced manufacturing job listings in Massachusetts that require associate's degree or certificate:

- Manufacturing Engineering Technician, Randstad Corporation, Framingham, MA, [show]
- Quality Control Technician, QD Vision, Lexington, MA [show]
- Manufacturing Technican, Hologic, Marlborough, MA [show]

Employment Outlook for Advanced Manufacturing

Advanced manufacturing continues to be a high-growth industry, given the knowledge capital in the United States. However, the work in this industry is increasingly technical and requires far fewer workers as more tasks are automated. Entry-level positions in this industry require the same skills that only a select group of highly-experienced and well-paid workers once had. Unfortunately manufacturers find it difficult to fill these high-skill positions. A 2011 survey found that there is a persistent skills gap between the skills that are needed in the today's manufacturing workplace and the skills that candidates bring to the workforce.

Most of the advanced manufacturing companies in Massachusetts are small to mid-sized operations that employ smaller numbers of workers and rely on computer-operated machinery for production. While the numbers of workers are smaller than in the past, the more highly-skilled nature of the work means that these are high-paying jobs and provide workers with opportunities to grow through training and education and to be part of the effort to innovate.

Resources:

Advanced Manufacturing Industry

- National Council for Advanced Manufacturing
- Advanced Manufacturing
- Brookings: "Why Does Manufacturing Matter? Which Manufacturing Matters?" (2012)
- National Association of Manufacturers: "A Manufacturing Renaissance: Four Goals for Economic Growth" (2012)

Advanced Manufacturing Industry Outlook Information

- Bureau of Labor Statistics: Manufacturing Industry at a Glance
- Massachusetts Labor Market Data
- Massachusetts Career Information System

Careers in Advanced Manufacturing

- Massachusetts Career Information System
- Manufacturing Career Opportunities
- Manufacturing Career Pathways
- Industry Competency Model for Advanced Manufacturing shows the skills and knowledge needed to work in this industry

- National Association of State Directors of Career Technical Education Consortium's Common Career Technical Core
- National Association of State Directors of Career Technical Education Consortium's Knowledge and Skills: Manufacturing
- O*NET
- WorkKeys Occupational Profiles
- Manufacturing's Missing Generation
- A Career in Toolmaking or Machining Technologies: The Right Choice for Students, Community, & Country

Workplace Scenario (8th Grade Level)

This scenario is based on the work of a Kaizen Team member. For more information, view this video.

The Mills in Lawrence, Massachusetts manufactures Polartec a material used for winter clothing and blankets. The Mills uses a special manufacturing method to make these products. The method they use makes sure the products made are a good quality. They also work to make the product in as few steps as possible. By doing this, it helps cut down on the time needed to make the product and sometimes the materials used to make the product. This manufacturing method, or process, is called lean manufacturing. For The Mills, this means the company makes products 24 hours a day during all three work periods. These work periods are called shifts. The company believes that each employee will work hard to his/her job well. All workers are encouraged to find ways to do their jobs better. To help workers do this, the company forms teams of workers to identify and solve problems. These are called Kaizen Teams.

The company wants to keep workers safe. They do not want accidents to happen at work. When an accident does happen it is listed on a chart. The charts are hung in each department of the company. Workers have seen an increase in the number of accidents in two departments. The two departments with more accidents are the production department and the shipping department. The increase in accidents was discussed at a team meeting. Both workers and supervisors attend team meetings. The supervisors decided it would be a good idea to figure out how to reduce the number of accidents. They formed a Kaizen Team. The Kaizen Team is to look at why the accidents are happening and how to reduce the number of accidents. The Kaizen Team has both workers and supervisors from both departments on it.

You will be part of the Kaizen Team. As a member of the team, you will not have to do your regular work for the next three to five days. During this time, you will learn about the Kaizen method for solving problems. This will include learning how to define the problem, write down what you observe, and how to come up with a solution with other members of your Kaizen Team. At the end of the three to five days on the Kaizen Team, your team will present what you found to the rest of the workers in the company. The team will identify the problem and possible solutions. You will participate in this presentation. You know that other employees may be concerned about being blamed for the accidents. You know they will have ideas about what was the cause of the accidents. You want to make sure you can talk to them politely and speak clearly.

Workplace Scenario (High School Level)

This scenario is based on the work of a Kaizen Team member. For more information, view this video.

The Mills in Lawrence, Massachusetts manufactures Polartec a fabric used for winter clothing and blankets. The Mills uses a lean manufacturing process to ensure that they are delivering quality products efficiently. For The Mills, this means running the production process all three shifts, 24 hours each day. The company's culture fosters trust and respect that each worker will do his/her job so that they are successful as a company. Workers in every position are challenged to do better. A key part of their participatory quality control process is the use of Kaizen Teams. These teams are formed to identify and solve problems.

Worker safety is a primary goal of The Mills. Worker accidents are tracked publicly on large wall charts hung in each department. Workers have noticed that in the last several weeks there has been an increase in the number of accidents reported on the third shift on the production floor and the first shift in shipping during the quarter just completed. The problem has been brought to the attention of managers at the last production team meeting. A Kaizen Team was formed and is comprised of workers and supervisors from all three shifts in production and the first and second shifts in shipping. You have been invited to represent your shift/department on the Kaizen Team. The Kaizen Team's goal is to define the problem, identify its root cause, and develop a solution or a set of recommendations for reducing the number of accidents.

For the next three to five days, you are released from your normal work activities to take part in a Kaizen Team that includes: training in the Kaizen method of problem solving, defining the problem/goals, documenting the current state of the manufacturing process, brainstorming and developing a solution, implementing the solution, and developing a follow-up plan. The culmination of the Kaizen event is to present your results to the entire workforce at the manufacturing company. As a Kaizen Team member you will lead or participate in the presentation of your team's work to your co-workers at The Mills. You need to be prepared to clearly present what you did to identify the problem and the proposed solution. You realize that the cause of the problem may not be what many workers initially thought and you will need to respond to questions during the meeting from both managers and line workers. In addition, you will need to be careful that workers do not feel blamed for the problem or penalized by the solution. The tone and wording of your presentation will be key to how well it is received.

Core instructional context

Brainstorm with students why they think communication skills are important in the workplace. Capture these ideas by creating a graphic organizer such as a semantic map. Show the video "Oral Communication" by Jeff Kavanaugh, Consulting Managing Partner for Manufacturing and High-Tech at Infosys. Ask students to take notes during the video and to compare and contrast the ideas mentioned in the video with those listed on the semantic map.

Point out that speaking and listening are at the heart of much human interaction and good communication skills are an important aspect of employability in most professions. A person working with clients must listen carefully to identify the clients' wishes and needs, and they must also be able to translate that information to their colleagues and staff. Poor listening skills may lead to missing key pieces of information, and poor speaking skills will lead to others not fully understanding their tasks. Good listening and speaking skills are particularly important in a kaizen team as described in the scenario if the person is to fulfill his or her role as an contributing member of the team.

Adults typically view speaking and listening as areas of strength because of the level of experience they bring to these activities. They may be used to speaking with ease and confidence and reporting information in a logical sequence. The more challenging aspects of speaking and listening are related to their previous experiences since many adults must unlearn poor habits in both areas. Speaking and listening are skills we learn in the first year of life, which means that each individual may have spent a lifetime learning poor habits that must be unlearned. For example, few adults listen attentively enough to be able to fully comprehend, analyze and synthesize what they have heard and to recall and apply it later in critical situations. In addition, most adults have learned poor speaking habits that need to be replaced with good ones, including the use of filler words or phrases or using nonstandard language in formal situations such as working with clients, colleagues or staff. Since speaking and listening skills are so important in information technology, IT staff must develop these skills to do their jobs effectively. Fortunately, these are skills that can be improved with practice.

Poor listening skills contribute to poor comprehension and the ability to apply knowledge. In order to comprehend, analyze, and synthesize information, students must listen effectively.

A good listener uses the following techniques:

- maintains eye contact with the speaker;
- avoids distractions in the surroundings;
- avoids interrupting;
- sits or stands still;

- nods his or her head or uses other nonverbal cues to show understanding;
- maintains focus by avoiding internal distractions or thoughts;
- takes brief notes;
- listens for subtext but tests assumptions;
- tests his or her understanding by repeating instructions or key details; and
- asks clarifying or other appropriate questions when the speaker has finished.

Good speaking skills are critical to good communication and require the speaker to organize his or her thoughts before speaking. Good speakers ask themselves: Who is the audience? What vocabulary is appropriate for the audience? What is my goal? What are the important details that I need to share? What is the most logical sequence?

A good speaker

- organizes his or her thoughts before speaking;
- is clear and concise without including extraneous information;
- delivers main ideas and supporting details in a logical sequence;
- speaks clearly and practices good enunciation;
- uses correct pronunciation;
- uses correct standard English;
- uses appropriate volume – speaks neither too loudly nor too softly for the environment;
- speaks confidently and avoids filler sounds, words or phrases; and
- maintains appropriate level of eye contact with the listener.

Example Activity

As an introductory activity, organize students into groups of three or four, where one student is give a blank piece of paper and is designated as the artist who will create a paper airplane based on verbal instructions from the rest of the group who are viewing a picture of the image. The goal of this activity is for students to understand the importance of listening carefully, asking thoughtful questions, and delivering useful information orally. Use the images and instructions on site the Amazing Paper Airplanes or Paper Airplanes HQ.

The important element is that directions are provided verbally and the person creating the airplane does not see the image of the finished product. However, the person listening and folding the airplane can ask questions. Group members can take turns folding the paper airplane using different images for each turn. Alternately, the instructor can give the directions to the whole class as students fold paper airplanes at their seats. At the end of the activity, the instructor leads a class discussion to debrief why groups were or were not successful in replicating the paper airplanes. Help students identify how listening and speaking skills helped them in the process of replicating the image.

The previous activity can lead into one based more closely on the scenario in this module. Show the video, "Business Process Kaizen Team in Action." This video is about a kaizen team in operation at an actual business process kaizen event that took place at ASSA ABLOY, a global manufacturer of door opening solutions. The team is attempting to streamline the company's cumbersome ordering process. Ask students to identify the speaking and listening skills demonstrated in the video.

If students need more information about working on a team, show this short video on "Interpersonal Skills." For information on cooperative learning teams, review Dr. Larry Estrada's explanation of how he uses "Cooperative Learning" in his college classes.

Tell students that they will work in teams to solve a problem while practicing their listening, speaking and critical thinking skills. Assign a small group task to find a solution to a problem on campus and/or in other problems that may come up in students' daily lives, such as campus parking or bullying on social media that has affected them, their friends or siblings. After students have met together to define the problem, they will measure it, analyze it and try to identify solutions and then implement solutions. Work with students to build or adapt a rubric to be used to peer assess or self-assess their performances within the group. Students might complete the activity by presenting an oral report of their conclusions.

If teams have problems working together, you might have them review the video: "How to Manage Conflicts in the Workplace."

Assessment

A rubric is a good assessment strategy to provide feedback for performance-based activities. The rubric can be used to assign a grade, for self-assessment or for peer assessment. For assessment, use a rubric developed through discussion during class to assess their interpersonal communication skills within their groups, or apply one normally used in the course or department. Alternately, consider adapting one from the Internet such as one of these below:

- Informal Speaking and Listening Rubric, Nelson Education Ltd.
- Interpersonal Communication Rubric, Weber State University
- Interpersonal Communication Rubric, RCampus
- Student Learning Outcomes in Effective Oral Communication, Northwest Regional Education Lab

Contextualized learning activities

1. Scaffolding the reading

If planning to use the contextual reading about the kaizen team with students, be sure that students understand the purpose of a kaizen team. The goal of a kaizen team is to identify a problem, measure it, analyze and try to identify solutions and then implement solutions. Use strategies to scaffold the reading (if students need this type of reading assistance) and guide students to discuss the importance of communication skills for a person playing a role in a kaizen team.

Strategies for scaffolding the reading include:

- motivating students by activating prior knowledge using a KWL chart (Know, Want to know, Learned);
- identifying and teaching key vocabulary prior to reading or during reading;
- reading the scenario aloud to students;
- after reading, using graphic organizers to outline text and to illustrate principles within a text, such as a storyboard, story map, character web, time lines, Venn diagram, ranking ladder Holt Interactive Graphic Organizers;
- partner read-alouds;
- using thinking notes while reading.

2. Solving common campus problems

Tell students that they will practice working in teams to solve a problem just as a kaizen team might work in industry. Divide the class in groups of three to five students. Assign each group the same problem such as one of these or another that fits the campus situation.

- Lack of sufficient parking spaces
- Traffic jams on campus
- Intersections that are dangerous for students to walk across
- Distance between certain campus buildings
- Lack of sufficient walkways on campus
- Lines too long in the cafeteria

Each group will discuss the problem identifying the root cause of the problem and brainstorm solutions. The group will choose the best solution and prepare a PowerPoint presentation to demonstrate their solution to the problem and the class can determine which group has identified the best solution. Each member of a team will self-assess his or her speaking and listening skills during the group session and peer assess their teammates. The instructor can also conduct a walk-about assessment of the groups, listening in for a few minutes to each discussion. Assess students on a continuum from too overbearing and insisting on a particular solution to a lack of active participation. Students who fall on the far ends of the spectrum need to be aware so that they can improve their performance in the groups. A class- or teacher-developed rubric can be used for assessment or refer to one of the rubrics in the Assessment section of Section 4.

3. Interviewing an advanced manufacturing representative

Invite a representative from a local manufacturing company to visit the classroom. Prior to the visit, announce to students that that the representative will visit the class to share how workers use communication in the workplace and how the company addresses problems or issues either through a kaizen team process or other group process. Tell students to prepare four or five questions for the representative as if they are preparing for an interview. After the representative shares introductory remarks about how communication is used in the industry, students will ask their questions (trying not to repeat any questions) and take notes on the responses. Small groups of students will share their notes and discuss the key takeaways from the visit. After the small group meeting students will write a summary of what they learned about communication skills on an industry job.

4. Gathering informationn

Assign the reading "Communication on the Job for Employees". Direct students to use "thinking notes" as they read. For more information on using thinking notes, view the video, "Thinking Notes: A Strategy to Encourage Close Reading;" or see "Annotating While Reading." After reading, students should work in small groups or pairs to identify the criteria for listening and speaking skills needed in the workplace. Ask students to privately self-assess their current levels of skill on each of the criteria they identify.

5. Presentation from a reading

Assign the reading "Effective Communication in the Workplace." Direct students to use "thinking notes" or another strategy to annotate the reading. Students will then prepare a four-slide PowerPoint presentation with narration of what they've learned from the reading. For information on adding narration to a PowerPoint presentation, see "About Recording a Voice Narration for a Presentation." Remind students to use good presentation skills by reviewing the assessment rubric.

Practice listening or speaking skills

Students listen to an instructor-prepared podcast of a report of a worker who has had an accident on the job. Students will listen and write a summary report of the accident for the supervisor. Alternately, the student prepares a podcast describing an accident that he or she witnessed or has seen on television. For other ideas, students can view the video "Funny Video of Workplace Accidents PSA". Students will choose one of the accidents to describe. Remind students to use good presentation skills by reviewing the assessment rubric.

By creating a free Basic membership at Podomatic, students can create or upload audio files they record on their smartphones or on their laptops. After they create their membership, they will be provided an individual homepage where they can click the "New Episode" button to begin creating a new podcast.

Contextualized test items

1. *Listening skills*
   Play the video Bad to Good Communications from the beginning to the 2.25 minute mark. Ask students to identify the errors in communication demonstrated by Stephen in the video. Use this checklist to identify the following errors:

   - not maintaining eye contact with the speaker;
   - appears to be distracted by the surroundings;
   - interrupts or allows interruptions;
   - does not sit or stand still;
   - fails to use nonverbal cues to show understanding;
   - appears to allow internal distractions or thoughts;
   - takes no notes;
   - does not test his or her understanding by repeating instructions or key details; and
   - does not ask clarifying or other appropriate questions.

2. *Listening skills*
   Students will listen to podcasts of good and bad communication and identify the one with errors.

3. *Speaking skills*
   Students record podcasts of directions for a simple process or game such as how to play checkers, how to score in football or how to figure a batting average.

4. *Listening skills*
   Record a description of an image. The student will choose the correct image from a group, for example Farm Machinery Companies, Fred Hultstrand History in Pictures Collection, NDIRS-NDSU, Fargo; and F.A. Pazandak Photograph Collection, NDIRS-NDSU, Fargo. Found at Library of Congress American Memory Collection:

   a.

   b.

   c.

   d.

Contextualized project

1. Presenting conclusions

After participating in group work similar to a Kaizen team to find a solution to a problem on campus and/or in other problems that may come up in students' daily lives, each group may prepare a presentation to present their conclusions and solutions. The group will use reading and writing skills to prepare the presentation while several students present different aspects of the conclusions or one student takes on the role of presenter. Record the presentation to share on the class website. Students can also use the recording to self- or peer-assess the presentation. A presentation rubric is an effective way to assess student presentations. Some samples to use or adapt are:

- Oral Presentation Rubric, ReadWriteThink
- Oral Presentation Rubric, Folklife in Louisiana
- Oral Presentation Rubric, Great Bay Community College
- Scoring Rubric for Presentations, Making Learning Real

Additional or extension activities, multimedia, readings and/or resources

How It's Made: Polartec: View this video for more information on the making of Polartec fabric.

[Putnam Machine Technology](): This video describes the work of precision manufacturing at Putnam Machine Technology

[The Economic Development Council of Western Massachusetts]()

[Career Videos for Manufacturing](): View this site for more information about careers in manufacturing.

[Conflict Resolution: Resolving Conflict Rationally and Effectively, Mind Tools]()

[Report on an Analysis of Correspondences between the Equipped for the Future (EFF) Curriculum Frameworks and the Common Core State Standards]()

Instructor Adapted Classroom Materials

[Communication to Increase Safety ESL Lesson Plan,]() Holyoke Community College, ESL

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