

Contextualized Curriculum

for Adult Learners in Math and Literacy

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Getting to Good

Print:   

Using [Kaizen Teams](#) to address safety issues in manufacturing.

Industry Sector: [Advanced Manufacturing](#)

Content Area: [Literacy](#)

Core Topic: [Integrating and presenting information](#)

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Common Core State Standards

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.

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.11-12.4. Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

W.11-12.2. Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

W.11-12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

W.11-12.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

L.11-12.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

L.11-12.2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

WHST.11-12.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

Adult Basic Education Standards

Reading Standard 1: Comprehend and analyze a variety of texts for various purposes.

R1.4a Distinguish between fact and opinion, fact and fiction, relevant and irrelevant information.

R1.5b Evaluate the persuasiveness of a text on the basis of the quality of evidence provided to support its argument.

Writing Standard 1: Learners will express themselves through writing for a variety of purposes.

Writing Standard 3: Learners will use a variety of strategies to convey meaning through written English.

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.

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. They 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 Technician, 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. Polartec is a fabric used for winter clothing and blankets. The Mills uses a [lean manufacturing](#) process to make sure that they are making quality products in a not wasteful manner. The goal of [lean manufacturing](#) is to find and then get rid of waste in the production process. A few examples of how companies get rid of waste are making the time it takes to do a task less, making the scrap rate in the plant less, or decreasing the number of accidents.

The Mills runs its production process during all three shifts, twenty-four hours each day. This is part of their [lean manufacturing](#) process. The company's approach promotes trust and respect. This means that 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. An important part of their quality control process is the use of [Kaizen Teams](#). These teams are formed to get rid of waste by allowing workers to uncover problems and make changes. [Kaizen Teams](#) define the problem or goals. They document the current state of the manufacturing process. Then, they [brainstorm](#) and develop a solution and put the solution into practice. Finally, they develop a follow-up plan. Kaizen is a continuous improvement process. Most manufacturing companies apply continuous improvement processes. These processes may have different names. Through quality circles, weekly team meetings, or daily [shift](#) meetings, companies bring together workers to find more efficient and effective ways to [manufacture](#) products.

Worker safety is a main goal of The Mills. Worker accidents are tracked publicly on large wall charts. These charts are 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. There has also been an increase in the number of accidents reported on the first [shift](#) in shipping. The

problem has been brought to the attention of managers at the last production team meeting. A Kaizen Team was formed. This team is made up 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](#) and 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 excused from your normal work activities and allowed to take part in a Kaizen Team. Being a part of the Kaizen Team includes training in the Kaizen method of problem solving. [Kaizen Teams](#) define the problem or goals. They document the current state of the manufacturing process. Then, they [brainstorm](#) and develop a solution and put the solution into practice. Finally, they develop a follow-up plan, present results to the entire workforce at the manufacturing company, and celebrate the team's success.

As a Kaizen Team member, you will be expected to talk to and interview co-workers. After these interviews, you will discuss with the Kaizen Team what you learned. You will be asked to take notes of key points discussed at team meetings and help to draft the "problem definition" and goals. You will be asked to collect and analyze data. Some examples of this type of data are the types of accidents, what time of day they occur, the types of equipment and processes involved, the conditions of the facility at the time of the accidents, the amount of overtime worked during accident shifts, and the seriousness of accidents.

You will review [accident reports](#). You will also gather information from co-workers in your department about accidents on your [shift](#) and their causes. You will write the first draft of your team's written report to management that explains or defines the problem, synthesizes and presents the data obtained from many sources, identifies the root cause, and proposes recommendations and specific actions to be taken. You will develop charts and graphs that share information that led your team to a solution. As a Kaizen Team member, you will participate in the presentation of your team's work to your co-workers at The Mills.

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. Polartec is a fabric used for winter clothing and blankets. The Mills uses a [lean manufacturing](#) process to make sure that they are making quality products in a not wasteful manner. The goal of [lean manufacturing](#) is to find and then get rid of waste in the production process. A few examples of how companies get rid of waste are making the time it takes to do a task less, making the scrap rate in the plant less, or decreasing the number of accidents.

The Mills runs its production process during all three shifts, twenty-four hours each day. This is part of their [lean manufacturing](#) process. The company's approach promotes trust and respect. This means that 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. An important part of their quality control process is the use of [Kaizen Teams](#). These teams are formed to eliminate waste by allowing workers to uncover problems and make changes. Basically, [Kaizen Teams](#) define the problem or goals. They document the current state of the manufacturing process. Then, they [brainstorm](#) and develop a solution and implement the solution. Finally, they develop a follow-up plan. Kaizen is a continuous improvement process. Most manufacturing companies apply continuous improvement processes though it might have different names. Through quality circles, weekly team meetings, or daily [shift](#) meetings, companies bring together workers to find more efficient and effective ways to [manufacture](#) products.

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. The problem has been brought to the attention of managers at the last production

team meeting. A Kaizen Team was formed 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. Being a part of the Kaizen Team includes training in the Kaizen method of problem solving, defining the problem or goals, documenting the current state of the manufacturing process, brainstorming and developing a solution, implementing the solution, developing a follow-up plan, presenting results to the entire workforce at the manufacturing company, and celebrating the team's success.

As a Kaizen Team member you will be expected to interview co-workers and discuss with the Kaizen Team what you learn. You will be asked to take notes of key points discussed at team meetings and help to draft the "problem definition" and goals. You will be asked to collect and analyze data such as the types of accidents, when they occur (time of day), types of equipment and processes involved, conditions of the facility at the time of the accidents, amount of overtime worked during accident shifts, and seriousness of accidents. You will review [accident reports](#) and gather information from co-workers in your department about accidents on your [shift](#) and their causes. You will develop the first draft of your team's written report to management that defines the problem, synthesizes and presents the data obtained from many sources, identifies the root cause, and proposes recommendations and specific actions to be taken. You will develop charts and graphs that share information that led your team to a solution. As a Kaizen Team member, you will participate in the presentation of your team's work to your co-workers at The Mills.

Core instructional context

Integrating and presenting information from different formats and in different formats requires students to use critical thinking skills along with presentation skills. Integrating and presenting information in new or different formats require students to engage in higher order thinking as identified by the updated version of [Bloom's Digital Taxonomy](#).

In order to integrate and create a new format of information, students will need to gather the additional information they need about the topic, understand how it fits together, and then create a different and more accessible version of the information.

Show the video [Using Information from Career One Stop](#). Ask students where they gather information they need and discuss the sources of information they currently use. Tell them that in this activity they will engage in gathering information, understanding what the new information means, and then provide it in a new format for someone else.

There are several steps students might take to integrate and present information.

1. *Students develop background knowledge about the topic.*

For example, in the scenario in this module members of the Kaizen Team will gather information from co-workers. Students might use a matrix similar to this one to gather information from several co-workers:

	Source #1 note	Source #2 note	Source #3 note	Source #4 note
Main Idea A				
Main Idea B				
Main Idea C				

2. *Students evaluate sources of information they find, whether in print, online or in person.*

As students search for information either in print or online, they need to evaluate their sources of information to be sure that the content is accurate and written by an authority in the field (a

knowledgeable person or organization). They also need to evaluate that it is objective and unbiased, current and verifiable. For more information on critically evaluating sources of information, see [Critical Evaluation of Information Sources](#) or [Evaluating Web Sites: Criteria and Tools](#). For help on conducting Internet searches, direct students to [Conducting Effective Online Research](#). Students should also evaluate the source and content of interviews they conduct just as the Kaizen Team must do in their interviews of co-workers. They need to ask themselves questions, such as: Is this person knowledgeable about the situation? Does the person have a motive to respond inaccurately? Is the person's point of view too [subjective](#)? Does information from the interviews conflict? If so, how can you determine the correct information? Does information you receive from interviews match your observations?

3. *Students use critical thinking to analyze and synthesize information.*

After they have gathered information and evaluated all their sources, students will review each piece of information or data they've gathered in light of their goal. In the situation of the Kaizen Team described in the scenario, the goal of the students is to identify the reason for the increase in the number of accidents reported on the third [shift](#) on the production floor and the first [shift](#) in shipping. They will use critical thinking to compare and contrast the information or data in relationship to what they already know, to notice emerging themes or patterns, and to notice any gaps in the information they have. Synthesizing information requires students to process and interact with information rather than simply copying and pasting. Students who are actively engaged with information are able to categorize, analyze, combine, extract details, re-assess the value of the collected information, and look for bias or omissions. Finally, they can relate new understanding to their own knowledge and experiences and develop new meaning or representation of the information.

4. *Students create a new representation of the information.*

Next, students create a representation of their new integrated knowledge which will include their own understanding of the new information they've gathered, integrated from a variety of sources, and combined with their previous background knowledge. The new representation might take the form of a report, a PowerPoint presentation, or a chart or graph.

5. *Students reflect and self-assess.*

As a final step, students might reflect on what they've learned not only about the topic but also the process they've gone through to complete the activity. They should use the class presentation rubric to assess their work.

Example Activity

Assign small groups of two or three students to research information about the role of a kaizen team and to develop a PowerPoint presentation about what they've learned. In their groups, students should develop a list of questions they will need to answer about the role of Kaizen Team members and conduct research. Remind students that they can use a jigsaw strategy to share the research work and then to integrate all the information they've found. Sources of information that might be useful to help them get them started include:

- [What Does Kaizen Mean?, Gembutsu Consulting](#)
- [Kaizen: Lean manufacturing continuous improvement, Reliable Planet](#)
- [Lean Thinking and Methods, EPA](#)

After groups complete their research and have synthesized the information, they will then create a PowerPoint presentation (including notes for each slide) to share with the class.

Assessment

Use the class presentation rubric or adapt one of the ones below for self- or peer-assessment or to assign a grade:

- [Grading Rubric for a PowerPoint Project, Sacramento State College of Education](#)
- [Career/College PowerPoint Presentation Rubric, RCampus](#)

- [Rubric for Assessing Written Presentation, The State of Israel](#)
- [PBL Checklist, 4teachers.org](#): Instructors can use the PBL Checklist website to develop customized checklists for assessment.

Contextualized learning activities

1. *Practice identifying problems and developing solutions in teams*

Use the [Utopia Department Store scenario](#) from the Alabama Learning Exchange.

Modify the activity into a jigsaw to better replicate team work by taking the following steps:

1. divide the students into three groups representing the three types of employees in the scenario (managers, full-time employees, part-time employees);
2. have each group develop a list of problems mentioned in the scenario;
3. ask each group to identify possible solutions and develop a set of written bullet points outlining the problem and recommended solutions. Make sure each person in the group has a copy;
4. form new teams comprised of one manager, one full-time employee and one part-time employee;
5. have the new teams share their lists of identified problems and solutions. Have students compare their lists and come to agreement on the final solution;
6. have each student write two paragraphs about the root cause of the problem, the proposed solution and why it is the best choice. Remind them to note what form of waste they have eliminated by their solution; and
7. for a follow-up activity, have a class discussion examining the different perspectives of the three groups of employees (managers, full-time and part-time employees.)

2. *Summarizing information for team members*

In small groups, have students read two sections from the generic Occupational Safety and Health Administration (OSHA) Safety Manual and create a poster to explain the important safety information to other workers on their [shift](#). The poster can be either on poster board or they can create an online poster using an online tool such as [Glogster](#). Present the poster to the class.

For example, have students read a section on material handling safety in the [Safety Plan Builder: Sample OSHA Safety Manual](#). Students can read the two sections on "Manual Lifting Rules" on p. 106 and "Clean Work Areas" on p. 107. Students then create posters with their small group.

Contextualized test items

1. Presenting information for different audiences

In one of the learning activities in this module, students developed a poster on safety tips for fellow workers. Ask students to write a two paragraph notice to their manager about the safety tips. Use a rubric for assessment.

2. Have students watch the video [Lean Desk](#), a fun quick example of one manager's attempt to create a super lean office desk.

Prior to watching the video, distribute questions to answer while watching the video. Have students take notes during the video.

- What is the problem he is trying to solve?
- What waste does he want to eliminate? Name at least two examples.
- Name two solutions he considered.
- List three ways that he eliminated waste by the use of his last desk.

Based on their notes, have students write a paragraph describing the problem and why the final desk was the best solution. Use a writing rubric to assess the paragraph.

Contextualized project

Developing a lean classroom

Have students watch these three short videos to better understand what Kaizen means and how to think about everyday activities from a lean perspective.

[What Does Kaizen and Emptying a Dishwasher Have in Common? Watch this Video to Learn!](#)

[Lean Bathroom](#)

[Lean Kitchen](#)

Tell students that they will practice working in teams, like [Kaizen Teams](#) in industry, to identify ways to make the classroom more lean. Remind students that a lean process is one that seeks to eliminate waste; waste can be time, materials, days, movement and much more. Divide the class into groups of three to five students. Each group will identify a problem in the classroom and gather evidence of the problem. Each group will then [brainstorm](#) solutions. Each group will choose the best solution and prepare a presentation that includes a handout with a two-paragraph description of the problem and solution and at least two of the following: charts, diagrams, and a five slide PowerPoint. Each group presents their problem and lean solution to the class. The class then determines which problem and solution it thinks is most useful to the whole class. Finally, the class develops a plan to implement the solution. A class- or teacher-developed rubric can be used for assessment or refer to one of the rubrics in the Assessment section of this module.

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

This is a brief video of an actual business process kaizen event that took place at a global manufacturer of door opening solutions. It shows how the company identified problems in the processing of orders in an office, developed solutions, and implemented them in five days.

[Business Process Kaizen Team in Action](#)

Other resources on kaizen and manufacturing

- [Examples of problems in manufacturing production lines](#), Business Knowledge Source
- [Definition of Kaizen](#), Vital Enterprises
- [Description of quality circles](#), Answers.com
- [Massachusetts Career Information System](#): Provides examples of manufacturing occupations in Massachusetts
- [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](#)
- [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](#)

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