



Transportation, Distribution & Logistics

A Note on Teamwork and Presentations to Further Connect WRS to the Activity:

- Identify the competency or unit in your program that would be most appropriate for teaching this activity synchronously. Students learn best in context.
- Divide the class into competitive teams (at least two).
- Have the teams brainstorm ideas and establish rules for brainstorming: all ideas are accepted.
- Have teams arrive at consensus and choose their best idea to propose.
- Teams should establish norms, roles, and expectations for team members.
- Teams will clearly define their mission and the idea of their proposals.
- The teacher should act as the judge of the quality and feasibility of the ideas.
- The teacher should also provide enough background to get students started and monitor student behavior along the way, providing helpful feedback when necessary.
- Students should share work and reflect on how well the team worked together.

Introduction

This Career Cluster groups career titles that focus on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

Note: Ask students to list careers in the Cluster that require mastery of technical skills. Where can your program lead them?

Transportation, Distribution & Logistics Trends (2024)

1. **Digitalization:** After years of discussion, digitalization is finally becoming a reality for many shippers. The Covid pandemic and the shift to remote work accelerated this trend. Major players like Maersk, MSC, and Hapag-Lloyd have digitized their operations. Additionally, boutique shipping companies are implementing their own software systems and tools for customers. Artificial intelligence (AI) and blockchain technology are expected to further enhance real-time shipment tracking and supply chain visibility. [Paperless shipping is also gaining traction.](#)



2. **Robotic Process Automation (RPA):** RPA is transforming logistics by automating repetitive tasks, improving efficiency, and reducing errors. It streamlines processes like order processing, inventory management, and data entry.
3. **Blockchain Technology:** Blockchain ensures secure and transparent transactions. In logistics, it can enhance supply chain visibility, reduce fraud, and improve traceability.
4. **Last-Mile Deliveries:** With the rise of e-commerce, efficient last-mile delivery solutions are crucial. Companies are exploring options like drones, autonomous vehicles, and smart lockers.
5. **Big Data and Analytics:** Leveraging data analytics helps optimize routes, predict demand, and enhance overall supply chain performance. [Real-time data enables better decision-making.](#)

Automotive Repair Trends (2024)

1. **Digitalization and Cloud-Based Systems:**
 - The auto repair industry is embracing digital tools and cloud-based systems. These technologies enhance efficiency, streamline operations, and provide real-time insights.
 - **Tekmetric**, a modern cloud-based shop management system, empowers repair shops to ride the wave of industry growth. [In 2023, the industry witnessed a remarkable revenue surge of 9.7%, with an anticipated additional growth of 8.1% in 2024.](#)
 - Tekmetric shops reported a **6.35% increase** in cars occupying their bays, and **80%** of open repair orders were promptly paid in full. [Leveraging such tools can help repair businesses thrive and expand.](#)
2. **Maximizing Efficiency through Data:**
 - Data-driven decisions are crucial. Repair shops can unlock the full value of their work by maximizing efficiency through data analytics.
 - Understanding repair order trends, optimizing inventory management, and predicting demand contribute to better decision-making and profitability.
3. **Focus on Green Vehicles:**
 - As environmental awareness grows, repair shops are adapting to the rise of electric and hybrid vehicles.
 - Technicians need specialized training to handle electric components, batteries, and charging systems.
4. **Customer-Centric Experiences:**
 - Customer satisfaction is paramount. Repair shops are investing in personalized services, transparent communication, and convenient scheduling.
 - Building trust and loyalty leads to repeat business and positive reviews.
5. **Collaborations and Partnerships:**



- Repair shops are collaborating with other industry players, including insurers, parts suppliers, and technology providers.
 - Partnerships can lead to better service offerings, cost savings, and access to new markets.
6. **Remote Services and Diagnostics:**
- Remote diagnostics and telematics allow technicians to diagnose issues without physical inspection.
 - Predictive maintenance and remote monitoring enhance efficiency and reduce downtime.

Scenario

Create a Class Presentation or Report

1. Work with a team. Choose one of the trends above, either out of the auto repair area or the larger logistics and shipping area.
2. Describe the trend in detail:
 - What is it?
 - How is it done?
 - What are its strengths and weaknesses?
3. Provide three examples of your trend in action.
4. Create a business that specializes in using this trend. How would you take advantage of the market to implement your trend on a wider scale? Describe your particular, personal, or professional interest in this trend.
5. Incorporate at least one question and answer from each of the five WRS areas which follow in the WRS Connection section.

WRS Connection

Each of the following Workplace Readiness Skills with their definitions is followed by a series of process questions that students may pull from and answer to include within their presentations. Choose the most relevant questions in each of the five skill areas.

1. Creativity and Innovation—We define creativity and innovation as:

- Discussing the importance of creativity and innovation in the workplace
- Brainstorming and contributing ideas, strategies, and solutions
- Developing and/or improving products, services, or processes
- Identifying and allocating available resources.



Process Questions

- a) Sometimes, creative ideas represent a disruption or change to the same pattern or way of doing things. In what way is your trend creative and innovative?
- b) When deciding how to arrange your team and start your proposal, what was your creative process?
- c) How might multiple trends be used to create an innovation?
- d) How did you demonstrate creativity when putting your presentation together?
- e) How might you make your trend into a more widespread accepted practice? If you did so, this is considered to be creativity.
- f) How would you summarize your report as a quick pitch or proposal to a company that could benefit from implementing your trend?
- g) What resources does your trend use: time, people, technology, funding? Finding and effectively applying resources is creative.
- h) There are two ways of seeing and thinking about the future: pessimistically and optimistically. How will your trend create a positive future? How might it have a negative effect?

2. Critical Thinking and Problem Solving—We define critical thinking and problem solving as:

- Recognizing and analyzing problems
- Evaluating potential solutions and resources
- Using a logical approach to make decisions and solve problems
- Implementing effective courses of action.

Process Questions

- a) What problems arise when managing your team to complete this activity?
- b) How did you get your team to agree with the approach? How did you get them to contribute efficiently and fairly?
- c) What resources, if any, did you consult to help you complete the assignment?
- d) How is data analysis affected by critical thinking? What types of data analysis did you complete for this project? What types of data are required for your trend to work?
- e) What was the main problem(s) you encountered when creating your report, and how did you resolve them?

3. Initiative and Self-Direction—We define initiative and self-direction as:

- recognizing the importance of proactive, independent, decision-making



- identifying workplace needs
- completing tasks with minimal direct supervision
- applying solutions.

Process Questions

- a) Who on your team took a leadership role? Describe.
- b) Did team members complete their tasks without being managed? Describe.
- c) What does initiative have to do with creativity and this project?
- d) What does initiative have to do with problem solving and critical thinking?
- e) In terms of initiative, what makes the best workers in your career path? Examples?
- f) Did competing with another team motivate you to succeed? Why or why not? What additional forms of competition might have been motivation to act in a certain way?
- g) How is motivation related to initiative and why is it important to have motivation?

4. Integrity—We define integrity as:

- recognizing the importance of having integrity in the workplace
- complying with local, state, and federal laws
- adhering to workplace policies and procedures
- exhibiting honesty, fairness, and respect toward self, others, and property.

Process Questions

- a) What ethical guidelines restrict the automotive repair or the larger transportation, distribution, and logistics industry?
- b) Can the trend you focused on be used in an unethical manner?
- c) What are the ethical issues with collecting data, including user-based or personal data? What about data sharing?
- d) Did you use AI in ethical or unethical ways to complete your project? How might it be used in the trend you investigated?
- e) Did any ethical/fairness issues arise when working with your team? If so, how did you resolve them?

5. Work Ethic—We define work ethic as:

- demonstrating diligence (e.g., working with persistence to accomplish a task)
- maintaining dependability (e.g., being reliable)
- accounting for one's decisions and actions



- accepting the consequences of decisions and actions.

Process Questions

- a) How was your team's work ethic in completing this project? Describe in work ethic terms.
- b) Did you disagree with any of your team's decisions? How did you react? Did it affect your work?
- c) How did you demonstrate diligence, dependability, and accountability?
- d) What setbacks did you encounter and how did you resolve to work through them?
- e) How did you show resilience and drive and a positive mindset as you worked with persistence to create a good report? Is there a correlation between having a good attitude and creating a good final product?
- f) Were your contributions overlooked, underpraised, or rejected? Did that affect your work ethic? What could help your work ethic in a workplace setting?
- g) How did you do your part or perhaps more than your fair share? Did you help others complete their tasks?

We strongly encourage teacher feedback on these activities, if implemented, as well as success stories and examples of your completed work. Reviews may be sent to Darren Morris, Instructional Designer, CTECS, dmorris@ctecs.org.

For teachers who wish to expand the activity into a larger project, the following PBL Design Principles and Teaching Practices are provided

PBL Project Design Principles

1. **A Challenging Problem or Question:** The project is framed by a meaningful problem to be solved or a question to answer, at the appropriate level of challenge
2. **Sustained Inquiry:** Students engage in a rigorous, extended process of posing questions, finding resources, and applying information.
3. **Authenticity:** The project involves real-world context, tasks and tools, quality standards, or impact, or the project speaks to personal concerns, interests, and issues in the students' lives.
4. **Student Voice & Choice:** Students make some decisions about the project, including how they work and what they create, and express their own ideas in their own voice.
5. **Reflection:** Students and teachers reflect on the learning, the effectiveness of their inquiry and project activities, the quality of student work, and obstacles that arise and strategies for overcoming them.



6. **Critique & Revision:** Students give, receive, and apply feedback to improve their process and products.
7. **Public Product:** Students make their project work public by sharing it with and explaining or presenting it to people beyond the classroom.

PBL Teaching Practices

1. **Design & Plan:** Teachers create or adapt a project for their context and students, and plan its implementation from launch to culmination while allowing for some degree of student voice and choice.
2. **Align to Standards:** Teachers use standards to plan the project and make sure it addresses key knowledge and understanding from subject areas to be included.
3. **Build the Culture:** Teachers explicitly and implicitly promote student independence and growth, open-ended inquiry, team spirit, and attention to quality.
4. **Manage Activities:** Teachers work with students to organize tasks and schedules, set checkpoints and deadlines, find and use resources, create products and make them public.
5. **Scaffold Student Learning:** Teachers employ a variety of lessons, tools, and instructional strategies to support all students in reaching project goals.
6. **Assess Student Learning:** Teachers use formative and summative assessments of knowledge, understanding, and success skills, and include self and peer assessment of team and individual work.
7. **Engage & Coach:** Teachers engage in learning and creating alongside students, and identify when they need skill-building, redirection, encouragement, and celebration.