 **Project: Sustainability in Global Production and Distribution**

**Sustainable Development for the Future**

**Course**

**Supply Chain I**

**Objectives**

* **Students will gain an understanding of the UN Sustainable Development Goal #12—Responsible Production and Consumption**
* **Students will develop an understanding of the importance of current sustainable consumption and production patterns**
* **Students will apply transportation, distribution, and logistics knowledge to a complex real-world problem**
* **Students will work within groups using a design process to develop solutions to a complex real-world problem**

**TN CTE State Standards**

**Problem Solving #18**

**Solve given problems related to transportation of goods and warehousing by evaluating data and presenting solutions or recommending appropriate decisions. Use spreadsheets and/or other software in calculating “what if” scenarios as appropriate. Types of problems should include scenarios such as: a. selecting routes and modes of transportation between a distribution center and various markets; b. calculating the carbon footprint of similar products shipped from different locations and by different modes of transportation; c. optimizing warehouse usage; d. maximizing trailers for shipping e. comparing offsite vs. onsite warehousing f. planning for the moving and handling of hazardous goods; g. analyzing the impact of natural disasters on supply chain; o forecasting potential threats related to the geography of a company’s supply base; o designing of contingency plans in times of natural disasters; and h. developing strategies for working toward the sustainable use of specific materials and modes of transportation.**

**Due Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Grading**

**Project will be graded using the “Project with Presentation Rubric” and is worth 100 points.**

**Resources**

**EPA – Sustainable Manufacturing -** <https://www.epa.gov/sustainability/sustainable-manufacturing>

**FedEx Sustainability -** <https://sustainability.fedex.com/>

**McDonald’s Sustainable Agriculture & Beef - https://corporate.mcdonalds.com/corpmcd/our-purpose-and-impact/our-planet/sustainable-agriculture.html**

**United Nations Sustainable Development Goals - https://www.un.org/sustainabledevelopment/sustainable-development-goals/**

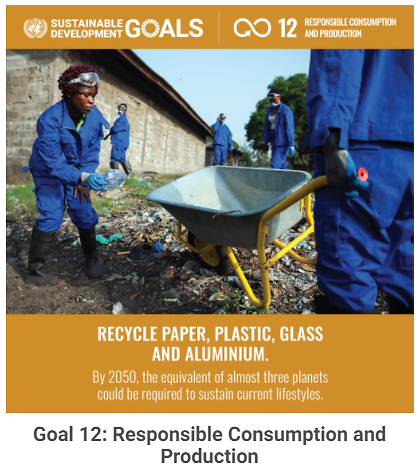
**UN Sustainable Development Goal #12 - https://www.un.org/sustainabledevelopment/sustainable-consumption-production/**

**XPO Logistics 2019 Sustainability Report - https://sustainability.xpo.com/**

**Background Information**

The world’s population could hit 9.6 billion by 2050, putting more demands on the Earth’s limited natural resources. Unfortunately, our existing natural resources are too often squandered or damaged through current production and consumption patterns. For example, about one third of the food produced each year spoils or is lost in harvesting, transportation, retail, and/or storage. Fresh water is being polluted faster than nature can purify it. Household and commercial energy use, car ownership, and air travel—all significant contributors to carbon dioxide emissions—are on the rise.

**Why should we care about inefficient production and consumption**?

Not only will continuing these wasteful habits cause irreparable damage to the Earth, but we would also need three planets’ worth of natural resources to support this way of life as the population rises to 9.6 billion. Quite simply, our current practices are unsustainable.

**What can we do about it?**

The United Nations is dedicated to redesigning inefficient patterns of production and consumption in order to create a sustainable and dignified future for everyone on Earth. One of UN’s specific targets for achieving this goal is encouraging companies to adopt sustainable practices. Experts in the transportation, distribution, and logistics sector can play an important role in helping companies makes these crucial changes.

**UN Sustainable Development Goal #12**

Responsible Production and Consumption

*Source: Project Management Institute Educational Foundation*

**Possible Field Trips**

Agricenter

FedEx Aviation

MLGW

**Pre-Project Activities**

1. Watch the video “UN: Urgent Solutions for Urgent Times” and answer the questions on the Activity: Video Analysis worksheet - <https://www.youtube.com/watch?v=xVWHuJOmaEk&t=1s>
2. Watch the video “The Importance of Sustainable Food Chains” and answer the questions on the Activity: Video Analysis worksheet - <https://www.cnbc.com/2020/08/21/sustainable-food-production-becoming-critical-due-to-population-growth.html>
3. Read and discuss Article “FedEx pledges $2 billion toward carbon-neutral operations by 2040, aims for all-electric fleet”
4. Answer the following essential questions in complete sentences:
   1. How does the TDL sector impact global production and consumption trends?
   2. What are the most significant obstacles companies face when it comes to adopting more sustainable practices?
   3. How can companies in the TDL sector adopt better practices now in order to pave the way toward a safe and profitable future for all?
5. Activity: Measuring Your Ecological Footprint – Questionnaire and Video

<https://www.youtube.com/watch?list=PLzUFp5s4RJBBbGRknl5G6LvTJBAP6Cz6L&v=_cadZ414YJ0&feature=emb_logo>

1. Calculate your Ecological Footprint – using the info from your questionnaire determine your ecological footprint using the assigned software. Run the footprint calculator again and try to reduce your ecological footprint as much as possible. Share your findings with the class—especially if you were not able to reduce your ecological footprint down below 2 Earths. (Software – <https://www.footprintnetwork.org/resources/footprint-calculator/> )



**Project**

**Essential Question**: How can companies in the transportation, distribution, and logistics sector adopt better practices now in order to pave the way toward a safe and profitable future for all?

In groups of 2, you will compete against your classmates to design a useful, feasible, and sustainable practice that can be implemented in a real-life transportation, distribution, and/or logistics company. You will present your solution to a panel of judges who should receive enough information to make an informed decision about your recommended practice. You will be judged on the feasibility of the practice and the significance of the practice’s impact.

Your presentation should include the following parts:

* A brief profile of your chosen company:
  + What are its various roles and major business functions?
  + How sustainable are its current practices? (You may choose a segment of the business so that are dealing with only one solution instead of numerous solutions. For example, if you choose Heinz Ketchup, you could select either raw material procurement, manufacturing, or distribution/transportation.)
  + Is your company already working to implement more sustainable practices? If so, how?
* A detailed explanation of your recommended sustainable practice:
  + What should the company change or adopt in order to support UN SDG #12?
* Challenges and benefits of your recommended sustainable solution:
  + When possible, propose realistic solutions to challenges
  + Discuss benefits both to the company itself and to the wider community and world