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Transportation, Distribution, & Logistics careers include those of planning, management, and movement of people, materials, and goods by road, pipeline, air, rail & water and related professional and technical support services such as transportation infrastructure planning and management, logistic services, mobile equipment and facility management.

History of North Dakota Transportation

Introduction

This lesson requires students to discover the history and present status of the transportation system in North Dakota. Students will also be exploring career opportunities in the cluster of Transportation, Distribution and Logistics.

Warm-Up Activity

Direct the students to brainstorm about types of transportation systems, that of:

- Air/Space
- Rail
- Water
- Road
- Transit (subway, streetcars)

Ask students to pick two systems that have shaped the state of North Dakota the most. (Road and Rail systems have had the most impact.)

State to the student, “Just as the railroad greatly affected the steamboat transportation, it seems that the passenger trains existence has been and continues to be affected by the Interstate Highway system.” This lesson is aimed at raising the awareness of North Dakota students about mass transportation in general and rail service in particular. It should also raise awareness of the job opportunities available in this cluster in the state.

Ask students to share any experiences of riding on a passenger train that they or members of their family may have had.

- What do they know about the building of North Dakota's railroads?
- Do any of the students have parents, grandparents, or great grandparents who worked or are working for the railroad?
- Do they know any songs about living and/or working on the railroad?
- How did Native Americans regard the coming of the railroad?
- Do students know any stories about train wrecks?
- How have the railroads affected the demographics of North Dakota?

Procedure

Direct the students to draw up a plan of study relating to the passenger railroad system in North Dakota. The students may elect to work as individuals or in cooperative groups of no more than four people. Students should be encouraged to share knowledge about the railroad in as creative a mode as possible. For example, a group may collect songs about the building of the railroad, or assemble a picture album of paintings or photographs feature trains from North Dakota's past as well as contemporary trains. Another group may present a power point on the impact of the railroad on the Native American people of North Dakota. Another group might present a comparison between the Interstate Highway system and the railroad system, considering such issues as energy conservation and convenience as well as costs associated with each system. Yet another group may interview people who work on the current railroad system in our state, whether the train hauls freight or passengers. All groups should include information on the occupations that are represented in the project they have chosen and the North Dakota businesses that could be affected. Possible websites to visit include www.northdakotahasjobs.com and www.jobsnd.com.

The students will present their project to the class.

Assessment

The assessment for the project should also be created by the student(s) in cooperation and with the approval of the instructor. The students may be given a brief training on writing rubrics for their project, or they may create a test or a quiz to evaluate the effectiveness of their teaching and the attentiveness and level of understanding of their audience.

Standards

This lesson addresses the following North Dakota Social Studies Standards:

Standard 1: Nature and Scope of History

8.1.1 Understand the role of chronology and perspective in describing historical events and periods of history.

8.1.2 Understand how key events, people and ideas contributed to North Dakota history.

Standard 3: Economic Systems

8.1.3 Understand how key events, people and ideas contributed to United States history.

8.3.1 Understand the principles governing economic decision-making at the state, national, and international level.

8.3.2 Understand the structure of the United States economic system, and

Standard 7: Culture

8.7.1 Understand the relationship between socio-economics and culture.

Time Frame

This lesson will take approximately four class periods to include the report of the projects given by the groups.

Resources

Odin -- www.odin.nodak.edu/

Career Clusters -- www.careerclusters.org

News Releases -- www.amtrak.com/press/atk200406030.html

State Historical Society of North Dakota Home Page -- www.state.nd.us/hist/

North Dakota Department of Transportation -- www.state.nd.us/dot/

The Cluster/Pathway Model for Transportation, Distribution & Logistics outlines the pathways and occupations as well as the related cluster knowledge and skills. This model can be located by clicking on Career Clusters at www.imaginend.com.

Career Cluster: Transportation, Distribution and Logistics

Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

Sample of Career Specialties / Occupations	<p>Air/Space Transportation: Transportation managers—air * Airplane pilots/copilots * Commercial pilots * Flight engineers * Flight attendants * Dispatchers-air * Traffic managers * Air traffic controllers * Aircraft cargo handling supervisors * Airfield operations specialists * Other airlines operations and support jobs</p> <p>Rail Transportation: Transportation managers---rail * Dispatchers-rail * Traffic managers * Locomotive engineers, * Locomotive firers * Railway conductors and yardmasters * Railroad brake, signal and switch operators (including train crew members and yard workers) * Railyard engineers, dinky operators, and hostlers * Other railyard and terminal operations and support jobs</p> <p>Water Transportation: Transportation managers—water * Dispatchers—water * Traffic managers * Captains * Mates * Pilots of water vessels * Sailors and marine oilers * Able seamen * Ordinary seamen * Ship and boat captains * Ship engineers * Motorboat operators * Bridge and lock tenders * Other port/harbor/waterway/marina operations and support jobs</p> <p>Road Transportation Transportation managers—road * Dispatchers--Truck/bus/taxi, traffic managers * Truck drivers-heavy * Truck drivers-tractor-trailer * Truck drivers—light or delivery services * Bus drivers-transit and intercity * Bus drivers-school * Taxi drivers and chauffeurs * Truck/bus/taxi terminal operations and support jobs</p> <p>Transit Systems: Transportation managers—mass transit * Dispatchers-bus * Traffic managers Dispatchers-rail * Traffic managers * Bus drivers—transit and intercity * Subway and streetcar operators * Other terminal operations and support jobs</p>	<p>Logisticians * Logistics managers * Logistics Engineers * Logistics analysts * Logistics consultants * International logistics</p>	<p>Warehouse managers * Storage and distribution managers * Industrial and packaging engineers * Traffic, shipping and receiving clerks * Production, planning, expediting clerks * First-line supervisors/managers of helpers * Laborers, and material movers-hand * First-line supervisors/managers of transportation and material-moving machine and vehicle operators * Laborers and freight, stock and material movers, hand * Car, truck and ship loaders * Packers and packagers-hand * Other packaging/packing/material handling and moving jobs</p>	<p>Facility: Facility maintenance managers and engineers * Industrial equipment mechanics * Industrial electricians, * Electrical/electronic technicians * Other facility/terminal maintenance jobs</p> <p>Mobile Equipment: <u>General</u>--Mobile equipment maintenance managers * Electrical and electronic installers and repairers—transportation equipment * Mobile heavy equipment mechanics <u>Air/Space</u>—Aerospace engineering and operations technicians * Aircraft mechanics and service technicians * Airframe mechanics * Power plant mechanics * Aircraft engine specialists * Aircraft body and bonded structure repairers * Avionics technicians. <u>Water</u>—Motorboat mechanics * Ship mechanics and repairers * Motorboat mechanics and body repairers <u>Rail</u>—Rail car repairers * Signal and track switch repairers * Rail locomotive and car mechanics and repairers <u>Road</u>—Electronic equipment installers and repairers—motor vehicle * Automotive body and related repairers * Automotive glass installers and repairers * Automotive service technicians and mechanics * Automotive master mechanics * Automotive specialty technicians * Bus and truck mechanics and diesel engine specialists * Motorcycle mechanics * Bicycle repairers * Tire repairers and changers</p>	<p><u>General—Intermodal</u>-- Urban and regional planners * Civil engineers * Engineering technicians * Surveying and mapping technicians * Government service executives * Environmental compliance inspectors <u>Air/Space</u>—Air traffic controllers * Aviation inspectors <u>Road</u>—Traffic engineers * Traffic technicians * Motor vehicle inspectors * Freight inspectors, <u>Rail</u>—Railroad inspectors <u>Water</u>—Marine cargo inspectors * Vessel traffic control specialists <u>Transit</u>—Public transportation inspectors <u>Other</u>---Other government agency managers * Regulators * Inspectors, other federal/state/local transportation agency jobs</p>	<p>Health and safety managers * Industrial health and safety engineers * Environmental scientists and specialists * Environmental science and protection technicians * Environmental managers and engineers * Environmental compliance inspectors * Safety analysts</p>	<p>Marketing managers, * Sales managers * Sales representatives—transportation/logistics services * Reservation, travel and transportation agents/clerks * Cargo and freight agents * Customer service managers, * Customer service representatives * Customer order and billing clerks * Cashiers, counter and rental clerks</p>
Pathways	Transportation Operations	Logistics Planning and Management Services	Warehousing and Distribution Center Operations	Facility and Mobile Equipment Maintenance	Transportation Systems/ Infrastructure Planning, Management, and Regulation	Health, Safety and Environmental Management	Sales and Service
Cluster K&S	<p>Cluster knowledge and skills</p> <p style="text-align: center;">◆ Academic Foundations ◆ Communications ◆ Problem Solving and Critical Thinking ◆ Information Technology Applications ◆ Systems ◆ Safety, Health and Environmental ◆ Leadership and Teamwork ◆ Ethics and Legal Responsibilities ◆ Employability and Career Development ◆ Technical Skills</p>						