Exploring Locomotive Transportation

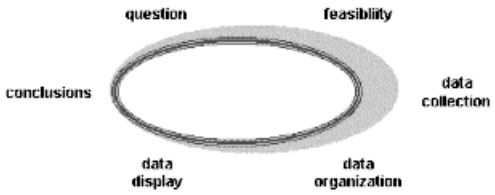
LEARNING AREA: Inquiry & Research
EDUCATION LEVEL: Elementary
CONTENT STANDARD: Media, Observation, and Investigation

Standard:
1. Direct observations or experiments with a variable including framing a question, identifying patterns; comparing individual findings to large group findings, and identifying areas for further investigation;

2. Sources, including selecting a topic and framing a question; accessing information from any or all of electronic media, print, interviews, and other sources; recording and organizing information; and reporting findings in written, oral, or visual presentation; and

3. Direct observation and interviews, including identifying a topic or area for investigation, writing a detailed description of the observation, recording and organizing information, and evaluating the findings to identify areas for further investigation.

LARGE PROCESSES/CONTENTS: Supporting Research/Chronology of Development



NEXT STEP: Assessment Task

Exploring Locomotive Transportation

Assessment Task----

Description:
This project is designed to introduce students to the basic elements of locomotive transportation including;

Thinking; about locomotive transportation, structure, design, and function.
Arranging; in chronological order, the developmental process of a large scale rail
Describing; the practical, social, and economical aspects of locomotive transport.

Products/Evidence of Learning:

Design a realistic model that demonstrates the basic elements of a modern train.
Participate in the actual construction of the model.
Clearly describe, explain, and cite examples of each basic element.

Overview:
The objective of this activity is gain an understanding of locomotive transportation systems through the design and development of a model cargo train that exhibits qualities of an actual modern locomotive cargo train.

This should include the physical train; engine, box cars, transit cars, caboose and rails. Its cargo; large and small cargo units, multi cargo units, and empty transit cars. As well as its surface and rail system.

This activity aims at broadening the students understanding of locomotive systems through the chronological process of designing, selecting, and loading a cargo train. This process requires a student to inquire about the specific materials, technologies, and components necessary to design a modern train.

- Students are to select and manipulate the building materials they feel they will need to construct the model using milk cartons, glue, paper clips, cardboard, scissors, and pencils or sticks for axles.

- Students will be assigned a **specific area** of the train to focus on.
  The engine, cargo/box cars, transit cars, the caboose, and the tracks.

- Students will be divided into groups to discuss each basic element stated in the description as it relates to their individual area.

- Students will create a list and then choose the types of materials, the number of cars, and the amount of each material they will require to construct and load their respective units.

The results will be based upon the outcome of a formal discussion between the students and the professor which highlights each of the basic elements of locomotive transportation as stated in the description.

The students may then construct the model with emphasis on the logical chronological order of assembly that may be expected of a modern locomotive train. Importance will be stressed upon answering the how's, why's, and when's of the model's construction.

Checklist:

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Checklist:

STUDENT	**TEACHER**	
_____	_____	What are the basic units of a train?
_____	_____	Why are trains used and what for?
_____	_____	What types of materials do trains carry?
_____	_____	What are some other forms of transportation?
_____	_____	How do trains relate to those forms of transportation?