

Colorado

Giant Traveling Map Lesson

TITLE / AUTHOR:

All Aboard! Racing to Build a Railroad Across Colorado / Jennifer Carpenter

COLORADO ACADEMIC STANDARDS / SUITABLE DISCIPLINES:

- Social Studies, Geography, Fourth Grade Standard 2, Grade Level Expectation 2: Connections within and across human physical systems are developed, Evidence Outcome a: Describe how the physical environment provides opportunities and places constraints on human activity. (DOK 1-2)
- Social Studies, Geography, Fourth Grade Standard 2 Grade Level Expectation 2: Connections within and across human physical systems are developed Evidence Outcome b: Explain how physical environment influenced and limited immigration into the state (DOK 1-2).

OBJECTIVES:

Students will:

- work cooperatively to plan a route for a railroad, crossing Colorado from east to west through mountain passes and a large Front Range city.
- understand the physical constraints on the development of railroads in Colorado.

RECOMMENDED GRADES: Third, Fourth, and Fifth

TIME NEEDED: 45 minutes

MATERIALS:

- Paper models of track. Four, color-coded sets of Narrow Gauge track printed on blue, red, green, yellow paper. Four sets of Standard Gauge track printed on cream paper.
- Introductory reading from *The Colorado Story* book or other history resource (not supplied)
- 1894 topographic map of Colorado (<https://www.loc.gov/resource/g4310.ct000610/>)
- A set of dice
- A map of railroads and express companies in Colorado, 1879 (<https://www.loc.gov/item/98688452/>)
- Colorado road map
- Optional: train whistle

PREPARATION:

- Students will need background knowledge of the importance of railroads as transportation for goods and movement of people across the state and country.
- Students will need some background knowledge of geographic regions in Colorado (plains, mountains, plateau, passes).

- Students will be divided into 4 groups using the color corners on the giant map.
- Each group will need a set of “railroad” track available at their starting corner.

RULES:

- Shoes are not allowed on the map. Please have students remove shoes before walking on the map. Students must be wearing socks to walk on the map.
- No writing utensils on the map.
- There will be NO running or sliding on the Giant Map. This is a particular challenge when the activity is set up as a game encouraging students to move quickly across the map.

DIRECTIONS:

Before you go to the giant state map: (optional segmentation of the lesson)

1. Students should already be familiar with the features of the map and how the landforms are represented (for example, green and brown for mountains/elevated areas, blue for rivers) and the cardinal directions, especially east and west.
2. Ask the students what transportation means. Appropriate answers would include any vehicle that carries people and goods from place to place. In Latin trans means across and port means to move.
3. Ask the students what are some of the issues or troubles that topography might cause for humans as they build a land-based transportation system, primarily cars and trains, across Colorado. The students should discuss the presence of mountains and rivers as major barriers to transportation. This conclusion is supported by The Colorado Story on page 123 in a discussion of the difficulties of establishing a transportation system in the mountains of Colorado.
4. Explain the general outline of the Giant Map activity. The challenge is to find a way to help the Colorado Territory. The students will lay some railroad track from east to west across the state. It will be important to have the track go through a larger city on the Front Range. Ask the students why they think that the railroad needs to run through a city. They may answer that this is a good place to get supplies or people who live in the cities would be interested in getting across the mountains.
5. Introduce the students to the two types of railroad track. The narrow gauge tracks were used primarily in the mountains since that enabled locomotives to get up steeper hills when compared to standard gauge. Reference to this is on page 124 of The Colorado Story. For the purposes of the activity, the narrow gauge mountain tracks are also shorter, because to lay track in the mountains, sometimes tunnels would need to be dug, which would be time consuming. They are also shorter to be easier to go around mountains. We will not be using special track to represent a tunnel or anything to represent a bridge. For the purposes of the activity, track can be laid over rivers.

On the map activate student thinking by asking: (optional segmentation of the lesson)

6. The students are assigned to four groups and are given a set of track of a single color.
7. The students are told that they are four different competing railroad companies trying to be the first to cross the Rockies and bring much needed supplies to the Colorado Territory. Green and yellow groups will work from west to east and the

red and blue groups will work from east to west. Each group may have only one member on the Giant Map at one time. Each group member must take turns in order, so that all team members are participating. When taking a turn on the Giant Map group members can either lay down a piece of track or remove a piece of track if they feel it is going the wrong direction or too close to another group's track. Teams must use the narrow gauge track when crossing any green surface on the map. While green symbolizes National Forests, there is a good correlation between National Forests and mountains. Each group must lay their track through one of the following large Front Range Cities: Pueblo, Colorado Springs, Denver or Fort Collins. Only one group can go through each city. You may wish to have each group pick out their city first as part of the planning process. Groups may not overlap track. If two groups arrive at a place at the same time and wish to lay track through that place, they will have a "railroad war". The group member laying track for each group will need to roll a die and group with the higher number gets to claim the place and lay their track. The losing group needs to reroute their track to accomplish the goal of crossing Colorado. Group members may not remove track from any other group.

8. Group members who are not laying track can use the topographic maps to plan their routes, discuss potential issues and help group members laying track to navigate the map as they lay down their track.
9. You can use the optional train whistle to begin the race.
10. There is no one best way to accomplish this task. The first team to have track that crosses from the state borders and travel through a Front Range city is declared the winner.
11. At the conclusion of the race look over the map of railroads and express companies in Colorado and compare the student's routes to those on the map. Note that many of the routes on this map are of wagon companies that carried freight (express companies), but their routes were later developed into railroads later.

MODIFICATIONS:

Heterogeneous groups will work best to accommodate all levels of learners.

ELL understanding of vocabulary: narrow gauge track, may be improved by measuring out distances using yard stick and paper.

EXTENSIONS:

Relate the lesson to modern transportation. How and where do we expect highways to be built? Why? Use a Colorado road map to check understanding.

Identify additional information about railroad wars. Consult this site for a description of the railroad war for a route through the Royal Gorge (<http://cozine.com/2011-january/the-%e2%80%9cwar%e2%80%9d-for-the-royal-gorge/>).