

# Teachers' Guide for Cobblestone

May/June 2012: Next Stop...New York's Subway

By Debbie Vilardi

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Goal: To explore the history and function of the New York City Subway System.

\*Always have a parent or trusted adult help with web research.

Before Beginning: Discuss what you know about subway systems. Is there a subway system near where you live? Have you ever ridden on a subway? Have you ridden on the New York City subways? Describe your experiences.

Vocabulary: Subway

"Riding the Underground Dragon" by Emily Goodman (Pages 2-6)

Vocabulary: MetroCard

Comprehension:

1. What makes the subways confusing?
2. What is the fare?
3. How often do the trains run?
4. Where do you think most of the passengers described are going? Why?
5. Why do many people exit at major stops?
6. What are some of the differences between rush hour travel and off peak travel?
7. Name some of the famous attractions in New York City?

Writing Activity: Read "Best and Worst Things about the Subway" on page 6. Write an argument either for or against using the subway system. Add your own ideas based on "Riding the Underground Dragon."

Map Skills: Trace Adam's route on the New York City Subway map on pages 22-23.

Research Topics: New York City, subway history, New York Transit Museum

"From Horse to Electricity" by Andrew Matthews (Pages 7-9)

Vocabulary: agricultural interior, omnibus,

Comprehension:

1. Why did New York become more crowded in the latter half of the nineteenth century?
2. Why were horses the most common form of transportation for the growing city?
3. What were some of the problems of horse based transportation?
4. What were the benefits of steam and electric power?
5. What were the effects of the storm that hit in 1888?

Map skills: Look at a map of New York City. Trace Broadway from the Battery to Bleecker Street. Locate the Brooklyn Bridge and other places mentioned in this article and the one prior. Compare a street map to the New York City subway map.

Research: Erie Canal, Port of New York, Ellis Island Immigration Station, omnibuses, horsecars, cable cars, trolleys, Great White Hurricane

"Rapid Transit" by Marcia Amidon Lusted (Pages 10-11)

Vocabulary: Rapid transit, inextricable

Comprehension:

1. Why was the experimental track called the one-legged railway?
2. Describe the design of the railway?
3. How did Harvey fix the problems of cable maintenance?
4. Why did Harvey close his train line?
5. How did the rail lines impact the growth of the city?

Research: elevated railway or el, Westside and Yonkers Patent Railway, Charles T. Harvey, New York Elevated Railroad Company, existing els in New York City

"The Secret Subway" by Marcia Amidon Lusted (Pages 12-13)

Vocabulary: Pneumatic, hydraulic

Comprehension:

1. Why did Beach keep his subway secret?
2. Why didn't he build a larger system?
3. What happened to his work?

Writing Activity: Imagine you are one of the officials allowed to ride the pneumatic car. Describe the experience.

Research: Beach Pneumatic Transit, Alfred Ely Beach, pneumatic tubes

"Under Construction" by Ann-Michele Sproviero (Pages 14-18)

Vocabulary: schist

Comprehension:

1. What were some of the obstacles to beginning to build a subway?
2. Describe "cut and cover" construction.
3. What physical and geological obstacles did workers face?
4. What were some of the dangers?

Math Activities:

1. Compare the cost of a ride on opening day with what Adam paid in the first article. What is the price difference? About how many times greater is it today?
2. Estimate how many days, months, and years construction took.

Map Activity: Compare the map on page 16 to the one on pages 22-23 and a current street map. Do these lines, streets, and stations still exist?

Research: Rapid Transit Railroad Commission, William Barclay Parsons, August Belmont, Interborough Rapid Transit Company, Robert Van Wyck, "sandhogs", Brooklyn Rapid Transit, Dual Subway Contract, Brooklyn-Manhattan Transit Corporation, Independent Rapid Transit Railroad, Metropolitan Transportation Authority, subway construction methods

"The Line That Time Forgot?" by Marcia Amidon Lusted (Pages 20-21)

Comprehension:

1. Why has the Second Avenue line been delayed in the past?
2. How does the current plan hope to prevent similar delays?

Writing Activity: Write a letter to Mayor Bloomberg seeking information about the progress of the subway line.

Research: Second Avenue subway line

"Music Under the Streets" by Meryl Loonin (Pages 26-27)

Vocabulary: buskers, kora

Comprehension:

Why is there a competition to decide who may play music in the subway system?

Research: buskers, Fiorello LaGuardia, Music Under New York, Grand Central Terminal

"All Aboard! Inside NYC's Subway: An Interview with Joseph Leader" by Meg Chorlian (Pages 28-32)

Vocabulary: maintenance, infrastructure, life expectancy, capital program, resilient

Comprehension:

1. What is Joseph Leader's job?
2. What are his responsibilities?
3. What caused the problems in the Steinway Tube and how were they repaired?
4. What were the concerns around Hurricane Irene?
5. How was equipment protected?
6. What does the term flagging protection likely mean?
7. Why is water a major maintenance concern?

Math Activity: Assume Mr. Leader works only from 6:00 AM until 5:00 PM five days per week. If he spends 85% of the time at his desk, how many hours does he spend at his desk in one week?

Research: Steinway Tube

"The Reef Express" by Julia Sarcone-Roach (Page 33)

Vocabulary: Reefs, asbestos

Discussion: Was it right to change the existing underwater environment by sinking rail cars to make reefs?

Research: reefs

Activity for the Entire Issue: Research subway systems around the world and compare them to New York City's.