INTRODUCTION

The New York City Subway System: Why Was it Built?

The Metropolitan Transportation Authority (MTA for short) provides New Yorkers with a variety of ways to travel in and around the city. The MTA is responsible for the city’s subways, buses, railroads, bridges, and tunnels. In this booklet, we will learn about one specific part of this vast system—the world-famous New York City subway.

Our subway system is one of the largest in the world, with twenty-seven different train lines carrying passengers within and between Manhattan, Brooklyn, Queens, and the Bronx. To do this, the MTA uses over 6,200 subway cars and 722 miles of track. The longest ride you can take on a subway line without transferring is on the A line from 207th Street in Manhattan to Mott Avenue in Far Rockaway, Queens, a distance of 32.29 miles.

Today, most New Yorkers take for granted this fast and convenient way of traveling. But how did it all begin? Why was the subway built and how did it affect the life of the city and its people? The lessons in this booklet will explore these questions and help you discover the importance of the subway in our lives.

COVER PHOTO A postcard of the City Hall subway station, c. 1904.
Why Do We Need a Subway?

Sometimes you may hear the words “mass transit” and “rapid transit” when someone is talking about New York City’s transportation system. The words “mass” and “rapid” are keys to understanding why the subway was built. Mass transit refers to moving large numbers of people around, and rapid transit refers to getting these people where they need to go as quickly as possible.

Before the subways, people got around by walking or by taking horse-drawn vehicles. The omnibus was a car pulled by horses along the street on a fixed route for which a set fare was charged, regardless of distance. The horse railway was pulled along rails or tracks built into the street. Later, by the end of the nineteenth century, there were also bicycles, trolleys (cars that ran by cable or electricity along tracks in the street), and elevated trains (trains that ran along tracks built above the street). Trains that ran on the elevated lines, or “Els” as they were known, were first powered by steam and then later, in the 1890s, by electricity. The first elevated train went into service on July 3, 1868. It ran along Greenwich Street in Manhattan. The elevated rail system soon expanded and became the main form of rapid transit in the city along with trolleys. There were also many ferries to Queens, Staten Island, and Brooklyn, as well as New Jersey, and then in 1883 the Brooklyn Bridge opened as another way of crossing over to that city. (Brooklyn was a separate city until 1898, when the five boroughs were united to form the New York City we know today.) Freight was also moved across the bridge by horse-drawn vehicles.

The drawing on the next page is from 1883. It shows the approach to the Brooklyn Bridge as it comes into lower Manhattan. The entrance is built above the street and shows the many ways by which people could cross the bridge into Brooklyn. They could walk across, ride on horse-drawn vehicles, or take cable cars. A cable car was a car that was pulled along a track by a cable. Cable cars worked the same way as elevators, except that an elevator uses a cable to go up and down while a cable car is pulled by a cable to move forward or backward. The cable is always moving. The car has a mechanism that grabs the cable when the car needs to move. Later, the cable cars on the Brooklyn Bridge were replaced with trolleys powered by electricity.

How many ways could you get across the Brooklyn Bridge in 1883? ________________

Look at the center lane of the bridge. How did people use that lane to get to Brooklyn? ________________

What kind of vehicles used the outer lanes on either side of the bridge? ________________

Why are there two lanes for these vehicles instead of only one? ________________
Between the center lane and the outer lanes you can see a third method of transportation used on the bridge. What is it? ____________________________________________

This is soon after the opening day of the bridge in 1883. Why did they call it the New York and Brooklyn Suspension Bridge? ____________________________________________

______________________________________________________________

Look closely at the buildings in the background on the Brooklyn side. What are they? ______________

______________________________________________________________

What does this tell you about Brooklyn in 1883? ____________________________________________

______________________________________________________________

Look at the street below the bridge approach and compare it to the streets of New York today. Name two ways in which they are the same.

1. ____________________________________________

2. ____________________________________________

Name two ways in which they are different.

1. ____________________________________________

2. ____________________________________________
Now look at the photo above. It was taken in 1948, sixty-five years after the drawing was made.

What vehicles are missing? __________________________________________

What have they been replaced by? __________________________________

What early method of transportation was still in use on the bridge in 1948? (Hint: What replaced cable cars?) __________________________________________

Look at the right side of each picture. Do you think the building with the flags in the 1883 drawing is still there in 1948 but modernized a bit, or not? Support your answer with details from the two pictures.

__________________________________________________________________

How has the background changed between 1883 and 1948? (Hint: Look at the boats and the skyline in Brooklyn.) __________________________________________

__________________________________________________________________

Comparing the left side of both pictures you find the most change. Why would some people say that electricity and the invention of the electric elevator in the late nineteenth century caused this change? __________________________________________
A Growing City

At about the time that the 1883 drawing was made, the need for rapid mass transit was becoming a concern for New York City. New York was rapidly growing. Immigrants came to the city in large numbers. Some of them were fleeing persecution and poverty in their homelands. Others came because they thought America offered a more promising future for work and better living. At the same time as this mass immigration, New York was rapidly expanding as a manufacturing and commercial center. It was a place where people could find work; as business grew, so did the population. Soon there was not enough housing for everyone and people had to live crowded together.

With little room to spare, living conditions began to decline for the poorer New Yorkers. Many people lived in tenement houses, buildings that were constructed very close together and housed many families. Landlords divided up apartments and rented them out as separate homes. This meant that the rooms in the interior of the building, and the families living in them, did not get fresh air and sunlight. The buildings themselves were overcrowded, often with many family members sharing a single tiny apartment. The apartments did not usually have baths, so people often had to go to public baths to wash. There were no public parks or greenery around the tenements, so children had to play in the streets and alleys. The only people prospering from these crowded conditions were the landlords.

With everyone living so close together in unsanitary conditions, the spread of contagious diseases became a problem. Tuberculosis was especially widespread. This caused fear among wealthy New Yorkers. They were afraid that the diseases would spread to their own neighborhoods and make them sick. To stop this from happening, they began to plan ways to move the population of the city out of the crowded areas. The first attempt was to create a system of elevated trains, or “El’s.” The Els allowed people to live uptown and go to work downtown.

The table to the right compares the number of tenement houses that were in Manhattan between 1864 and 1900. It gives information about tenements in the various sections, or wards, of the city. The map on the opposite page shows where the twenty-two wards of Manhattan are located. On the map are also dotted lines. The tenement houses were located between the dotted lines and the rivers. Use the map and the highlighted part of the table to answer the following questions.

Locate Ward 11 on the map. What are its boundaries?

To the west is __________ Street.
To the north is __________ Street.
To the south is __________ Street.
To the east is the __________ River.

A COMPARATIVE TABLE OF NEW YORK'S TENEMENT HOUSES
MANHATTAN—1864 AND 1900

Table No. 2

<table>
<thead>
<tr>
<th>Wards</th>
<th>Total Number of Tenement Houses</th>
<th>Total Families in Tenement Houses</th>
</tr>
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<tr>
<td></td>
<td>1864</td>
<td>1900</td>
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<tr>
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<td>250</td>
<td>216</td>
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<tr>
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</table>

Total 15,531 | 42,700 | 27,169 | 175.5 | 110,509 | 287,461 | 177,052 | 202.8

4 LESSON I
How many tenement houses did Ward 11 have in 1864? ________________
How many families were living in the tenement houses of this ward in 1864? ________________
How many tenement houses did this ward have in 1900? ________________
Were there more or fewer tenements in 1900 than in 1864? ________________
How many more families were living there in 1900 than in 1864? ________________

Now locate Ward 12 on the map. What are its boundaries?
To the west is ________________ Drive.
Are there any streets to the North? ________________
To the south is ________________ Street.
To the east is the ________________ River.
Name a park in Ward 12 that is north of Central Park. ________________

How many tenement houses did Ward 12 have in 1864? ________________
How many tenement houses did this ward have in 1900? ________________
Were there more or fewer tenements than in 1864? ________________
Which of the wards (Ward 11 or Ward 12) had the greatest growth in population between 1864 and 1900? ________________
Why do you think this happened? ________________

What river is west of Manhattan and east of New Jersey? ________________
Today that river has a different name in honor of an English explorer who sailed under a Dutch flag.
What is it called? ________________

What island in the East River is northwest of Flushing Bay? ________________
What island is south of Ward's Island? ________________
With so much crowding and such poor living conditions, why did people continue to live in Manhattan rather than move somewhere else? In 1903 New York State officials did a survey on life in the tenement houses of New York City. Included here is part of an interview between a tenement house resident named Mrs. Miller and state officials.

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_The Chairman._ — Suppose you could get the same accommodation for $9 in Brooklyn, or in the Bronx, that you are getting here in New York for $12, would you go there?

_Mrs. Miller._ — No, sir.

_The Chairman._ — Why not?

_Mrs. Miller._ — Because my husband works away downtown, and I think he hadn’t ought to live more than half an hour or three-quarters at the most from his work. Just the same with any workman. Another thing, when you live in the suburbs of the city you have to be at your place of business at a given time. If trains or boats don’t run on time, you can’t give that excuse too often. They can get men nearer home to work for them.

_The Chairman._ — There are many parts of Brooklyn that are comparatively free from this nuisance of the air shaft, and must be as near your husband’s work as an uptown flat.

_Mrs. Miller._ — It is easy for some, but before I was married I worked, and I noticed the Brooklyn girls were often late. The trolley and bridge were often delayed. They were delayed by fogs and ice, while the girls that lived in New York generally got there.

_The Commissioner._ — If you could get to a place in Brooklyn where you could get a comfortable house and accommodations where you could get in half or three-quarters of an hour with certainty, as certain as you can be certain of getting down Third or Fourth Avenues to business, wouldn’t you prefer to live there?

_Mrs. Miller._ — Certainly.

_The Commissioner._ — And all people that you know that have lived in tenement houses would prefer it?

_Mrs. Miller._ — Yes.

_The Commissioner._ — So that it is a question of transportation?

_Mrs. Miller._ — Yes, but of course not over three-quarters of an hour. It is not everything if a man has to go to work at 7 o’clock in the morning and work until 6, to come home after 7 and dine about 8 and ready to go to bed. I don’t think that is any home life for a man.

_The Commissioner._ — But with the maximum of three-quarters of an hour they could endure it?

_Mrs. Miller._ — I should think so.

_The Commissioner._ — And if the transportation were certain and effective, they would prefer to live in those localities?

_Mrs. Miller._ — I am sure so, because it is not pleasant living in these tenements, and then when I speak of $10 and $12 rents, those are the cheapest that can be found that are habitable at all, and that $10 flat was at the top of a house, four flights of stairs.

_The Commissioner._ — So that in your opinion the thing that compels people to dwell in these tenements on the island is the lack of transportation largely?

_Mrs. Miller._ — That is it.
Mrs. Miller said that even if she could get an apartment in Brooklyn which rented for less, she still would not leave Manhattan. Why not? 

According to Mrs. Miller, what is the longest time that someone should have to take to get to work each day? 

When did girls usually stop working in 1903 and why? 

When Mrs. Miller used to work, she noticed that her co-workers who lived in Brooklyn were always late. Why were they always late? 

What were the hours people started working and stopped working in 1903? 

Would Mrs. Miller live in Brooklyn if the commute to Manhattan took less time? 

According to Mrs. Miller, what causes people to live in the tenements rather than move further away to a place that is less crowded and cleaner? 

As Mrs. Miller’s interview states, New Yorkers wanted to live within easy travel distance of their workplaces. They needed a type of rapid transportation that would let them live further away from the crowded conditions in Manhattan and still get to work on time. Although the Els proved a solution for a while, it soon became clear that the city needed a better system. This was to become a reality with the opening of the first subway line in 1904.

How many years ago was 1904? 

When were your parents born? 

How long before your parents’ birth did the first subway line open? 

The oldest person you know was born in 

How long before that year did the subway open? 
LESSON 2

Building the Subway

In 1888 Mayor Abram S. Hewitt proposed construction of a rapid transit railroad going from City Hall in lower Manhattan to the Bronx. At that time the Lower East Side of Manhattan was the most crowded place in the world. Hewitt was worried that people would leave the Lower East Side and other overcrowded tenement districts and move to Brooklyn or New Jersey. By doing that, they would be taking away customers and workers from New York City. (Remember, at that time Brooklyn was a separate city.) Hewitt was planning to create a business center in New York, which would become a leader in world commerce. According to Hewitt, a new rapid transit system would be necessary for “the future growth of this city in business, wealth, and the blessings of civilization.”

Twelve years later, in 1900, work began on building New York City’s first subway. It would cost 48 million dollars to complete. This line was called the Interborough Rapid Transit, or the IRT. The first section of the IRT opened on October 27, 1904. This section was 9.1 miles long and ran from City Hall to 145th Street in Manhattan. The fare was a nickel.

Building the subway was a hard and dangerous job. Most of the men who did this work were Italian immigrants. They came from poor rural areas in southern Italy where conditions were harsh and where there was little opportunity to earn a decent living. Many came to New York in the hope of earning a good wage and then returning to their homeland with enough money to have a better life there. They were used to hard work, and were willing and able to take on the job of digging the tunnels for the subway.

There were also a large number of Irish and African-Americans working on subway construction. Below is an excerpt from a brochure produced by the New York Transit Museum telling about African-American subway workers.

When did African-Americans begin working on subway construction? _______________________

Dr. William L. Hunter organized a group called the Longshoremen’s and Mechanics’ Association for African-American workers. Why did Dr. Hunter do this? _______________________

Why do you think African-Americans were not allowed to join most workers’ unions in New York City, but were welcomed into the job of subway construction? _______________________

African-Americans were working in subway construction from its inception in 1900. In May of that year, civil rights leader Dr. William L. Hunter extracted a promise from Alexander Ort, chairman of the Rapid Transit Commission, to hire 500 African-American workers. Hunter, a medical doctor, seems to have single-handedly organized the Longshoremen’s and Mechanics’ Association for the purpose of securing these 500 jobs. Little else is known about Hunter and his organization.

The skilled trade unions in New York City barred African-Americans from membership or segregated them into their own locals.
The men who built New York City's subways did so by digging beneath the streets, tunneling below water, and in many places blasting rock with dynamite. Digging just beneath the surface of the streets was known as "cut and cover." First, workers had to chop through the pavement and move all the pipes and cables that were underground—sewer pipes, water and gas pipes, and telephone and telegraph lines. They then dug a trench, which is where the subway line would run. To keep the trench from caving in, they built walls of steel and concrete and then built a concrete roof on top, which was supported by steel beams. The pipes and cables were replaced over or around the trench and covered with soil and rock. Finally, the street was rebuilt.

In some places in the city, the workers were faced with solid rock. Here they had to drill holes in the rock and fill them with dynamite. Warning bells would tell the workers when the explosives were about to go off so that they could get out of the way.

The workers who dug tunnels underwater, or through soft sand and mud, were known as "sandhogs." They often tunneled underground using large cylinders, called shields, made of steel and cast-iron. Of all the subway builders, these men faced the most danger. Not only did they have to use explosives, they also had another concern to be aware of: In the tunnels, air was pumped in at great pressure to keep water from flowing in. The air pressing on the workers' bodies was much more powerful than normal air pressure. If the workers came back up to regular air pressure too quickly, air bubbles would form in their blood and they could get very sick or even die. This condition was called "the bends." It had first been discovered when construction workers were building the support columns for the Brooklyn Bridge. Special chambers were used by the workers to prevent the bends. Before coming back up to the surface, the workers would sit in the chambers. Inside, the air pressure would slowly be lowered back to normal so that the workers' bodies would get used to it little by little.

Underground Manhattan

On the next page is a map showing what the earth looks like beneath the surface of Manhattan. This map also follows the route of the IRT subway in 1905 going from the Brooklyn Bridge to the Bronx. If we could have sliced Manhattan down the middle in 1905, this is what we would have seen.

The photographs below the map show different methods of building the subway. Use the map and the information from this lesson to figure out where each of the photos was taken.
Which photo shows the first stage of building the subway at 50th Street and Broadway? Photo # __________

How do you know this is the first stage of the work? _________________________________________________

Which photo shows subway workers digging just below the street at 34th Street and Park Avenue? Photo # ______________

How can you tell from the photo that they are digging just below street level? ___________________________

Which photo shows workers at 181st Street? Photo # __________________________
What do the workers have to do to build the subway in this area?

Which photo shows workers at Battery Park? (Hint: It is near water.) Photo # ____________

What are these workers called?

What words would you use to describe the work of building the subways?

Would you enjoy doing this kind of work? Why or why not?
Accidents often happened during the building of the subways. Below is an excerpt from a diary written in 1901 by William Barclay Parsons. Parsons was the chief engineer for the building of the subways.

What happened on January 15, 1901, while workers were building the subway?

Why was Parsons surprised?

What did Parsons tell McCabe to have the men do?

What do you think McCabe might have meant when he answered Parsons with “tell my brother that”?

**JANUARY 15, 1901.**

In the morning went with Rice over Craven's and Value's work. Found the iron work begun for the 60th St. Station, and concreting in progress at 67th St.

On Value's work met the two Mc Cabe's with Kinsley at 61st St., where the tunnel caved in. A crater was showing in the surface of the street about 10 or 12 ft. in diameter, where they said a settlement had occurred 4 or 5 ft. in depth. Found all work at the heading stopped. McCabe told me that they had decided to seek an open cut through soft ground. To this I said nothing, but told McCabe I was surprised that the work had stopped in the tunnel—that they ought to put their men on & once, taking the bench out and trimming the tunnel to the full section; that such work would have to be done anyway and that there was no use in delaying. Colonel Mc Cabe said "tell my brother that," and so I repeated it to the other Mc Cabe. Apparently, there had been some friction between the two, but before I left they agreed that that was the proper course to pursue and that they would put on a double shift & once.

At 110th St. found the base stone being set. Saw Périne and urged on both Périne and Value the necessity of getting steel up without delay. Found a large amount of waterproofing exposed without the top concrete, the cause being that they were out of gravel. Suggested to Value that they should lay a layer of 5 to 1 mortar and go ahead with the
FOUR HURT IN AN EXPLOSION.

Escaping Gas Ignites in a Section of the Rapid Transit Tunnel Excavation.

Four men were seriously burned and otherwise injured by an explosion of gas which occurred late last night in the excavation for the rapid transit tunnel in Fourth Avenue, near Twenty-second Street.

The injured are:

EDWARD SHERIDAN, 30 years old, 204 East One Hundred and Twenty-sixth Street. Burned about face and hands; hair burned from head and right bristles.

FELIX MCCABE, 22 years old, 204 East One Hundred and Twenty-sixth Street. Burned about face and hands. Taken to hospital unconscious.

JOHN CAMPFIELD, 20 years old, 529 Canali Street. Burned about face and hands.

JOHN TYNAN, 35 years old, 177 Fifty-first Street, Brooklyn. Hands and face badly burned. Eyebrows scorched.

The injured were taken to Bellevue Hospital by Ambulance Surgeons Donnelly and McDonald.

At the place where the explosion occurred the excavation was about twenty feet deep. Two shifts are employed to hurry the work along. The night shift numbers twenty-five men, who work in gangs of five men each under the foremanship of Michael Nolan.

The four men who were injured, with another man who happened to be in another portion of the excavation, were at work near Twenty-second Street, when there was a loud report, and a sheet of fire descended into the pit and another sheet rose into the air. The avenue was brilliantly lighted for several blocks, and in a few minutes the excavation was lined with anxious onlookers, who asked about the men at work. Some laborers descended into the pit and brought up the four men.

According to the police, a large gas pipe was held in place in the excavation by stays. Running along the side of the pipe is an electric wire used to furnish the workmen in the tunnel with light. It is believed that the wire became worn and ignited the escaping gas from the pipe, causing the explosion.

The reserves from the East Twenty-second Street Station were summoned, but their services were not needed except to prevent the crowd from entering down the sides of the excavation.

It was feared that a large number of men had been injured, but this proved to be untrue. A large water pipe that lay near the gas pipe was not injured.

Every day subway builders faced the dangers of cave-ins and other accidents. Sometimes men were badly injured or killed. This 1901 article tells about four men who were injured when a gas pipe blew up during construction of a subway tunnel.

Where did the explosion take place? ______________

(Note: The avenue mentioned in the article is now called Park Avenue South.)

What kind of injuries did the men suffer? ______________

What was the average age of the workers who were hurt? ______________

What is your guess about the relationship between Sheridan and McCabe? ______________

Where were the injured men taken? ______________

Using your body as a measuring stick, how many of you would fit in the excavation if you could stand on your own shoulders again and again? (Hint: First round off your height to the nearest foot.)

In your own words, describe what happened the moment the pipe exploded. ________________

How did the four injured men get out of the pit they were digging? ________________

Have you ever had an accident when you were at home or at school? Describe what happened and who helped you. ________________
The building of subway and elevated lines to Brooklyn, Queens, and the Bronx meant that people could live in those boroughs and still go to work and play in Manhattan. The first subway, the IRT, originally ran in Manhattan when it opened on October 27, 1904. The IRT expanded its service to the Bronx in 1905, to Brooklyn in 1908, and then to Queens in 1915. Also in 1915, another subway system began operating. It was the Brooklyn Rapid Transit Company, or the BRT, and it offered subway service between Brooklyn and Manhattan as well as service in Queens. Since these two subway lines were run by different companies, riders had to pay a separate fare for each. There was no free transfer between trains. This was known as the "dual system." ("Dual" means two and refers to the two companies.) The one-way fare for a ride on each system cost a nickel.

Janet Lieberman, a retired professor at LaGuardia Community College/CUNY, remembers when she was a girl riding the subways in the 1930s and 40s. With the expansion of the subway into the outer boroughs, Janet’s family was able to buy a house in Brooklyn and her father was still able to travel to his job in Manhattan each day. This interview of Janet was conducted by Richard K. Lieberman (no relation) and staff at the La Guardia and Wagner Archives on March 9, 2006.

**RKL:** Janet, you were saying that the subway had an impact on your father’s life, that...it’s Brooklyn, it’s the 1920s. Tell us what the impact was. Why you were able to move?

**JL:** Well, the impact was that when the subway ran from Manhattan to Brooklyn, particularly to the section of Brooklyn called Flatbush [the subway went to Flatbush by 1920]. My parents were able to buy a house in Flatbush which was further up and nicer than where we had been living in Borough Park. In those days it was comparable to the suburbs. You had a front lawn and a back lawn and two floors, three bathrooms, and you could only get that in the less populated neighborhoods and it was more expensive than downtown Brooklyn. But the only reason we could be there was he could get to work from that neighborhood into 35th Street and Broadway, which was the garment center of New York in those days and people who were in business making clothes. All of the clothing business was centered around 35th Street and Broadway.

**RKL:** What was the house like in Borough Park? Was it an apartment building or...?

**JL:** It was a private house, but it was old, and the neighborhood was not as good, and there were no places for children to play, and we didn’t have a front yard or a back yard. It was not nice, more crowded, and it was also a neighborhood of very religious Jews, and my parents were somewhat liberated from the orthodoxy and wanted to live in more of a mixed neighborhood. They thought that was good for us.

**RKL:** And what was the subway line? What was it called?

**JL:** It was the BMT. The station was Avenue J. It was a raised station, you had to walk up the stairs to go, and the fare was a nickel. Some of my friends were able to go to school on the subway, my parents were more protective and I was driven to school. So I didn’t go to school on the subway, but it went...
RKL: This was in the 30s you were telling us?

JL: Yes, I was born in 1921 and my early memories of the subways was when I was about ten or eleven.

LS: Why did you go to Manhattan?

JL: Well, the pattern for adolescent girls, adolescent Jewish girls, of the middle class was to take the subway to Times Square and to go to the theater on a Saturday afternoon and we would take our allowance—there were three or four of us—and we would go into Times Square, and that was what we did as entertainment, and that was how girls got together and had a good time.

RKL: Did your mother take the subway too?

JL: Not so much. In the beginning we had a Hupmobile. And, that was the name of a car; I guess today it would be in the Buick category, it was not the cheapest, but the next level car. My mother drove. Badly! [Laughs] ... And she liked to drive, so she would drive to wherever she would want to go. And she didn’t have much opportunity, she took it when she needed to, but she really didn’t use it much, because her life was situated in the neighborhood. You went marketing, cooked, prepared food, and took care of the children, so there wasn’t any need, but my father commuted back and forth everyday, and I remember his telling me about being what today is called a straphanger. They used to have [leather] straps from the top of the subway, and when you had to stand up, because the subway moved kind of violently from side to side, you had to hold onto the strap. There were no poles like that are now, but there were straps and people who went on the subway and it was very crowded, it was commuting time. People would go to work at 8:00 in the morning and come home at 5 and he used to come home pretty tired from standing up all that way and holding onto the strap.

LS: How long was the commute?

JL: Forty minutes. Ah ... and it was hard after a day’s work. He worked hard, then he got onto the subway and everywhere. And it stopped about eight or nine blocks from home, so we could walk from the subway to our house.

RKL: So your father would walk seven blocks from the J [Avenue J Station]?

JL: To home, yes, and when I came of age, I was able to walk that distance and then go upstairs and take the subway into Manhattan. It cost a nickel, it was very safe. I started to go when I was maybe eleven or twelve years old, all alone. I came from a fairly protective household, so you know that if I went [laughs], everybody else could go.

A home similar to one in Janet's Flatbush neighborhood in the 1930s.

A movie theater in Times Square.
he expressed the fact that he was tired from standing, from standing up and holding on, it was hard.

**RKL:** Did you ever go the other way, on the subway?

**JL:** To Coney Island, yes, yes, we went to Coney Island, sure. Well, you get off the subway and you go the other way, and there’s the beach, there’s Nathan’s, and you get a hot dog for a nickel [laughs] and you have all the rides, and that was more or less in the light spring when the weather was good. And you could walk along the boardwalk, and that was fun, and we could do that, and that was fairly safe according to our parents that we could do that, and we did do that. That was interesting as I think about that now, that was the thing we did when we were dating early. When you went with boys you went to Coney Island [laughs]. Don’t ask me why, I don’t know, but boys and girls would go together to Coney Island, where they wouldn’t go together today.

**RKL:** Do you remember your impressions coming, you know, a twelve-year-old, thirteen-year-old coming from Avenue J and merging into Manhattan?

**JL:** Yes, I do, that was really exciting, that’s why you went. You come up in Times Square, and we lived in Flatbush, it was like the country is now. There were houses in rows, front yards and back yards, and it was generally quiet, and . . . people pretty much knew each other. On the street here you come up, the street was streaming with people, which we didn’t have in Brooklyn at all. And all these lights with the signs, and that was very exciting, and the different kinds of people was also very exciting. We lived in somewhat segregated neighborhoods. In my neighborhood for instance, there was no racial integration at all. There were low and middle class: Jewish and Italian people. All white, and pretty much all of the same economic status. And here you came out, and I particularly remember during different times when . . . you could see soldiers and sailors and people from other countries and stuff. That was all very exciting.

When Janet Lieberman was a girl her family moved from Borough Park to Flatbush, two neighborhoods in different parts of Brooklyn. What was the main reason they were able to do this? ________________

Give two other reasons why Janet’s parents wanted to move the family from Borough Park to Flatbush.

1. ________________

2. ________________

What subway did Janet’s father take to work every day? ________________

When Janet was old enough to take the subway, where did she go and why? ________________
Give two reasons why Janet's mother did not ride the subways very often.

1. _________________________
2. _________________________

Why was Janet's father always tired when he got home from work? _________________________

Where did boys and girls go for dates when Janet was a girl? _________________________

Why was it exciting for Janet to come up out of the subway in Times Square? _________________________

---

**JANET LIEBERMAN**
June 12, 2006

Dear Richard,

I have read the transcript of my interview, and I would like to clarify the importance of having the subway extension in the lives of our family. Having the BMT run to the Flatbush section of Brooklyn affected our lives in a number of ways. It enabled us to live in a nicer neighborhood, because my father could live there and still get to work in mid-Manhattan. Later on, as teenagers, we could safely travel to downtown Brooklyn and to Times Square. Having the subway changed our life style from being neighborhood to being part of the bigger New York City life.

Janet

---

To the left is a letter Janet wrote about her interview. Read it to answer the following questions.

What is the main point Janet is making about how the subway affected her and her family? _________________________

Have you ever moved, and if so, how did that move affect you? _________________________
Janet talks about how much fun it was for her and her friends to go to the theater in Manhattan. These two maps show the routes of the BRT (later called the BMT) in 1913 and in 1925. In 1913, the city signed contracts that allowed the IRT and the BMT to build more subway lines. By the time Janet was going to the theater, there were enough lines run by both companies so that it was easy for people to travel into Manhattan from the outer boroughs. Look first at the 1913 map above.

Were passengers who traveled on the subway in 1913 able to go directly to Times Square? Explain your answer.

____________________________________

Were there any subways in Queens at this time?  

____________________________________
Now look at the 1925 map above. The routes shown were still the same in the 1930s when Janet was riding the subway. When Janet traveled to Manhattan, she got on the subway at Avenue J. Find the Avenue J subway stop on the map. In what direction did Janet have to travel to get to Manhattan?

**Circle One.** North  South  East  West  Northeast  Northwest  Southeast  Southwest

What river did she have to cross? _______________________________________

Once Janet’s train entered Manhattan, she could continue riding up to Times Square. Locate Times Square on the map. It is south of which park? _______________________________________

In 1925, the BMT went as far north as which street in Manhattan? _______________________________________

Find the closest stop near you. Could you get to Coney Island? How? ______________________________________
LESSON 4

The Expanding City: The Case of Queens

The subway system encouraged the growth of the boroughs outside Manhattan. With the subway for transportation, people were able to live in one place and travel to another for work. (Remember the goal of the subway from Lesson 1.) Most businesses were located in Manhattan, so people could live in another borough and still travel easily to Manhattan for work. But subway lines in the outer boroughs also allowed something new to happen—now that transportation was available, businesses were able to open in places like Queens that were all once swamp or farmland. People had much more of a choice in where they could live, travel, and work.

Below are tables showing the population of the boroughs of New York City between 1900 and 2000. As you look at them, keep in mind that between 1908 and 1925, subway service expanded to the Bronx, Brooklyn, and Queens.

Which borough had the largest population in 1900? _________________________

In 1930, were there more or fewer people living in Manhattan than in 1910? _________________________

In 1930, how many more people were living in the Bronx than had been living there in 1910? _________________________

How many more were living in Brooklyn in 1930 than in 1920? _________________________

How many more were living in Queens in 1920 than in 1910? _________________________

Between 1920 and 1930, which borough had the greatest rise in population? _________________________

Why do you think this happened? _________________________

Which borough had a decrease in population between those dates? _________________________

In 2000, which borough had the greatest population? __________

Which had the lowest? __________

Why do you think this borough might have the lowest population? _________________________

<p>| Population of New York City by Borough, 1900–1990 |</p>
<table>
<thead>
<tr>
<th>Manhattan</th>
<th>Bronx</th>
<th>Brooklyn</th>
<th>Queens</th>
<th>Staten Island</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>1,830,093</td>
<td>200,507</td>
<td>1,166,182</td>
<td>154,999</td>
<td>57,021</td>
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<tr>
<td>1910</td>
<td>2,311,542</td>
<td>450,980</td>
<td>1,634,313</td>
<td>284,241</td>
<td>83,969</td>
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<tr>
<td>1920</td>
<td>2,884,103</td>
<td>732,016</td>
<td>2,018,316</td>
<td>495,021</td>
<td>116,151</td>
</tr>
<tr>
<td>1930</td>
<td>1,867,312</td>
<td>1,263,258</td>
<td>1,660,401</td>
<td>1,079,219</td>
<td>118,546</td>
</tr>
<tr>
<td>1940</td>
<td>1,389,934</td>
<td>1,594,211</td>
<td>2,018,481</td>
<td>1,697,314</td>
<td>174,441</td>
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<tr>
<td>1950</td>
<td>1,960,101</td>
<td>1,415,277</td>
<td>2,178,175</td>
<td>1,510,849</td>
<td>191,151</td>
</tr>
<tr>
<td>1960</td>
<td>1,698,281</td>
<td>1,424,811</td>
<td>1,527,319</td>
<td>1,809,178</td>
<td>231,901</td>
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<tr>
<td>1970</td>
<td>1,199,211</td>
<td>1,471,701</td>
<td>1,602,012</td>
<td>1,685,473</td>
<td>191,441</td>
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<td>1980</td>
<td>1,428,185</td>
<td>1,168,972</td>
<td>1,230,916</td>
<td>1,891,325</td>
<td>312,121</td>
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<tr>
<td>1990</td>
<td>1,487,510</td>
<td>1,203,789</td>
<td>1,300,064</td>
<td>1,951,158</td>
<td>378,977</td>
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</table>

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<tr>
<th>Geographic Area</th>
<th>Number</th>
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<tr>
<td>City and Borough</td>
<td>2000</td>
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<tr>
<td>New York City</td>
<td>8,006,275</td>
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<tr>
<td>Bronx</td>
<td>1,332,583</td>
</tr>
<tr>
<td>Brooklyn</td>
<td>2,655,326</td>
</tr>
<tr>
<td>Manhattan</td>
<td>1,537,155</td>
</tr>
<tr>
<td>Queens</td>
<td>2,229,375</td>
</tr>
<tr>
<td>Staten Island</td>
<td>463,728</td>
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</tbody>
</table>

20 LESSON 4
Why is Manhattan the only borough whose population has generally gone down over the decades?

Locate the borough you live in. In which decade did it have its largest growth in numbers?

The opening of the Queensborough Bridge in 1909, and then the subway in Queens in 1915 had a tremendous effect on the economy of this borough. Businesses grew and prospered first in Long Island City, the neighborhood just across the East River from Manhattan. The location of Long Island City made it possible to move people and goods easily. Not only was it linked to Manhattan by bridge and by rail, it also had two commercial waterways by which manufactured goods could be moved—the East River and Newtown Creek. As a result, the neighborhood had a manufacturing boom. Most of the large warehouses and factories were built in an area known as Degnon Terminal, named after William Degnon. This was the center of the neighborhood’s industry.

The first tunnel connecting Manhattan with Long Island City was begun in 1892. This tunnel is known as the Steinway-Belmont Tunnel, named after the two businessmen who helped pay for its construction—William Steinway and August Belmont. The tunnel, dug beneath the East River, was at first going to be for trolley service between Grand Central Station in Manhattan and the Long Island Railroad in Long Island City. Digging the tunnel was dangerous—on December 28, 1892, an explosion killed five people and injured twenty. The tunnel was finally completed in 1907. By then, the Interborough Rapid Transit Company had taken over and the tunnel was used for the IRT Flushing subway service (what we call today the 7 train).

On the next page are three photos showing the area of Queens where the IRT elevated subway (the 7 train) was built. This area is now Queens Boulevard and 33rd Street in Long Island City. One photo was taken in 1903, another in 1917, and the third in 1997. Number the photos and put them in the correct order that shows how the IRT was built. After doing so, answer the questions below.

How would you describe the way this part of Queens looked in 1903, before construction began for the IRT?

________________________________________________________

Look at the land surrounding the tracks in the 1917 photo. How would you describe the neighborhood?

________________________________________________________

How would you describe the neighborhood in the 1997 photo?

________________________________________________________

What changes have taken place between 1917 and 1997 and why?

________________________________________________________
By 1912, there were 300 companies in Long Island City employing 16,000 workers. These companies made all kinds of products, from bread and automobiles to chewing gum and batteries. By the 1920s, after the subway had opened, there were even more factories. Today, Long Island City continues to be an important center of business in Queens. Some of the factories, however, are now used for other purposes. The Silvercup Bakery, for example, became a place where television and movies are made and is now called the Silvercup Studios. Other factory buildings, like the White Motor Company and the Equitable Bag Company, are now used as places of learning. They include the buildings of LaGuardia Community College, where the LaGuardia and Wagner Archives is located.

Below is a page from a booklet called “Progress of Queens.” It was written in 1912 to encourage people to move their businesses and their families to Queens. This booklet lists some of the companies that did business in Long Island City in 1912.

---

Name two companies in Long Island City that made food in 1912.
1. Sunshine Biscuit Company
2. ________

Name two companies that supplied goods to make clothing.
1. ________
2. ________

Which company made products for musicians?

Besides companies, this booklet also lets people know that Queens is a good place to live. How can you tell this by looking at the page?

---

Charles Zajic
Carpenter and Builder
Manufacturer of Interior Wood-Work Store and Office Furniture
Office and Factory: 1143-1145 40th Ave., Astoria, N.Y.

---

THE EXPANDING CITY: THE CASE OF QUEENS 23
Jerry Zajic grew up in Astoria during the 1930s. His great-uncle owned the carpentry business advertised in the 1912 ad on the previous page. Jerry has written essays for his grandchildren about his early life in Astoria so that they would know what Queens was like when he was growing up. Like Janet Lieberman (see Lesson 3), Jerry used to ride the subways when he was a boy. On the opposite page is an excerpt from one of his essays, which takes us on a 1930s ride from Astoria to Coney Island. At that time, the subway cars of the Astoria line were more old-fashioned, and passengers could only board on either end of the train. The ride that Jerry describes here begins at the Ditmars Avenue Station, the first stop on the line. After reading the essay, answer the questions below.

Go back to Lesson 3 and look at the 1925 subway map on page 19. Locate the Ditmars Avenue Station in Astoria. How many stops did Jerry and his friends have to travel before they changed trains? ________

At Queensboro Plaza, Jerry was no longer in Astoria; he was now in the neighborhood of ________

According to Jerry’s story, what was the name of the tunnel that his train passed through from Queens to Manhattan? __________________________

At which station did Jerry have to change trains again to go to Brooklyn? __________________________

What river did Jerry’s train have to cross to get to Brooklyn from Manhattan? __________________________

The shores of Coney Island run along two bodies of water. What are they? (Look at the 1925 map to find out.) __________________________

Imagine you were a child in the 1930s riding the subway with Jerry to Coney Island. What part of the trip do you think is the most exciting? Why? __________________________

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________
The station is high above the ground, so from the street level we climb the long flight of stairs to where the change booth and turnstile are. Standing next to the turnstile is the change booth attendant, who greets us with a smile and informs us that the train is just about ready to leave. . . . We deposit our nickels into the turnstile and head for the stairs to the station. The train is waiting, and as we board the last car the conductor closes the gate behind us.

As we walk through the last car toward the rear of the platform, the train gently pulls out of the Ditmars Station. . . . Standing on that back platform lets you see the vistas of Astoria pass by. Some of the apartment house windows that we pass are on the same height level as our train. Now and then we pass someone leaning out the apartment window, and some folks even wave to us. . . . The scenery and stations pass by rather quickly, and before we realize it we are making a right big angle into the Queens Plaza station. Some people call it Queensboro Plaza station. Our open-air ride is over, because we now have to change trains.

At Queens Plaza there are two stations standing side by side. To cross over from one station to the other we have to go downstairs to the walkway that is under the station, but above the street and auto traffic. Then we go upstairs to the other station where the Interborough Rapid Transit (IRT) system train tracks run. . . . There waiting for us is a train that will take us to Times Square.

No sooner are we seated than the train automatically closes its doors and we depart from Queens Plaza—but wait, what is that aroma? Ah, yes, the Silvercup Bread Company, which is located right there at Queens Plaza, is busy baking tomorrow’s bread for us. Leaving Queens Plaza, the IRT train makes a gradual but screechy right-angle turn as it heads for the Jackson Square station. . . . Clickety-clack and we are off again onto yet another right-angle turn that brings us almost into the Queens railroad yards.

When we boarded the train we headed for the first car and the forward-looking glass door. Standing at this door we feel as if we are the train’s engineers. As we plunge headlong into the tunnel’s open jaws of darkness, we actually are entering what at times was called the Steinway Tunnel or Belmont Tunnel. . . . Deeper and deeper the tunnel goes, because to get to Manhattan the train must go under the East River. Before long, the train is now pitched in the upward direction as the train makes its way to its first stop in Manhattan, which is Grand Central Station. People exit the train while others board; this is repeated again at Fifth Avenue and finally at the train’s last stop at Forty-Second Street or, as the world knows it, Times Square. We again have to get off and change trains to ride to Brooklyn.

At the Times Square station we go through a maze of passageways to get to our platform. . . . People are rushing in all directions to catch a train. . . . Nobody bothers us kids as we follow the signs for the train to Coney Island. . . . The train arrives at the station, announcing its arrival with screeches as it stops. . . . As we expected, a bit of pushing occurs as the masses all try to get into our subway car, or so it appears that way. We hold hands tightly and the human wave propels us aboard. As the doors close, we decide to let the older passengers sit while we each grab hold of a pole. As the subway makes its way along dark underground tracks, no one pays much attention to anything except their newspaper, briefcase, or shopping packages. Some passengers have their eyes closed catching a few Z’s.

The subway car crowd starts to dwindle as we ride through Lower Manhattan and the Business District. Above us stand huge skyscrapers, but we see none of them; we’re lower than the deepest basement. . . . Suddenly, as we approach Brooklyn, the subway gives us a most pleasant surprise. It climbs its way from below ground onto elevated tracks across the East River in full view of the stately Brooklyn Bridge. Something magical happens in our subway car as it crosses the bridge and the bright sunlight streaks in. All of the passengers, even those I thought were asleep, look up to enjoy the view as the golden sun explodes over the East River against a panoramic scene. On our left is the Brooklyn Navy Yard with its mighty warships. Behind us is a postal card view of Manhattan. Off to our right is New York Harbor, and with a little imagination and real good “peepers” we can see the beautiful Statue of Liberty.

Once over the river, our subway car takes another downward slide into a tunnel. The passengers aboard our subway car resume their underground activity of reading their newspaper, catching those Z’s, or simply getting lost in their thoughts. We peer out the front window as the white and green control lights zip by. The stations pass quickly and it isn’t very long afterwards that we resurface for the last time onto elevated tracks. We are now riding over the Wetlands of Brooklyn and our destination is quickly approaching.

There it is—the Cyclone racer that has been thrilling roller-coaster riders since it opened in 1927. The Steeplechase Pavilion, with its Outdoor Racetrack on which one could glide, bounce, roll, and get thrilled as you ride upon your metal stallion and race around the Pavilion. Which one of us will be able to walk through the giant Revolving Barrel of Laughs? As our subway train rolls into the station and we disembark, suddenly we are hungry—and why not, as the aroma of Nathan’s Famous Frankfurters fills the air?
It is true that the growth of the subway made neighborhoods in Manhattan less crowded by allowing people to make their homes in other areas of the city. However, some areas of Manhattan are even more crowded than before when it comes to working. Think of how packed the subway cars and stations are during rush hour. The subway system was planned so that people would spread out in the evening when they went home after a day’s work, and then cram back together in the morning to go to their jobs. So, while the subway solved one problem of overcrowding, it created another.

This started to become especially clear when the city’s early skyscrapers, like the Woolworth Building and the Empire State Building, were being built. The earlier invention of the elevator made this possible. Elevators allowed people to travel upwards within their workplaces—they are the “mass transit for buildings,” as historian Steven Levine points out. These great office buildings, with hundreds of rooms on each floor, could hold more workers than ever before. So more and more people traveled each day to work in these centers of business, and the type of transportation most of them took was the subway. Today, this situation remains the same.
April 21, 1903.

My dear Mr. Orr:-

I am very glad that you have written me your letter of the 20th inst.

Yesterday, I had a long talk with Mr. Bryan.

We are quite alive to some irregularities in the Subway service. One of our chief difficulties, I fear, is that the crowds are very unruly. I travel on the Subway constantly myself, and it is quite apparent that the doors of the wooden cars are not wide enough, and this makes it impossible to load and unload rapidly, causing the trains to make longer stops than they should during the crowded hours. We have authorized the widening of these doors, and our shops will do this as fast as it will be possible to withdraw cars temporarily from the service. It was one of those errors in construction, the faultiness of which nothing but experience would show. The matter of the type of cars, and every detail, as you know, was the subject of exhaustive study.

In addition to this, Mr. Hedley, our General Manager, was on the verge of breaking down, and had to go away, after his arduous labors in connection with the

August Belmont, Jr. was born in New York in 1851. Belmont worked as a banker in his father's business and became head of the Belmont banking house when his father died in 1890. He was one of the wealthiest people in New York. Like his father, August Belmont was a great fan of horse racing.

Above is the first page of a letter written in 1905 by August Belmont to Alexander Orr. Belmont was owner of the IRT and Orr was head of the Rapid Transit Commission.

According to Belmont, what was one of the worst problems on the subway? ____________________________

What was it about the subway cars that caused this problem? ____________________________

What does Belmont suggest as a solution to the problem? ____________________________

Have you ever had a problem with the train doors? If so, describe what happened. ____________________________
One of the reasons the subway was built was because New Yorkers in the late 1800s were afraid that disease would spread in the overcrowded city. Yet today there is still the possibility of germs floating in the air of a crowded subway car. Besides disease, safety issues such as pushing and door-holding have also always been a problem. These subway posters are from the 1950s.

Who are these posters speaking to? ________________________________

List three of the safety issues shown in these posters.

1. ________________________________

2. ________________________________

3. ________________________________

In the posters, who are causing the problems? Is it men, women, or children? ________________________________

Do we still have these problems today? ________________________________
Are there problems we have today that are not shown in the posters? If so, which ones?

Which is the one problem shown that concerns you the most and why?

In general, what are these posters saying to those who read them?

According to the posters, who is responsible for safety on the subways?
In the space below, draw your own poster about a subway safety issue you are concerned about.

Using the information from this lesson, fill in the words to complete the sentences. In the space provided below, write down the letters that are in the circles. Then reassemble the circled letters to discover the words that complete the title of the artwork.

1. With the subways, people could work in Manhattan and live in other ____ ____ ____ ____ ____ _____.
   (ourobsgh)

2. However, during working hours, Manhattan was, and is, still very ____ ____ ____ ____ _____.
   (dredwoc)

3. ____ ____ ____ ____ ____ ____ ____ ____ allowed many more people to work in a single area than ever before.
   (sSrerskapyrc)

4. Skyscrapers could not exist without the invention of the ____ ____ ____ ____ ____ _____.
   (tvaleero)

5. New Yorkers spread out in the evenings and ____ ____ ____ back into Manhattan in the mornings.
   (marc)

6. Crowding on the subway can cause ____ ____ ____ ____ ____ ____ to spread.
   (seseaid)

7. ____ ____ ____ ____ ____ ____ is another problem on crowded subways.
   (uPhsgni)

8. ____ ____ ____ ____ ____ ____ issues on the subway are still a concern today.
   (faStey)

   “____ ____ ____ ____ ____ ____”

   By Bernard Brussel-Smith, 1940

   (Answers on page 40)
LESSON 6

Keeping it Going

The New York City subway system has thousands of employees whose job it is to make sure millions of riders are moved quickly and safely throughout the city each day. When we think of subway employees, we usually think of the people we see each day—the conductor and train operator, the station agents, and the cleaners who sweep the subway system going. There are train mechanics and technicians who keep the trains in working order. There are track workers who make sure the tracks are safe and in good working condition. There are people who check to see that the signals are working properly and others who work in the control towers and control the routes of the trains. There are also workers who must make sure the lighting is working in the stations and tunnels, and stairways, and tunnels. These repairers, cement workers, and painters.

Each of these people plays an important role in the safe and smooth running of the New York City subway system. Although their jobs could not run. Many subway employees of the MTA work together under a union, which includes employees of MTA bus services, as well. Their union is called the Transport Workers Union. Workers throughout the country and in many different kinds of jobs belong to unions. Unions protect the rights of workers. Union leaders bargain with managers to decide on issues such as pay raises, health benefits, and proper working conditions. These decisions are written down in a document called a contract. There are times when a union and a company's management are unable to agree. When this happens, union workers may go on strike. This means that union employees stop working at the same time until an agreement is reached.

New Yorkers depend on the subway and its many employees to get to work and school every day, so when there is a transit strike, it affects us all. For this reason, a law was passed in 1967 that forbids transit workers to go on strike. This is known as the Taylor Law, named for

THE NEW YORK TIMES

Uniquely Aggrieved, and Empowered, Union Digs in Again

By SEWELL CHAN

In its standoff with the Metropolitan Transportation Authority, the Transport Workers Union has highlighted once again its ability to upset millions of the city's subway and bus riders. It is an enduring tradition of militancy that dates to the union's creation during the Great Depression.

Indeed, in New York, a city that has weathered major strikes by sanitation workers, drawbridge operators, teachers and social workers, no union seems able to unsettle residents quite like the one that moves the subways and buses.

Members of T.W.U. Local 100, which represents the 33,700 transit workers whose three-year contract expired on Friday, often invoke two motions: "We Move New York" and "United, Invincible." Both speak to the union's confidence in its ability to shut down the city, as it has done twice before, in 1966 and 1980.

"The police officers and firefighters have such an ability to do damage that it's very difficult to conceive of a strike," said Robert W. Liu, who was the city's director of labor relations from 1983 to 1989. "A transit strike, from the point of view of union power, is almost perfect. It is not absolutely devastating a life-or-death way, but on the other hand is incredibly potent as a weapon."

Transit workers are more militant because they are conscious of that power, but the very conditions of their job also grind them down and generate resentment, said Marian Swerdlow, a sociologist and the author of "Underground Woman," a memoir of her four years as a subway conductor.

"The working conditions are more physically onerous, the treatment by managers more disrespectful, and the abuse from the public more hateful, than any other group of public workers in the city experiences," Dr. Swerdlow said.

Those conditions, some say, also explain how even as the face of the union has changed - from that of the Irish and other European workers who once dominated the workforce to that of the blacks, Latinos, and Asian Americans who now fill its ranks - its militant posture has endured.

"Whoever it is that works as a transit worker - be it Irish, Italian, or African-Americans - they do a hard and dirty job, which is often quite dangerous and becomes visible to the public only when something goes wrong," said Robert W. Snyder, author of "Transit Talk," an oral history of subway and bus workers.

 Rogier Toussaint, the Trinidadian native who led Local 100 since 2000, echoed the views of aggrieved transit workers, past and present, during a rally yesterday afternoon outside Gov. George Pataki's office in Midtown. "When it comes to dignity and respect, transit workers are tired, tired, tired," he said.
Now that you have learned about some of the changes in mass transit ridership over time, use the chart below to plot a graph showing those changes. (Be sure to round off the number of riders to the nearest 50.)

**S U B W A Y  R I D E R S H I P**

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Glossary

activist someone who takes action to oppose issues he or she believes are unfair.
approach on a bridge, the road or ramp leading to the entrance.
cable a strong wire rope or metal chain used to control a mechanism.
chamber an enclosed space.
commerce the buying and selling of goods on a large scale.
commute to travel back and forth regularly.
contagious spreading from one person to another.
contract a written agreement.
cylinder a circular tube.
decline to become less.
economy the making, distributing, and use of goods and services.
excavation a pit or trench dug in the ground.
excerpt a part taken from a longer work.
expanded made larger.
fined forced to pay money as a punishment for an offense.
horse railway a public vehicle with a carriage pulled by horses along railroad tracks on a city street.
industry business; manufacturing activity.
interior inside.
issues matters for discussion.
manufacturing to make from raw materials by hand or by machinery.
omnibus a car pulled by horses along the street on a fixed route for a single ticket price, regardless of distance.
persecution the act of causing someone to suffer because of his or her beliefs.
recession a period of reduced economic activity.
strike to stop work in order to force an employer to fulfill demands.
survey a report based on information that is collected by observation or by questioning people.
Taylor Law a New York State law making it illegal for some public employees, like transit workers, to go on strike.
trench a long narrow cut in the ground, such as a ditch.
tuberculosis a contagious and sometimes fatal disease of the lungs.
union an organization of workers formed in order to advance its members' wages, benefits, and working conditions.
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For more information on the development of public transportation in New York, visit the New York Transit Museum, or www.transitmuseumeducation.org.


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This curriculum and a teacher’s guide will soon be available on our website at www.laguardiawagnerarchive.lagcc.cuny.edu. Click on “Fourth Grade Curriculum” for these and other online publications.

Answers for page 30
**BUSHWICK-ABERDEEN STATION**

**OPENED** December 14, 1928  
**LINE** BMT Canarsie  
**WHERE** Bushwick, Brooklyn

- Bushwick was one of the original towns that made up Kings County in the 1600s. It was mostly farmland until the late 1800s.  
- Its Dutch name, Boswijk, means “heavy woods.”  
- When Peter Stuyvesant drew up the town charter in 1661, one of its signers was a free black man named Francisco de Niger.

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**ASTOR PLACE STATION**

**OPENED** October 27, 1904  
**LINE** IRT East Side  
**WHERE** East Village, Manhattan

- Astor Place was named after John Jacob Astor. Astor made his first fortune as a fur trader in beaver pelts.  
- He made so much money buying and selling land in New York that he is quoted as saying, “Could I begin life again, knowing what I now know, and had money to invest, I would buy every foot of land on the island of Manhattan.”

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**FULTON STREET STATION**

**OPENED** January 16, 1905  
**LINE** IRT East Side  
**WHERE** Manhattan (near City Hall)

- Fulton Street is named after Robert Fulton, who developed the first successful commercial steam ferry. The ferries went between Fulton Street in Manhattan and Fulton Street in Brooklyn from 1807 to 1924.  
- Fulton Street is also famous for the Fulton Fish Market, which first opened in 1822. It relocated to Hunts Point in 2005.  
- The mosaic is of the Clermont, Fulton’s first successful steamboat. The Clermont sailed up the Hudson River to Albany on April 24, 1807.

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**BROOKLYN BOROUGH HALL STATION**

**OPENED** January 9, 1908  
**LINE** Brooklyn IRT  
**WHERE** Brooklyn Heights, Brooklyn

- The building shown used to be Brooklyn’s City Hall. Brooklyn was a separate city until 1898.  
- Brooklyn Heights was Manhattan’s first suburb. Many people traveled between work and home by ferry boat, and later by mass transit.

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**CANAL STREET STATION**

**OPENED** January 5, 1918  
**LINE** BMT Broadway  
**WHERE** northern border of TriBeCa, Manhattan

- The land around modern day Canal Street once included a fresh-water pond that bubbled up from an underground spring. In 1805 it was turned into a canal with a bridge built over it on Broadway.  
- The mosaic is of the Stone Bridge Tavern, located at Canal Street and Broadway in the early 1800s.

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**137TH STREET/CITY COLLEGE**

**OPENED** October 27, 1904  
**LINE** IRT West Side  
**WHERE** Harlem, Manhattan

- While the subway tunnel at 137th Street was being dug below ground, engineers above ground were building a new campus for City College.  
- This mosaic is the seal of City College. It shows three faces representing Past, Present, and Future. A translation of the Latin—Respice, Adspice, Prospece.  
- City College moved here in 1908. It was made using some of the soft rock, called schist, which was dug from the subway tunnel.

---

**QUEENS PLAZA**

**OPENED** August 8, 1933  
**LINE** IND Queens Boulevard in Long Island City

- The clock tower in Queens Plaza was built in 1927 by the Bank of Manhattan Company. It used to be the tallest office building in Queens.  
- Long Island City developed into an industrial, commercial and financial center when the elevated train came to Queens.  
- This is where the IRT and the BMT lines meet. The IND line, where this mosaic is located, also comes through the area, but into a different station.

---

**HUNTS POINT**

**OPENED** January 7, 1919  
**LINE** IRT Pelham Line  
**WHERE** South Bronx, Bronx

- Hunts Point Avenue was named after Thomas Hunt, an original settler of 1670.  
- Hunts Point Avenue follows a trail made by Native Americans.  
- In the late 1860s, the Costello de Casanova mansion in Hunts Point was a meeting place for Cuban exiles supporting Cuba’s independence from Spain.  
- Hunts Point is now famous for the Hunts Point Market, one of the largest food distribution centers in the nation.

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**WALL STREET STATION**

**OPENED** June 12, 1905  
**LINE** IRT East Side  
**WHERE** Financial District, Manhattan

- In 1653, Peter Stuyvesant built a wooden wall in the place that is known today as Wall Street. The wall was meant to protect Dutch settlers.  
- Wall Street is still famous today as the home of the New York Stock Exchange.