



## Suggested Activities to Complete While In New York and at the NY SKYRIDE

### Activities with a Social Studies Focus

One Important Observation

New York City Streetscapes (Includes walking tour)

\* Design Your Own Section of New York City

Reading the Empire State Building

Two Looking Challenges (Includes walking tour)

New York City As the Artists See It

\* Tastes and Aromas

A Bridge to the World

\* Next Station, Bleeker Street (Includes walking tour)

Hunt for Neighborhood Treasures (Is a walking tour)



## Activities

### Get Ready! It's A Bird's Eye View of Everything!

The purpose of this activity is to enhance students' visual attention skills and visual literacy. The NY SKYRIDE will take them diving and winding through and among New York City's tallest buildings. This activity will prepare students to be aware of what they are seeing on the SKYRIDE. We don't want them to miss this opportunity to get an up-close view of things! Careful observation will give students a hint about life in the city below.

#### Activity

Before the NY SKYRIDE, have students discuss what they expect to find in Manhattan and how similar to their home community they think Manhattan will be.

Discuss the items on the list below with your students --- perhaps en-route to the NY SKYRIDE experience --- making sure it's clear what each is. These are all parts of Manhattan that students will see on the NY SKYRIDE. **Let students know that when they are on the NY SKYRIDE they should be prepared to notice as many things on this list as possible:** (The items in *italics* are for your discussion after the experience.)

Apartment buildings --- *How did you know this was an apartment building?*  
Office buildings --- *How did you know this was an office building?*  
Where in New York do you see tall buildings?  
Where in New York do you see shorter buildings?  
Buildings that look like they might have offices **and** apartments  
Buildings with setbacks  
Zagurats  
Old buildings  
New buildings  
Rivers --- *How many did you see?*  
The harbor  
Bridges --- *How many did you see?*  
Churches  
Water tanks --- *Where did you see them?*  
Parks  
Towers on the top of buildings  
The street grid --- *What does it look like?*  
Street life --- *What's going on down here?*

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After students observed the city via the NY SKYRIDE discuss with them how many of the items on the above list they observed. It will be interesting to see how close to reality their initial speculations were.

Discuss how similar or different Manhattan is to students' home community.

Pose these questions to your students:

*If you had a SKYRIDE in your community, would it look the same as the one you experienced in New York City?*

*How might it be the same?*

*How might it be different?*

### **Materials Needed**

List of Manhattan *things/items* that will be seen on the NY SKYRIDE



## One Important Observation

In this activity students observe the built environment to discover and experience New York City History. Along the way they will be introduced to some aspects of city planning. This activity enhances visual literacy and temporal concepts.

### Background Information:

**Zoning** laws define how large buildings in a city can be and how these buildings can and cannot be used. In 1916 New York City was the first city in the United States to create a city-wide Zoning Resolution. This was done as a reaction to the construction of the Equitable Building (at 120 Broadway). The building was so much taller and bigger than its neighbors that it blocked the windows of these buildings, diminishing the availability of sunshine and fresh air for the people who lived and worked in them.

The **Zoning Resolution of 1916** established height controls and required that New York buildings have setbacks (sort of like a wedding cake) to allow sunlight and air to reach the street below). It also divided the city into *use districts* (residential, business, retail, and unrestricted), *area districts*, and *height districts*.

**In 1961 the city changed these zoning regulations** and setbacks were no longer required. Newer construction materials and methods meant that buildings constructed were able to have more open space inside. After 1961 buildings constructed in New York City could be the same size from street to roof.

### Activity:

Discuss the general concept of zoning laws with your students:

- What are some of the reasons zoning regulations were created?
- What do they tell us about a city?
- Does every city have them?
- Are there reasons we might not want them?
- What are some of the zoning regulations in their community?

**Before the NY SKYRIDE experience** read the parts of the **1916** Zoning Resolution that apply to buildings in Manhattan. Define and discuss **setbacks** with your students. Then read the parts of the **1961** Zoning Resolution that apply to buildings in Manhattan. Discuss **setbacks** once again.

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As students experience the NY SKYRIDE have them look specifically **for skyscrapers with setbacks.**

After the NY SKYRIDE experience have students discuss their findings. Did they discover any buildings with setbacks? What do they know now about New York City --- Manhattan that they did not know before? (Among other things - the buildings with setbacks were built after 1916 and before 1961. There are exceptions to this, of course.)

Students can reinforce their observations at the Empire State Building Observatory and as they walk along the streets in Manhattan.

Have students photograph or sketch the different buildings with setbacks that they locate.

Visit the Equitable Building at 120 Broadway, if possible.

#### **Materials Needed**

- 1916 New York Zoning Regulations
- 1961 New York Zoning Regulations
- A map of New York City
- Drawing/sketching supplies for each student

#### **Websites for Information About Zoning**

1. <http://www.nyc.gov/html/dcp/html/zone/zonehis.shtml> --- This is the Website of the New York City Department of City Planning. I6's chocked full of information!
2. [http://www.tenant.net/Other\\_Laws/zoning/zontoc.html](http://www.tenant.net/Other_Laws/zoning/zontoc.html) --- This site provides a handbook for understanding New York City zoning.
3. <http://www.nytimes.com/2007/03/14/realestate/14GH-Home.html?ex=1331524800&en=ad739d7664c2dc40&ei=5088&partner=rssnyt&mc=rss> --- This is a link to an interesting article about zoning variances that appeared in the New York Times in March, 2007. It gives some zoning issues to ponder.
4. <http://www.nyc-architecture.com/LM/LM059.htm> -- This website has photographs of the Equitable Building at 120 Broadway.
5. <http://www.greatgridlock.net/NYC/nyc1a.html> -- This link provides information about several of Manhattans early skyscrapers.
6. [http://www.encyclomedia.com/empire\\_state\\_building.html](http://www.encyclomedia.com/empire_state_building.html) --- This site has a really good audio and video presentation about the Empire State Building as well as printed copy.

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## New York City Streetscapes

New York is unquestionably one of the most vibrant cities in the world. Its streets are teeming with colors, sounds, aromas and ideas from different cultures. It is a collection of different ideas and experiences. This activity introduces students to some of these experiences. It requires students to attend to everything in the Empire State Building's neighborhood. Students will practice using their visual literacy skills to read the built environment.

### Activity #1

Assign each of the following New York City streets to a team of students. All are neighbors of the Empire State Building. Have each team photograph/sketch/write about the current street scenes (streetscapes) they find on these streets:

7<sup>th</sup> Avenue between West 32<sup>nd</sup> and West 35<sup>th</sup> Streets

West 34<sup>th</sup> Street between 7<sup>th</sup> Avenue and 5<sup>th</sup> Avenue

West 33<sup>rd</sup> Street between 7<sup>th</sup> Avenue and 5<sup>th</sup> Avenue

5<sup>th</sup> Avenue between West 32<sup>nd</sup> and West 35<sup>th</sup> Streets

Encourage students to include **everything** in their streetscapes. Have them explore their assigned blocks recording what they see.

Remind students they will be recording/describing/documenting a moment in history --- the history of Manhattan in New York City, in New York State in the United States of American in the year -----  
?????

After students have completed the assigned task, discuss what they captured with their drawing, their photograph or their words. What was the story they wanted to tell about the city? Discuss what they chose to leave out. Discuss what they missed. What part of the city's story is missing?

When you return to the classroom display your students' work.

Have your class watch selected scenes from *West Side Story* to note the streetscapes chosen for this movie. Have students look for anything they missed when they explored the city.



### Activity #2 – Alternative Activity

Divide students into small teams. Each team should choose **just one thing** found on a Manhattan street on which to focus/ document/describe --- **just this one thing** as they see it. A team might focus on:

- the pattern of the streets
- the traffic flow
- all the shops found there
- the decoration seen on buildings
- the pattern of shadows and sunshine
- the signs in the windows
- the people

(It's best if you generate your own list of things on which to focus, based on student interest and previous lessons).

Remind students they will be recording/describing/documenting a moment in history --- the history of Manhattan in New York City, in New York State in the United States of American in the year -----  
????

Assign students a city block (as in Activity #1) and have them explore this assigned block recording (via writing, drawing or photographing) what they see and hear in their chosen category.

After students have completed the assigned task, discuss what they captured with their drawing, their photographs or their words. What was the story they wanted to tell about the city? Discuss what they chose to leave out. Discuss what they missed. What part of the city's story is missing? If they told the story of the patterns of the built environment, did that mean they missed the story of the people who used these patterns? If they told the story of the shops found in the neighborhood, did that mean they missed the story of the patterns of use inside these shops?

### When you return to your classroom lead your students in a discussion about the streetscapes they saw and captured:

- Did they like the architecture on their assigned street?
- How did they capture the city aromas they discovered?
- Did they find lots of colors or few colors?
- What did the signs on the street look like? What did these signs direct people to do or not to do?

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Did the size and shape of the buildings they found make them feel small or big?  
What were the people in the neighborhood doing?  
How did they capture the city sounds they heard?  
Did they like the patterns of the city?  
How did life in the neighborhood compare to life in their community?  
What did they not see on their assigned city street?  
What they would change about the street they explored?

**Materials Needed:**

Sketching supplies  
Cameras  
New York City Maps  
Compasses (not required)  
Method of displaying student work  
*West Side Story* Video



## Hunt for Neighborhood Treasures

This is an old-fashioned scavenger hunt through the Empire State Building's neighborhood. By exploring this neighborhood students will use their visual literacy skills to learn about New York's history, its built environment, its people and their culture.

### Activity

This scavenger hunt will send your students in search of all kinds of New York treasures. Your route for the hunt runs through the Empire State Building's neighborhood. It will lead your students from the Empire State Building to Penn Station. It will take them from West 31<sup>st</sup> Street all the way over to West 34<sup>th</sup> Street and from 5<sup>th</sup> Avenue to 7<sup>th</sup> Avenue. In other words it will take your students in a big rectangle around the Empire State Building.

There is no order to the hunt but it should begin at the entrance to the Empire State Building on 5<sup>th</sup> Avenue. Have your students read the scavenger hunt first then use a map to plan their exact route. This planning is half the fun of it all!

The items on the scavenger hunt are not related --- they do not lead students to a treasure or to one special place. You'll see that the items on the hunt appear in different forms --- rhymes, riddles, true/false questions, etc. Nothing is straight forward! And many things are not as they seem. Enjoy!

## Your Empire State Building Neighborhood Scavenger Hunt

### Starting at the Empire State Building On 5<sup>th</sup> Avenue (between West 34<sup>th</sup> Street and West 31<sup>st</sup> Street)

1. Find out which is on the street signs *Fifth* or *5<sup>th</sup>*.
2. Find a school that undergraduates can not attend.
3. Quick! Was the door you used to exit the Empire State Building  
Automatic?  
Revolving?  
Just a plain old open/shut door?
4. Name the establishments on each of the four (4) corners of 5<sup>th</sup> Avenue and West 33<sup>rd</sup> Street.

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One of the buildings on this corner has beautiful arched windows. On which corner is this building --- South East? South West? North East? North West?

5. The movie, *The Godfather* featured a shop located at 314 5<sup>th</sup> Avenue, near West 32<sup>nd</sup> Street. This shop specialized in one of the following items:

- Cigars
- Leather goods
- Hats
- Trains
- Bagels

Visit the address (most recently a pizza restaurant) and find the name of the shop. Then tell us which of the above items was its specialty.

**On West 34<sup>th</sup>** (between 5<sup>th</sup> Avenue and 7<sup>th</sup> Avenue)

1. From one of the following corners you can see a yellow and white place to live:

- 5<sup>th</sup> & 34<sup>th</sup>
- 6<sup>th</sup> & 34<sup>rd</sup>
- 7<sup>th</sup> & 34<sup>th</sup>

Find out which corner it is and when you've located the building, draw it right here so we'll know you have the correct building:

2. There's a really weird building at 38 West 34<sup>th</sup> Street. Which of the following is the best description for this building:

- All glass, very tall and wavy
- Low, brown, and sad-looking
- Green and white with elegant columns

3. Look hard and think hard and locate --- *A geometric shape that will Herald your arrival.*

4. Although you can't see it or hear it yet, there is a parade on its way and it will end right here in the neighborhood. Find the famous building that's the ending point for the parade and tell us exactly where the parade ends.

(Check their basement for some great photos and memorabilia of foregone parades.)

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5. You should feel safe on 34<sup>th</sup> Street when you find the six (6) women guarding the door to this store. What is the store and what's its address? And now, describe the six women ----
6. Hotel McAlpin used to stand at 50 West 34<sup>th</sup> Street. It was the largest hotel in the city when it was built in 1913 and it had a *silent floor* for the nocturnal. Find out what's on this site today.

Wonder if they still have that *silent floor*? Why not ask and find out?

7. Find A.S. Beck.

**On 7<sup>th</sup> Avenue** (between West 31<sup>st</sup> Street and West 34<sup>th</sup> Street)

1. There is a lovely 46 story, Art Deco building close to the intersection of 7<sup>th</sup> Avenue and West 34<sup>th</sup> Street that was built in 1929. Here's the name of this building ---

Lnnseo Wtreo

Sorry! We forgot to mention that the name of the building is scrambled. Unscramble this name, find the building and give us the address.

Now tell us how you might guess that this building was built between 1916 and 1961.

2. Find out what used to occupy the building on the corner of West 34<sup>th</sup> and 7<sup>th</sup> Avenue, where Citibank is today. **Just read the past and you'll know.**
3. There are two buildings on 7<sup>th</sup> Avenue that are named for a state located on the East Coast. What are these buildings?

Which building is older?

4. 7<sup>th</sup> Avenue True/False
  - You can not see the entire Empire State Building from 7<sup>th</sup> Avenue.
  - 7<sup>th</sup> Avenue is a one-way street.
  - 7<sup>th</sup> Avenue is also called The Avenue of States.
  - 7<sup>th</sup> Avenue has a train terminal that services up to a thousand passengers every 90 seconds.
  - Taxi cabs are not allowed on 7<sup>th</sup> Avenue.

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**On West 33<sup>rd</sup> Street** (between 5<sup>th</sup> Avenue and 7<sup>th</sup> Avenue)

1. Find *Mr. Greeley* and tell us why he's here.
2. The original *Gimble's Department Store* (arch rival of Macy's Department Store ---- "Does Macy's tell Gimbel's?") is on this walk. Tell us where it used to be --- for it is no more. Hint: You'll be 100% correct if you look to the corners. But be careful that you don't get malled!
3. Find out what the hotel on the corner of 7<sup>th</sup> Avenue and West 33rd Street has to do with the Big Band Era in US history.

**On West 31<sup>st</sup> Street** (between 5<sup>th</sup> Avenue and 7<sup>th</sup> Avenue)

1. As you stroll down West 31<sup>st</sup> Street toward 7<sup>th</sup> Avenue, look for a lovely French mansard roof high above you. It tops a former grand hotel from the late 1890's. We want to know what occupies this grand hotel today.
2. Solve the following rhyme about a site on West 31<sup>st</sup> Street and tell us what's on this site:  
  
6x4 is 24  
There's a hook and ladder behind the door  
9divided by 3 = 3 by Division  
Hurry up, make your decision.
3. Go to St. Francis House between 6<sup>th</sup> Avenue and 7<sup>th</sup> Avenue. Stand on the steps facing the street. Then, look up --- count the water tanks you see from here on New York's roofs. How many do you see? Are you sure? Look again! You may be VERY surprised!

## **End of Your Scavenger Hunt**

Discuss the results of your scavenge hunt as a group.

After your New York visit, when your class returns to the classroom, have students create a walking tour of their school neighborhood.



**Materials Needed**

- Map of Manhattan
- Copies of the scavenger hunt
- Pencils for recording answers
- Cameras



## New York City As the Artists See It

[See Student Worksheet I](#)

This activity focuses on the basic visual elements that are used to create everything in our environment. Students will be taught to identify these elements and learn that they are a different type of language used to communicate ideas. A mural created by Fine Art students at New York's Fashion Institute of Technology (FIT) is used as the basis for this activity. It depicts New York City in a number of ways --- in a literal way, in a representational way and in an abstract way, all utilizing this "other" language. Students will be asked to apply this new language to the mural of New York City.

### Activity

As your class is waiting for the NY SKYRIDE gather everyone around and study the mural carefully. Have students locate sections of the mural that:

- tell about the services people who live here receive
- show the geometry of city streets
- tell about a city of the past
- point to the future
- make the viewer want to know more
- present other messages

Have students discuss what it is about each section that delivers the message.

Is it ---  
the colors  
the shapes  
the movement  
the angles  
the lines  
the texture  
the tone  
the form  
the volume?

Have each student photograph the section of the mural that he/she relates to best --- the section that makes him/her the most interested in New York City.



As your class is exploring the streets of Manhattan, ask them to look at the city in the different ways it was represented by the artists who painted the mural. **Look for color, line, shape, value or tone, texture, volume or form.** Have students document examples of these visual elements via photographs or drawing/sketching.

Discuss and compare the photographs of the mural with the photos students took on the streets. Help students create direct association between the two, showing them just how present these elements are, everyday, in all environments. This will enable them to understand how the mural interprets the city in areas that do not contain words or other literal explanations.

**When you return to school,** view the video of the FIT students creating the mural at the NY SKYRIDE (Included for your use). Talk to the students about how they would approach creating a mural now that they see the different methods of expressing their ideas. Give each student an 18X24 piece of paper and have him/her create a section of their community that will later be combined together with everyone's in the class to become their own mural. Encourage students to be VERY creative with their materials.

Hang the mural sections around the classroom or in a long hallway. The installation of these "pieces" to form the whole will become a part of the lesson. Consider the *Principles of Design* when combing the work --- Consider the balance, proportion, rhythm, emphasis and unity of the total mural. Look at the mural sections as a group and discuss how they should be arranged. What areas are successful or visually (aesthetically) pleasing? Resolve, rearrange or make adjustments to areas that don't seem to work together and discuss why.

Have students create a collection of the different ways cities are visually represented.

### **Materials Needed**

Cameras

Photos: *Documenting the NY SKYRIDE Mural* --- photos and a video for later use in the classroom. **(See Student Worksheet I)**

18X24 paper for each student

An assortment of supplies that could include- markers, paint, paint brushes, palette knife, glue, scissors, colored yarn, construction paper, ruler, as each student wishes.

Access to the Internet or other research tools



### Good Websites About Ways of Representing Cities

1. <http://lcweb2.loc.gov/ammem/gmdhtml/gmdhome.html> --- This is a link to the Library of Congress's Map Collection.
2. <http://www.eduplace.com/ss/maps/usa.html> --- This is a collection of outline maps from Houghton Mifflin Publishers.
3. [http://www.yourchildlearns.com/us\\_map.htm](http://www.yourchildlearns.com/us_map.htm) --- This site has some free maps for downloading.
4. [http://www.oilpaintingsbuy.com/oilpainting\\_subcate\\_4\\_2.html](http://www.oilpaintingsbuy.com/oilpainting_subcate_4_2.html) --- This is a commercial site but it gives a good overview of the many different ways artists have described cities.



## Design Your Own Section of New York City See Student Worksheet F

This activity focuses on the elements that make up a city and how these elements when combined, all together, affect the way residents use the city. A mural created by artists from New York's Fashion Institute of Technology (FIT) is used as the basis for this activity. Students are called upon to think through what is needed to make a city work both in terms of the built environment and in terms of public services. Students will be required to use teamwork and planning skills and think beyond their daily lives.

### Activity

The FIT artists created a mural with many stories about New York City. Before (or after) experiencing the NY SKYRIDE gather students around the mural, which is located in the entryway to the NY SKYRIDE. Discuss the mural and the different information about the City that's presented here. Help students begin to think about the components that go into making a city function.

Focus your students' attention on a small section near the right end of the mural. There you will find a street grid with no names or symbols or any indication of the built environment. Your task is to design a new neighborhood in New York City using this grid. There is much to think about. To get you started we have provided some issues that must be addressed if your neighborhood is to be a good place for people to live.

Focusing on the street grid on the mural, discuss the following with your students:

- What do you want people to be able to do in this new neighborhood?
- Where on the grid will you build housing for people? What will this housing look like?
- Where on the grid will you place the school?
- Where on the grid will you allow shops and businesses to locate?
- Do you need public services like fire and rescue and a hospital in your neighborhood? Where will they be?
- Will you allow cars in your New York neighborhood? What about mass transportation?
- Do you need a traffic study?
- Where on the grid will you have a green park or will you even have a green space in your New York neighborhood? Etc.



The NY SKYRIDE has prepared a space for you to sit and have discussions with your students. You will find a copy of this part of the FIT mural posted in this space for your use. Ask the NY SKYRIDE attendant to direct you to the SKYRIDE CLASSROOM and continue your discussions here.

Your students will more than likely come to the conclusion that they need to do some research on the issues presented above so we've provide you with a copy of the grid found on the mural to download and use back in your classroom. You can complete your planning then after students have completed their research.

**Materials Needed:**

Student Worksheet: *Make Your Own New York City Neighborhood*

--- For use back in the classroom

**Good Websites For Learning About City Planning**

- a. <http://www.uli.org//AM/Template.cfm?Section=Home> --- This is link to the Urban Land Institute which has as its mission to provide leadership in the responsible use of land and to help create sustaining and thriving communities.
- b. <http://www.greatstreets.org/> --- Lots of information here about good design for streets and neighborhoods.
- c. <http://www.cnu.org/> --- This is the website for the Congress for the New Urbanism which focuses on the development of cities with walkable neighborhoods as an alternative to urban sprawl.
- d. <http://www.rudi.net/> --- This is a UK organization that offers many resources about urban design.



## Reading the Empire State Building

This activity requires students to use their visual literacy skills to learn from the built environment. In this case, the built environment is the Empire State Building. Students are asked to explore the Empire State Building to compare it with the built environment in their own community.

### Activity

Refer your students back to the list of architectural components/details they generated while exploring their school before your visit to New York City. Go over their findings once more to make sure everyone remembers what was found.

Direct your students' attention to the Empire State Building. Now it's time to see how the Empire State Building compares to their school. Their task is to explore the Empire State Building **inside and out** ---

- Walk the lobby,
- Walk outside along the 33<sup>rd</sup> Street side of the building.
- Walk along the 5<sup>th</sup> Avenue side of the building.
- Walk along the 34<sup>th</sup> Street side of the building.

Have students explore as much of the Empire State Building as is permitted to study its architectural components and details.

Help students compare the building components/details found in/on the Empire State Building with the building components/details they preciously discovered at their own school.

Have students decide what they would change about the architecture of the Empire State Building and why. Have them write about these changes or draw them.

**When you return to school**, invite a local architect into the classroom to discuss the changes students would make to the architecture of the Empire State Building. Ask the architect to help students decide what is feasible and what is not; what is advisable and what is not.



### **Materials Needed**

List of the architectural components/details of your school

Drawing supplies

Journals and writing supplies

An architect from your home community

### **Good Websites About Architectural Elements**

1. [www.eeri.org/lfe/pdf/Field\\_Guide\\_Section\\_11.pdf](http://www.eeri.org/lfe/pdf/Field_Guide_Section_11.pdf) --- This is a field guide for evaluating architectural elements but it contains a nice list of elements.
2. <http://www.primestucco.com/exterior-architectural-trim.html> --- This is a commercial site but it has some drawings of architectural elements that might be useful.
3. <http://www.wishihadthat.com/index.asp?PageAction=VIEWCATS&Category=780> --- This is another commercial site with interesting architectural elements.



## Two Looking Challenges

This is a jam-packed activity that requires students to use their visual literacy skills to attend to New York City's built environment. Students will discover some of the history of the Empire State Building, some unique features of a New York neighborhood and gather some information about life in the 1930's.

### Activity

Here are two challenges to find out how well your students pay attention to the sights around them. The first challenge takes place in the lobby of the Empire State Building. The second challenge takes place on 34<sup>th</sup> Street in the Empire State Building's neighborhood.

**\*\*Please note that it is not appropriate or fair to other visitors, to have a large group explore the lobby of this highly-visited building. We strongly suggest that you divide your students into small groups to complete this challenge!**

### Looking Challenge #1

**We challenge your students to find the following in the lobby of the Empire State Building:**

- the latitude and longitude of the Empire State Building
- a replica of the Empire State Building itself
- a tribute to the metalworkers who worked on building the Empire State Building
- a tribute to masons who worked on building the Empire State Building
- a tribute to the carpenters who worked on building the Empire State Building
- A pyramid
- Zigzags under foot
- A symbol of the United States
- An elevator that's not plain!

Discuss with your students what they found and what purpose they think each item serves. Why was it placed in the lobby of the Empire State Building?



## Looking Challenge #2

(these are harder than Challenge #1)

**We challenge your students to find the following outside on 34<sup>th</sup> Street --- in the Empire State Building's neighborhood:**

- A small brown building that looks very out of place
- A famous parade
- At least one balcony
- A rosette
- A building with a number for it's name
- A building with a real name
- Ladies protecting a door.
- A building that can tell time
- A square that will Herald your arrival

## Materials Needed

Printed version of the challenges

Street maps of New York City



## Bridge to the World

This activity introduces students firsthand to the Brooklyn Bridge, one of New York City's three suspension bridges that carry people and vehicles in and out of the Borough of Manhattan. Students study first hand the concepts of suspension bridges. Students use drawing, photography and journaling to record their discoveries on this walk across the Brooklyn Bridge.

### Activity

In this activity your students will walk across the Brooklyn Bridge. To prepare for their walk help them formulate questions they have about the bridge itself and its history. The Public Affairs Office of New York City's Mass Transit Authority (MTA) is available to answer questions that students might have. They can be reached at 646-252-7417. Have students call with their questions.

### Background Information about the Brooklyn Bridge

The Brooklyn Bridge has often been considered the most influential bridge in American history. It opened up the island of Manhattan and made travel in and out of it doable for the average citizen. This meant that people could live outside the city and still work inside the city. This meant that business could locate outside the city and still do business inside the city.

The Brooklyn Bridge was designed by the brilliant engineer John Augustus Roebling (1806-1869) and completed by his son Washington Roebling (1837-1926). At the time of its construction in 1883 it was considered an elegant structure. At that time it was the longest suspension bridge in the world. It was the first bridge to be built of steel cables.

The Brooklyn Bridge runs across the lower East River to the Borough of Brooklyn. It consists of two neo Gothic towers and a delicate lacework of steel-wire cables.

### Typical Facts about the Brooklyn Bridge:

Type of bridge: Suspension  
Construction started: January 3, 1870  
Opened to traffic: May 24, 1883  
Length of main span: 1,595 feet, 6 inches  
Length of side spans: 930 feet  
Length, anchorage to anchorage: 3,455 feet, 6 inches  
Total length of bridge and approaches: 6,016 feet  
Width of bridge: 85 feet  
Number of traffic lanes: 6 lanes

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Number of cables: 4 cables  
Height of towers above mean high water: 276 feet, 6 inches  
Clearance at center above mean high water: 135 feet  
Length of each of four cables: 3,578 feet, 6 inches  
Diameter of each cable: 15  $\frac{3}{4}$  inches  
Number of wires in each cable: 5,434 wires  
Total length of wires: 14.060 miles  
Total masonry in towers: 85,159 cubic yards  
Weight of suspended structure: 6,620 tons  
Total weight of bridge: 14,680 tons  
Cost of original structure: \$15,100,000.00

Introduce your students to the following concepts of bridge design and construction:

Compression --- Tension --- Spans --- Joints --- Columns --- Beams --- Loads --- Arches  
Ropes --- Cables --- Towers --- Geometric Shapes found in a bridge  
**(Feel free to create your own list of concepts)**

Define and discuss these concepts as a class and demonstrate them in the classroom prior to your visit to the Brooklyn Bridge.

When you arrive at the Brooklyn Bridge hand each student an assignment card. Each card presents the student with **one of the concepts** discussed in the classroom. It will be this student's responsibility or explore the Brooklyn Bridge in search of the assigned concept. Each card should have the following: the concept, its definition and a series of related questions to be answered by the student while on the bridge.

Some of the questions on the cards should be easy and straightforward. For example:

*Find 6 different geometric shapes on the Brooklyn Bridge. Or ---  
Measure the diameter of the cables on the Brooklyn Bridge.*

Other questions could be harder and more nebulous. For example:

*Can you feel the cables on the bridge just by standing on the bridge?  
Where on the bridge can you **see** tension?*

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Ask each student to photograph and/or draw sites on the bridge where he/she finds the answer to the questions presented on the card.

Ask students to take photographs of the bridge before and after they cross it. When you return to the classroom these photographs can be used to create perspective drawings of the bridge.

Have students keep a written journal of their visit to the Brooklyn Bridge.

Have students use binoculars to see what they can see in the distance. Ask each student to describe what he/she sees through the binoculars. When you return to the classroom have students locate what they saw through the binoculars on a New York City map.

When you return to the classroom have each student report his/her findings to the class.

Repeat this activity on a bridge in your community.

### **Materials Needed**

Assignment cards  
Map of New York  
Binoculars  
Cameras  
Measuring equipment as dictated by student questions  
Drawing materials  
Journals and writing implements

### **Good Websites About New York City Bridges**

1. <http://www.pbs.org/greatprojects/> --- This is a wonderful PBS site that tells all about some of the greatest building projects in the United States. There is a separate section on building the George Washington Bridge in NYC.
2. <http://www.davefrieder.com/> --- This is Dave Freider's website. He is a photographer and bridge expert. He has some wonderful photographs of many of New York City's bridges.
3. <http://www.newyorkled.com/bridges.htm> --- This site gives photographs and videos of New York bridges. It's a very complete site with lots of good information.
4. <http://www.nycroads.com/crossings/brooklyn/> --- Go to this site for up-to-the-minute information about conditions on the Brooklyn Bridge. The site also has a very nice summary of the history and construction of the bridge along with some interesting photographs.

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5. <http://www.transalt.org/files/resources/bridges/> --- This site provides information about walking, biking or skating across New York's bridges.
6. <http://www.mta.nyc.ny.us/bandt/index.html> --- This is the official website for the Metropolitan Transit Authority. It has information about all of New York City's bridges.
7. <http://www.ci.nyc.ny.us/html/dot/html/home/home.shtml> --- This is the official website for the New York City Department of Transportation.

### **Good Books About Bridges**

Burr, William **Report on Design and Construction of Queensboro Bridge** (New York, 1908)

Hopkins, H.J. **A Span of Bridges; An Illustrated History** (New York, Praeger Publishers, 1970)

Huxtable, Ada Louise **The Architecture of New York** (Garden City, Doubleday, 1964)

McCullough, David G. **The Great Bridge** (New York, Simon and Schuster, 1972)

New York City's MTA Brochure **Bridges and Tunnels Brochure**.

Reier, Sharon **The Bridges of New York** (New York, Quadrant Books, 1977)

Shannon, Rebecca Read **The City That Never Was** ( New York, Penguin Group, Viking Press, 1988)

Steinman, David **The Builders of the Bridge: The Story of John Roebling and His Son** (New York, Harcourt Brace, 1945)

White, Norval and Willensky, Elliot, eds. **AIA Guide to New York City, Third Edition** (San Diego, Harcourt Brace Jovanovich, 1988)

Winpenny, Thomas R., **Manhattan Bridge. The troubled story of a New York monument.** (Easton PA, Canal History and Technology Press in association with the Smithsonian Institution, 2004)



## Way Down Below the City

This activity focuses on what is beneath New York City. It asks students to think about the lifeline systems such as water, waste management, gas, electrical lines, transportation tunnels, etc. that exist below the city. Through this activity they will discover some interesting information about the history of New York City. Students will then have the opportunity to explore their home community to make similar discoveries.

### Activity

This activity calls for students to search for manholes all over New York City. This task is not as unrelated to life in New York as it might sound. It is possible to tell a lot about the city and its history from the type, shape, and markings on its manhole covers.

Here are some *manhole questions* for your students to research as they explore New York City:

1. Describe (with photos, drawings and/or words) the design on each manhole cover you discover and take a guess at why it is as it is?
2. Note the address of each manhole cover discovered.
3. Determine if each manhole discovered provides access to the water, sewage, steam, electricity or gas system of the city or to a traffic or train tunnels or even to a coal chute?
4. Determine if there is a system to where the city's manholes are placed? Are they on every street or at every corner or just a few per neighborhood?
5. What does the design of the cover tell you about the city?
6. Look for these initials: *ECS Co LIM, DPW, MBP* and *RTS* on manhole covers and find out what they stand for and what they tell you about the section of the city below them.
7. What is *Consolidated Edison*?
8. Look at the neighborhood around you that's above ground and speculate what might be underground, beneath it.
9. Look at the neighborhood and speculate what will be underneath it in 100 years

(Answers to #5 --- **ECS Co. LIM is the** Empire City Subway Company Limited; **DPW is the** Department of Public Works; **MBP is the** Manhattan Borough President; **RTS is the** Rapid Transit System.)

At the end of the day have students report and discuss their findings as a group.

Have students locate the manhole covers they discovered as they explored the city on a New York City (Manhattan) map.



When your class returns to the classroom have students choose one New York City manhole they discovered and research everything they can find about it.

Explore your home community for manholes.

Invite a local city official into your classroom to discuss what's underneath your home community.

### **Materials Needed**

Map of New York City (Manhattan)  
Drawing supplies  
Cameras

### **Good Books About What's Underneath New York City**

1. McCauley, David **Underground**, New York, Houghton Mifflin Company 1976.
2. Stuart, Diana, **Designs Underfoot: The Art of Manhole Covers in New York City**, Lyons Press 2003.
3. Stuart, Diana **Historic Cast-Iron Artwork**, *New York Chronicle* Summer 1998.

### **Good Websites About What's Under New York City**

1. <http://www.nationalgeographic.com/features/97/nyunderground/> --- This is a National Geographic site that tells about lots of things that are under New York City.
2. <http://www.recoveringthecityscape.com/> --- This site describes a project using newly designed manhole covers to commemorate historical buildings. Interesting!
3. <http://www.forgotten-ny.com/STREET%20SCENES/manholes/manhole.html> --- This site is so cool! It has photographs of many of New York City's manhole covers and explains the why and the what of them.
4. [http://nyc.gov/html/dep/html/drinking\\_water/index.shtml](http://nyc.gov/html/dep/html/drinking_water/index.shtml) --- This site is the official site for the New York City Department of Environmental Protection.
5. [http://flatrock.org.nz/topics/environment/new\\_york\\_city\\_water\\_tunnel\\_no\\_3.htm](http://flatrock.org.nz/topics/environment/new_york_city_water_tunnel_no_3.htm) --- This site has information about and good photographs of the construction of New York City's Water Tunnel #3.

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## Next Station, Bleeker Street

See Student Worksheet G

The purpose of this activity is to have students focus on New York City's Subway system to get a beginning understand of how transportation systems affect a city's development and the lifestyle of its residents. Students will be asked to do some first-hand research while in the city based on some assumptions about the problems associated with creating an underground transportation system. They may also explore the present day system taking a look at the art work placed there and how it relates to the activity and energy of the city.

### Background

By the middle of the 19<sup>th</sup> century overpopulation in New York was a severe problem. The influx of blacks from the South and immigrants from Europe had created a density of living in lower Manhattan that was unimaginable. Living conditions were deplorable.

But as the century drew to a close, things began to change. New York experienced a grand movement beyond its northern city limits. On what is now the Upper West Side, William Earle Dodge Stokes built the Ansonia Hotel, a great Beaux Arts style building adorned with ornate scrolls, brackets, balconies, and cornices. It was magnificent. And it was just the beginning. Other builders followed suite.

Edward Clark, head of the Singer Sewing Machine Company, built a row of 27 private homes and invested \$1 million in his family hotel at Central Park West and 72nd Street (This hotel later became known as the Dakota). Every apartment in this hotel was rented by the day it opened.

Not far behind, at the beginning of the 20<sup>th</sup> century the "subway", a new, underground transportation system was in the making and it would change where and how people lived. Now people had the ability to access parts of the island that had been accessible only to the wealthy. Private homes were replaced by enormous apartment buildings, especially near the new subway stops. Broadway became a commercial thoroughfare. Offices and banks sprang up everywhere. New Yorkers moved northward.

Shortly after this the subway would carry New Yorkers into the outer boroughs, off the island of Manhattan. The city would never be the same.



### Activity #1 Creating A Subway

After or before a day of exploring in New York City have students think about the city's subway system. It's simple, right? You dig a hole, lay some track, buy some trains, hire staff and suddenly you have a subway! Wrong! Begin a discussion with your students about the variables they think would be involved in creating a subway system.

Here are a few of the variable that might be involved:

- Where should the system be?
- Who needs it and why? And When?
- Who will pay for the system?
- What will be done to keep disruption to city life at a minimum while the system is being created?
- What will the fare be? How do you go about deciding this?
- Are there problems with the ground underneath the city that will affect the creation of the system? If so, what are they?
- What size trains do we need/can we use?
- What will riders want to have in the stations?
- How do we construct the system to allow for expansion in the future?
- What are the safety issues that should be considered?
- What do we want the stations to look like?

After a general discussion divide students into Observation Teams based on the variables that were discussed. These teams should be of your choosing but might be such as the following:

- Observation Team #1 --- Subway Location
- Observation Team #2 --- Subway Station Function
- Observation Team #3 --- Subway Aesthetics
- Observation Team #4 --- Trains

Have each team summarize the variables discussed that relate to the topic they have been assigned.

Plan an excursion for the very next day that involves riding the New York subway. Plan to spend some time in at least 5 different subway stations. At each station have the teams evaluate that station based on their topic/variables.

Compare observations at the end of the day.



Discuss what the section of the city around each station visited would be like if there were no subway stop there or nearby.

### Materials Needed

- Paper and pencils for recording observations
- Cameras for recording observations
- New York Subway maps
- New York City maps

### Activity #2 The Stories Told By Art in the Subway, A Challenge

Prepare students for a few hours exploring the art found inside the New York City Subway. Present each student with a map of the city's subway system and discuss how to read it. Begin by learning all there is to know about the legend. When you're ready to read the stops begin by finding the closest stop to your present location and branch out from there.

After students have a basic understanding of the subway system, introduce them to their task for the day --- **to complete a matching challenge all about the art in the New York City subways.**

Present students with the Student Worksheet: *Art In Transit Challenge* and explain their challenge:

Their challenge is to complete a three-way-match. They must match each of the artists presented on the worksheet with the artwork that he or she created for a New York City Subway Station. To do this they must visit each of the stations listed and find the artist's creation. Then they must select one of the descriptions provided for this work of art.

Last, but not least, they must give the work of art their own name for it.

The Student Worksheet: *Art in Transit Challenge* has a workspace for making these three-way-matches.

At the end of the day, have students compare their answers to the *Art in Transit Challenge*.

Have students give their opinion about the works they saw. Did they like them or not? Why or why not? What would they change about them --- the topic used, the materials used, the colors chosen? Would music have added anything?

You may have students who would like to create their own work for one of the stations visited. Ask for ideas.



### **Materials Needed**

Copies of the New York Subway Map for each student  
Student Worksheet: *Art in Transit Challenge*  
Pencils  
Cameras

### **Good Websites for Information About the New York City Subway**

1. [www.nyctsubway.org/](http://www.nyctsubway.org/) --- This is the official site of the New York City Subway. It has a great collection of historical documents and photographs. It also has a list of all the artwork scattered throughout the subway system.
2. <http://www.mta.info/index.html> --- This is the Metropolitan Transit Authority's home page. It's a great site for viewing the art in the New York City subways.
3. <http://www.nyctsubway.org/maps/historical.html> --- This is another link to the New York City subway. This one leads directly to their collection of historic NYC subway maps.
4. <http://www.nationalgeographic.com/features/97/nyunderground/> --- This is a National Geographic site that gives information about lots of things under New York City.



## Tastes and Aromas

[See Student Worksheet H](#)

This activity requires students to use their sense of taste and smell as tools for learning about New York City. In so doing they will learn about the many ethnic treasures found in the city and more about the people of this bustling city.

### Activity

This is a continuing activity and should be completed over the entire length of your class' visit to New York City. Have students keep a list of ALL the different kinds of foods they see sold in New York City. Then, using the Student Worksheet: Tastes and Aromas, have students take notes about the foods they actually taste in restaurants and from street vendors. (No need to report vending machine or room service food.)

Discuss the different tastes and aromas students discover.

Visit an ethnic market or grocery while in the city. Here are some that were suggested in the New York Times Newspaper (Sunday, February 24th, 2008):

- Pueblo Deli Grocery --- 129-135 Ridge Street; 212-358-9989
- Foods of India --- 121 Lexington Avenue; 212-683-4419
- Bangkok Center Grocery --- 104 Mosco Street, 212-732-8916
- Buzios Brazil Boutique --- 20 West 46th Street, 2nd floor; 212-869-6552
- West African Grocery --- 535 Ninth Avenue; 212-594-7399
- Tehuitzingo Deli Grocery --- 695 10th Avenue; 212-397-5956
- Myers of Keswick --- 634 Hudson Street; 212-691-4194

While in these markets, have students notice  
the advertisements they find here,  
the colors used around the store,  
any new aromas,  
the languages they hear and  
any music they hear.

### Materials Needed

Student Worksheet: Tastes and Aromas (LINK H)  
Lots of New York food!

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