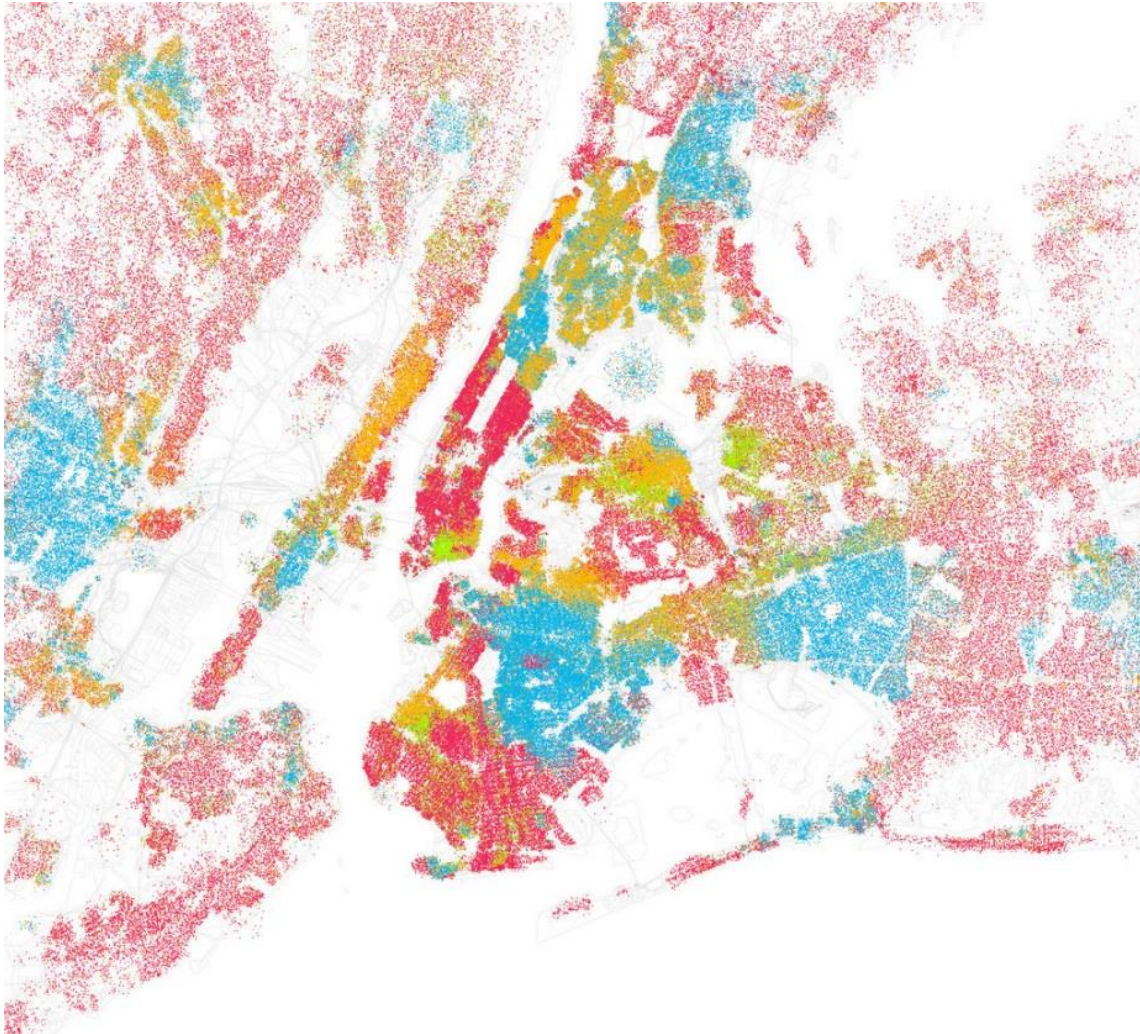**LESSON 1 – Asking Questions**   **Names of group members_____**

Part 1 – Mystery Map

Can you name the U.S. city shown in the map to the left? I know, this does not look like a typical city map, but it is a map of a major U.S. city. The shading shows where people live. The areas that are white on the map are not residential areas; they are things like bodies of water, industrial areas, transportation routes, or parks.

Go to each of the following U.S. cities in Google Earth to figure out which city is shown in the map:

- Chicago, Illinois
- Houston, Texas
- Los Angeles, California
- New York City, New York

The city shown on this map is:

_____

🛑 Wait until your teacher gives you instructions to move on.

Part 2 – The Big Question

Go to Sources A-E. Spend a few minutes viewing/examining each. What's the big topic addressed in these five sources? Write the topic in the form of a question. NOTE: It may be helpful to identify several questions and from those, identify the big question.

.

> The big question here is:

STOP **Wait until your teacher gives you instructions to move on.**

Part 3 – Secondary Questions

The big question as identified by the class is:

_____

This is a big question, indeed! In order to "tackle" such a big question, it is useful to break this down into smaller, more manageable questions.

Take a second look at Sources A-E. What kinds of changes do they describe? On the next page, make a list of as many secondary questions as you can, making sure that they relate to the big question identified by the class above, but are more specific.

STOP Wait until your teacher gives you instructions to move on.

Finally, in the space below, write the supporting questions your class comes up with.

LESSON 2 - All about Sources   **Names of group members** _____

Part 1 – Primary or secondary?

Look at Sources F-J and identify each as a primary or a secondary source. Write the answer on the blank line after the letter for each source.

Source F: _____   Source G: _____
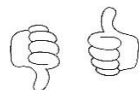
Source H: _____   Source I: _____

Source J: _____

STOP   Wait until your teacher gives you instructions to move on

Part 2 – Thumbs up or thumbs down?

Look at Sources K - P. Think about the big question and the secondary questions you identified in the previous lesson. Which of the sources below would help you find answers to the big question and the supporting questions? Give them a "thumbs up" by drawing an up arrow to the right of the letter of each source. Which of the sources below would not help you find answers to the big question and the supporting questions? Give them a "thumbs down" by drawing a down arrow to the right of the letter of each source.

Source K: Source L: Source M:

Source N: Source O: Source P:

STOP   Wait until your teacher gives you instructions to move on.

**Part 3 – Wrap-up**

Go to Source Q.

In the space below,
   a) identify this source (including whether it is a primary or secondary source) and
   b) explain its usefulness for answering the big question of this unit. If it is not useful, explain why. If it is useful, provide at least three specific examples of answers to the big question based on this source.

LESSON 3 – Population Changes   **Names of group members_____**

Part 1 – How many is one million?

How many dots are shown below? _____   How many pages of dots this size would be needed to show 1,000,000 dots? _____

Source: http://focusonmath.wordpress.com
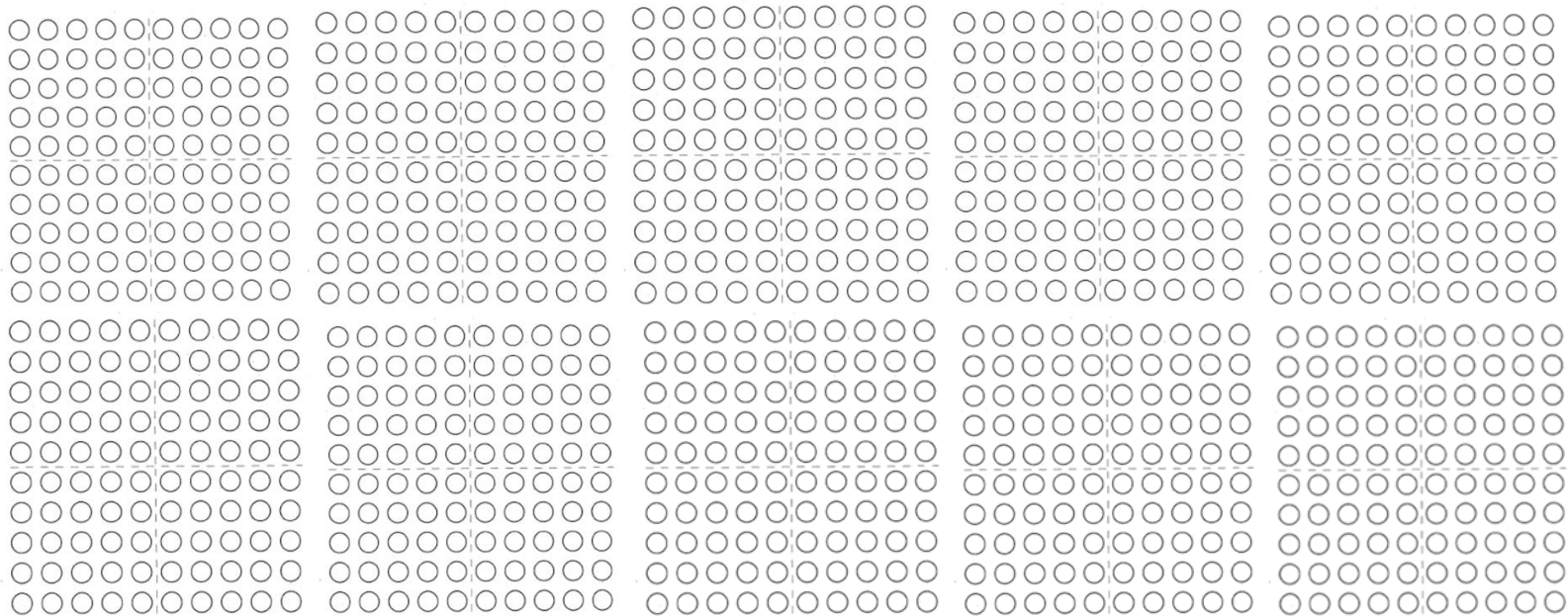
STOP Wait until your teacher gives you instructions to move on.

Part 2 – Population changes over time

To begin, go to Source 1 and find the bar graph of New York City's population from 1626-2013.

1. Look at the height of the bars on this graph. It appears as though the city has grown in population, but not a great deal. The bar for the 2013 population appears to be about twice the height of the population in 1626, suggesting the population has doubled during that time. Is that true? _____ To find the answer, look at the actual population numbers for 1626 and for 2013.
2. Why is this graph so misleading?

3. Let's make a bar graph of New York City's population that is more accurate. Find the population of the city in 1626, 1670, 1900, and 2013. Plot these four numbers on the graph paper provided for you. You will need to determine the scales on your x and y axes. Remember, the time periods and numbers need to be evenly spaced.

4. Don't forget to label your x and y axes, add a title and add the source of the information on your graph.

5. How many pages of dots (at the size of the dots on the first page) would be needed to show the population of New York City in 1626? _____   in 1670? _____   in 1900? _____   in 2013? _____

—
6. *Go to Source 2. Click on "About the Lenapes" then click on and read the section titled "The Community."   Do you think the population of Lenapes living in this area before 1626 was greater than, less than, or equal to the 1626 population? Defend your answer with reasons and data. Why can't you be 100% sure of your answer?*

🛑 Wait until your teacher gives you instructions to move on.

Part 3 – Race/ethnicity Timeline

Look at the timeline below and fill in the blanks with the name of the main groups of people living in New York City before 1609 and from 1609-1664. Go back to Sources 1 and 2 if you need to.

Pre-1609   1609-1664   1900   2013

1._____2._____

3. Go to Source 3 and fill in the table below for New York City:

Year	Percent white	Percent black	Percent American Indian….	Percent Asian and Pacific Islander	Percent Hispanic
1900					

4. Go to Source 4 and fill in the table below for New York City:

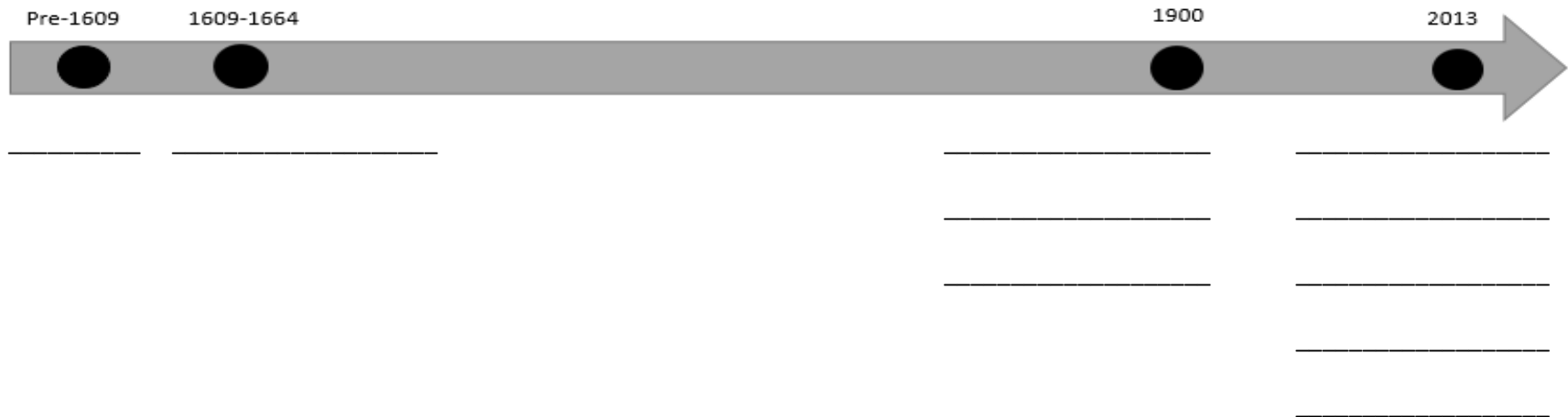| Year	Percent white	Percent black	Percent American Indian….	Percent Asian and Pacific Islander	Percent Hispanic
2010			Less than 1 %		

5. Go back to Source 1 for a few minutes. This table shows the country of origin for New York City's foreign born population. Was the percent foreign born higher in 1900 or 2013? _____ Show how you determined this.

6. What were the leading countries of origin of New York City's foreign born population in 1900 and in 2013?

1900:_____

2013:_____

7. Use your answers from questions 3,4, and 6 above to identify the top ethnic/racial groups living in the city in 1900 and in 2010/2013. Add this information to the timeline below.

Pre-1609   1609-1664   1900   2013

_____   _____   _____   _____

                                                                                              _____   _____

                                                                                              _____   _____

                                                                                                                           _____

                                                                                                                           _____

In the space below, explain how you defined/identified the top ethnic/racial groups living in New York City in 2013.

Names of group members_____

LESSON 4 – Culture Changes (pre-1609)

In this lesson, your group will be assigned one of the following questions:

a) What did the Lenape eat and where did the food come from?
b) What did the Lenape wear and where did their clothes come from?
c) How did the Lenape build their homes and what materials did they use?
d) What did the Lenape do in their leisure time?
e) What did the Lenape believe?

Use Source 2 to find the answer to your group's question. The sections titled "About the Lenapes" and "Kids Fun Page" plus the videos will be most useful. Use the space below to take notes that you can use when you are asked to present your findings to the class.

NOTES:

LESSON 5 – Culture Changes (1609-1664)   **Names of group members_____**

Part 1 -- Use Source 5 and the book *Life in New Amsterdam* to gather information about each of the following aspects of Dutch culture in New Amsterdam from 1609- 1664.

Language	Religion	Food	Clothing	Housing	Arts/Leisure Activities

STOP Wait until your teacher gives you instructions to move on.

Part 2 -- Your teacher will give your group a copy of the Castello map. You can also find this map in Source 6. The online version allows you to zoom in and out and move around town to see more detail.

Your task is to write a script for a narrated walking tour of New Amsterdam during this time period. Your tour should stop at five places in town. At each stop, one (or two) of the aspects of culture should be discussed in at least 5 sentences. (Combine language and religion at one stop.) You can reference places on the map by block letter and building number or use street names. You will note that there is no legend on this map. The legend was printed separately and identified the owners of each of the buildings on the map plus information about when the building was built. You do not need all this detail. For example, to talk about housing, select any house on the map; your tour should discuss housing in general, not provide lots of details about one particular house.   When you discuss food, you might stop at a garden shown on the map. Think about a good location in town to discuss clothing, and arts/leisure activities.   Write the number of each stop on the map in the location where you will stop on the tour, then fill in the table below. Include five sentences of information you will use at each stop in the last column. Use information from the class discussion to write your five sentences.

Stop	Location	Main Topic(s)	Information for the tour (Five sentence minimum)
#1	Building 10, Block F OR inside the fort[1]	Language and religion	
#2		Food	

[1] Note: Building 10 in Block F was the old church. It is thought to have been built in 1633. In 1642, a new church called St. Nicholas was built inside the fort and the old church abandoned. Depending on what year you choose to give the tour, you could use either location as your stop to discuss religion and language.

#3		Clothing	
#4		Housing	
#5		Arts/Leisure Activities	

LESSON 6 – Culture Changes (1900)   **Names of group members** _____

Part 1 – Flashcard ID

As your group looks at the pictures of immigrants arriving at Ellis Island around 1900, record your thoughts as to what country the immigrants are from. Then, check your answers when your teacher tells you the country.

Photo #1 _____   Photo #5 _____

Photo #2 _____   Photo #6 _____

Photo #3 _____   Photo #7 _____

Photo #4 _____   Photo #8 _____

🛑 Wait until your teacher gives you instructions to move on.

Part 2 – One step back … and two steps forward

To begin, let's "step back" to Lesson 3. In that lesson, you learned that in 1900, _____% of the population In New York City was foreign born.   And, 25% of the foreign born were immigrants from Germany, 22 % were immigrants from _____, 15% were immigrants from _____, and 11% were immigrants from _____.

Turn now to Source 7 as we move forward. Look at the section titled "Why they left home" and answer the following questions.
1. Which of the four foreign born immigrant groups in 1900 were considered "old immigrants" because they came first?
   _____ and _____

2. Which of the four foreign born immigrant groups in 1900 were considered "new immigrants" because most of them came around 1900?
   _____ and _____

Next, look at the sections titled "Neighborhoods," "Living Conditions," and "Jobs" (also at Source 7) and answer the following questions.
3. In what New York City neighborhood did most new immigrants settle in 1900? _____
4. Many recent immigrants in 1900 lived in tenement houses. What were these like?

5. What kind of jobs did many 1900 immigrants get after they arrived in New York City?

STOP Wait until your teacher gives you instructions to move on.

Part 3 – Victoria and Becky
What was life like for someone living in the Lower East Side around 1900? Learn more about the lives of two fictional immigrant girls – Victoria Confino and Becky Moscowitz.

 To learn about Victoria's life, go to Source 8. Find the section titled "Online Activities" at the bottom of the page. Then, click on "Become an Immigrant" next to Victoria's picture. Click on "87 Orchard" and "Make a Life" to learn more about her life in New York City.

To learn about Becky's life, read the following book: *Immigrant Girl: Becky of Eldridge Street* by Brett Harvey.

Part 4 – Alike and different

Fill in the Venn diagram on the next page showing how Victoria and Becky's lives are alike and how they are different. Include information about language, religion, food, clothes, housing, and leisure activities as much as possible.
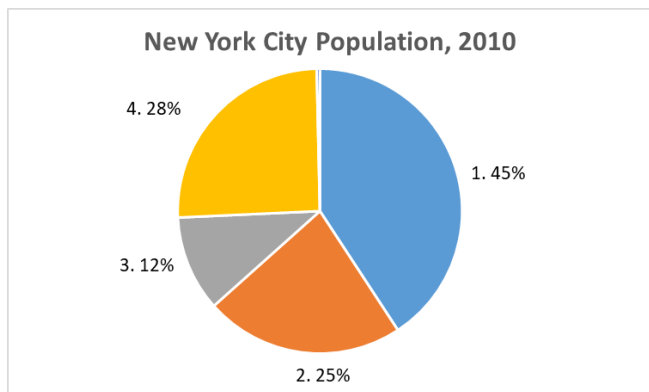
Victoria

Becky
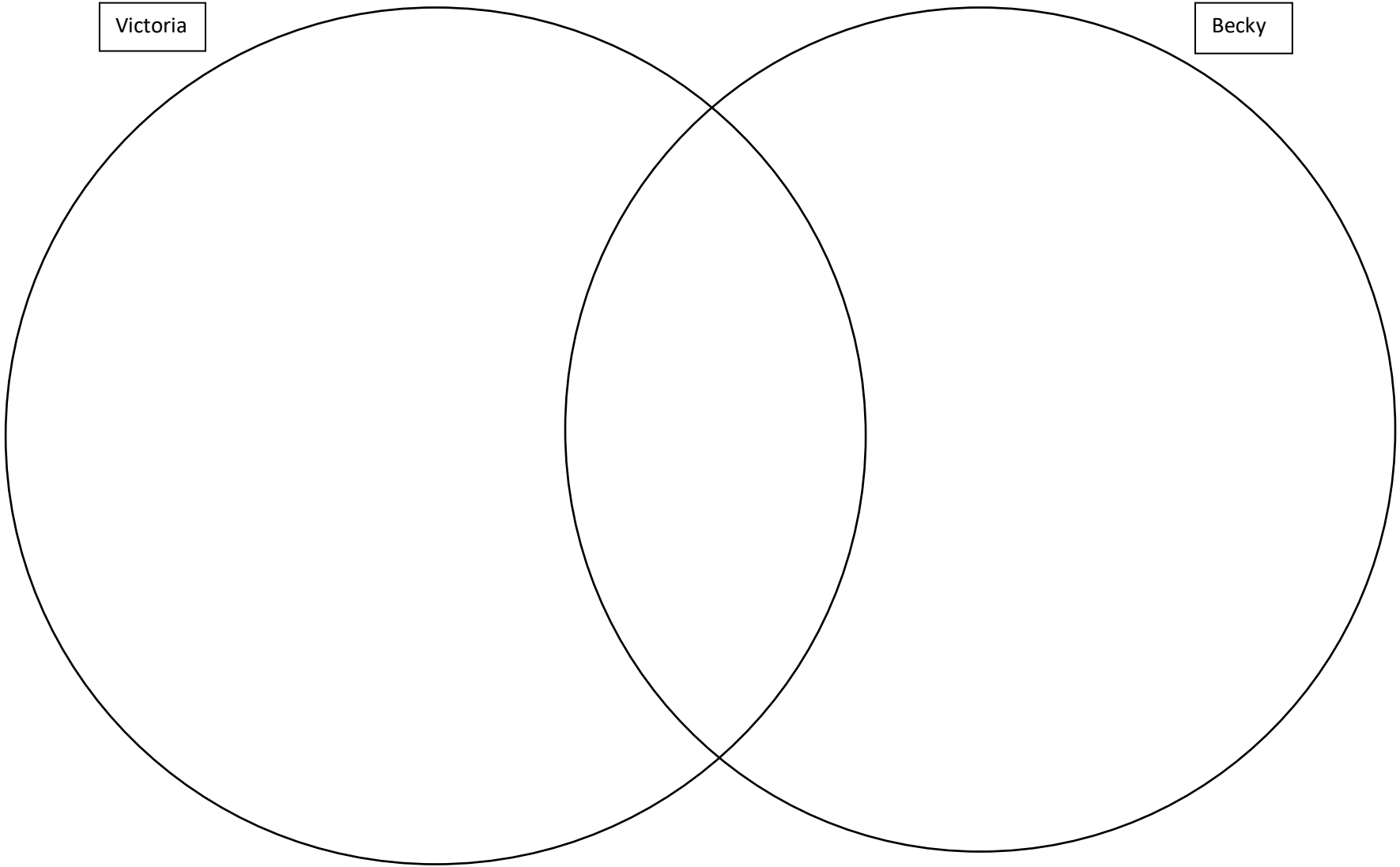
LESSON 7- Culture changes (2010/Present)   Names of group members _____

Part 1 – Who's who in New York City today?

New York City Population, 2010

4. 28%

1. 45%

3. 12%

2. 25%

To the left is a graph of New York City's population by racial/ethnic group. There is just one problem with the graph. That is, the categories (colors) on the pie chart are not labeled. In Lesson 3 you found the major racial/ethnic groups in New York City according to the 2010 U.S. census. Refer back to that lesson if you can't remember the racial/ethnic breakdown. What label should be used on each category on the pie chart?

1.   _____   3. _____
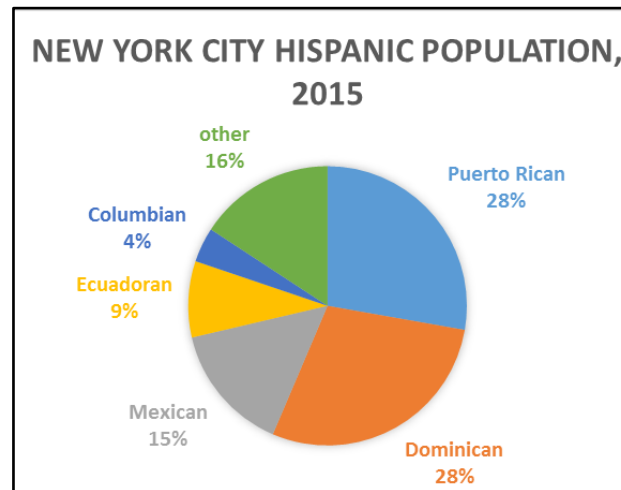
2.   _____   4. _____

Also in Lesson 3 you discovered the leading regions from which New York's foreign-born population came in 2013. They were: the Caribbean (_____%), China (_____%), and India, Mexico, and Russia all at _____%. Refer back to Lesson 3 if you can't remember the numbers.

Unlike the other regions named, the Caribbean is not a country. From what two countries in the Caribbean do most immigrants come? Look at the graph to the right to find that answer. The top 2 countries are:
#1 _____ and #2 _____.
(Note: Use a map if you don't know the name of the countries.)

Source of data for graphs: http://clacls.gc.cuny.edu

NEW YORK CITY HISPANIC POPULATION, 2015

other
16%

Columbian
4%

Ecuadoran
9%

Mexican
15%

Puerto Rican
28%

Dominican
28%

STOP   Wait until your teacher gives you instructions to move on.

Part 2 – Picture Bingo

Use the "Picture Bingo" cards and the poster board from your teacher. After looking at a picture, place it in the correct box on the Bingo board. When you have five in a row, say "Bingo." Sources 9 and 10 provide some clues to help you. Be sure to investigate the links on the website as well. Note: Some pictures could be placed in more than one location on the Bingo board. But, since you have only one copy of each picture, you must choose one location. Be sure you can explain why you chose to place it where you did.

LESSON 8 – Changes in New York City's Plants, Animals, and Land   Names of group members _____

_____

Part 1 – If New York City's PALS (Plants, Animals, and Land) could Talk….. 1ˢᵗ Draft

Congratulations! You have just landed a job at the American Museum of Natural History in New York City! Your first task here is an exciting one; you along with your team members are to create a new exhibit for the museum called "If New York City'S PALS could Talk." The purpose of this exhibit is to show visitors how New York City's plants, animals, and land have changed since Europeans arrived in the early 1600s.   Your team will have a plant expert, an animal expert, and a land expert. Each of you is to use the websites provided in Sources 11 and 12 plus the map "Beneath New York" (from your teacher) to help you complete your first task. That is, to complete the table on the next page by identifying type of plants, types of animals, and characteristics of the land (i.e. elevation, shape of the land, surface material) found in New York City before the arrival of Europeans and today. Before you begin, take a few minutes to read the notes below.

IMPORTANT NOTES about using Sources 11 & 12. Read before completing table.

Source 11: To reach information you can use, begin by clicking on "Launch the Map Explorer." When you get the message "Welcome to Welikia," click "ok." Zoom in to examine the island of Manhattan. Add information to the table below such as: What kind of vegetation does the dark green color represent? The light green color? Which is more common on Manhattan? Name some specific plants that are commonly found on Manhattan Island.(To identify these, you will need to click on some specific blocks to look at the information provided.) What kinds of animals were found here? Look at a few specific blocks (in both the light green and the dark green areas) to find the answers. For a description of land in New York City "then," click on the "Landscapes" tab which provides information about the topography and geology of each block. The map "Beneath New York" will also help provide information you can use to describe the land "then."

Source 12: The *Biodiversity Assessment Handbook for New York City* is long! You will not need to read all this. Sections that are useful for you include: Introduction (p. 6), New York City's Ecological Setting (pp. 13-14), Climate (p. 15), Surface Waters (pp. 16-18), Geology, Geography, and Soils (pp. 18-20), Urban Habitats (pp. 20-21), and Habitat Loss, Degradation, and Fragmentation (pp. 24-27).

	New York City "Then"	New York City "Now"
Plants - Types and amounts - Specific examples		
Animals - Types - Specific examples		
Land - Elevation change - % in hills		

Once your table is complete, discuss (with your other team members) what you might put in the exhibit. In a few minutes you will be asked to share your thoughts with your teacher and your classmates.

STOP Wait until your teacher gives you instructions to move on.

Part 2 - If New York City's PALS (Plants, Animals, and Land) could Talk….. Final Draft

As a team, review the questions and comments from your teacher (Museum Director) and classmates (Board of Directors). Adjust the plans for your exhibit accordingly. Then choose 3 items (one plant, one animal and one item related to land such as a hill, a depression, a rock) that they have identified as being part of your exhibit. At least one item should be related to those found in the past and at least one item should be related to those found in the present. As they team, identify an action or statement that each item might make if they were to come alive at night in the museum. Record your thoughts below. Make sure the action/statement relates to changes over time.

	Plant = _____ Past or present? _____	Animal = _____ Past or present?_____	Item related to land = _____ Past or present? _____
Nighttime action or statement			

LESSON 9 - Land Use Change   **Names of group members** _____

Part 1 – Time Capsule Detectives to the Rescue

The mayor of New York City needs your help – and fast! The city has just begun a program of burying time capsules at key locations in the city. One hour from now she is scheduled to give a speech when the first time capsule is buried at Castle Clinton National Monument. The box you have in front of you has the items that will be buried there. But, the city computer system just crashed and the mayor can't access the file that explains what each of these items mean. And, unbelievable as it seems, no one printed a hard copy of the document! So, she is turning to you – the Time Capsule Detectives – to solve the mystery. What is the significance of each of the items in the box? All you know is the objects commemorate what the location was used for at different points in time.

Use the table below to record what the building was used for at different points in time and to list the object(s) from the time capsule that relates to that time period. The resources below will help you help solve this puzzle. When the mayor (your teacher) tells you "Time is up," be prepared to explain what you found and provide a convincing argument as to the meaning of each item. Hopefully your findings will match those of the other Time Capsule Detectives and the mayor can accurately explain the significance of each item in the time capsule.

	Pre-1609	1609-1664	1811-1822	1824-1854	1855-1890	1896-1941	1946-present
Use of the Castle Clinton site							
Related Time Capsule Items							

Resources: 1. Clinton Castle National Monument brochure.
                  2. Manahatta map (Source 11).   When the website opens, click on "Launch the Map Explorer," then enter "Castle Clinton National Monument in the location box, then click on the symbol that appears on the map)
                  3. Source 2 (Watch the video on catching fish)
                  4. New Amsterdam map (Source 13)
                  5. Source 5 (Go to "First Settlements in New York.")

Part 2 – Time Capsule Detectives at work again

Congratulations! The mayor was so pleased with your work in the emergency situation, she would like you to work with her office on planning the next Time Capsule. The location that has been chosen is a well-known intersection in New York City – Wall Street and Broadway.

To begin, go to "Wall Street and Broadway in New York City" in Google Earth. Use "Street View" to do a 360° panorama of this intersection to see what is there today. Also, use the Google Earth image to get an idea of where this intersection is in New York City so you can find it on other maps you look at.

1. The first step in preparing for the Time Capsule is to determine what the land was used for at different points in time. As with the first time capsule, we will focus on pre-1609, 1609-1667, 1900, and today. Your first task is to draw a land use map of this intersection at each of the four time periods identified. To do so, fold a piece of 8 ½ x 11" paper in quarters. Use each quarter to draw the map of this intersection. Draw a large rectangle (3" x 4") in the middle of each quadrant. Draw your map inside the rectangle and use the space around the edges for the title and source of information.
   a. Manahatta map (Source #11. When the website opens, click on "Launch the Map Explorer." Then, enter "Wall Street and Broadway" in the location box, then click on the symbol that appears on the map. Since the block that appears does not show the entire intersection, you will need to click on the two blocks immediately east as well.)
   b. Source 6 (Costello zoomable map) Zoom into the map and find the intersection of Wall Street and Broadway.
   c. Source #15 You will need to zoom in to find the intersection of Wall Street and Broadway. Then look for photographs from that location for the time period you are interested in.)
   d. Source #14 (Once the map of New York City is apparent, click on "Land Use" and check "Primary Land Use." Then, zoom in on the map until street names are visible and you can find the intersection of Wall Street and Broadway.

NOTE: Just to keep you detectives "on your toes," one of the sources cited above provides little useful information for your land use map. As a result, your map for one of the time periods is incomplete. Which source is the least useful? Which time period has the incomplete land use map?

🛑 When you have competed your land use map, show it to your teacher for review. Do not proceed until your teacher has seen and approved your map.

Now, think about the objects you would place in a time capsule at this location.   Fill in the table below with your group's recommendations for time capsule objects and provide a rationale for the object.   You will be asked to share your ideas at a meeting with the mayor. She will then choose the time capsule objects after hearing from each team of *Time Capsule Detectives*.

Time Period	Objects for the Time Capsule	Rationale for objects
Pre-1609		
1609-1664		
1900		
Today		

LESSON 10 – Natural Changes   **Names** _____

Three questions are posed in this lesson. You will look for answers to those questions by: simulating conditions at a beach, watching a short movie, and examining maps.

Q1: **How do waves affect a beach?**

Discuss the question with your group and write your prediction here: _____

_____

_____

To find the answer, make a model beach in a paint roller pan as follows:
1. Cover the bottom of the pan with five cups of sand, using most of the sand at the shallow end of the pan.
2. Slowly pour six cups of water into the deep end of the pan.
3. Let the water and sand settle for five minutes.
4. Take a picture of the beach in its original state (Or mark the location of the beach on side of the roller pan with masking tape.)
5. Lay an empty plastic water bottle horizontally so it floats in the water in the deep end of the pan.
6. Bob the water bottle up and down for 2 minutes to make waves. (NOTE: If the water splashes out of the pan, make smaller waves.)
7. Stop bobbing the water bottle. Compare the beach you see in the pan to the original beach. How has it changed?

Activity from: https://www.scientificamerican.com/article/bring-science-home-beach-erosion/

STOP   Wait for instructions from your teacher.

Q2: How else do waves affect a beach?

To find the answer to this question, you will watch a video called "The Beach: A River of Sand." Take notes below as you watch the video.

NOTES:

Write out the answers to the following questions during the class discussion after watching the video:

a.   Where does the material on a beach come from?

   _____

b. How does the sand on a beach move in the summer and winter?

   _____

   _____

c. Why does the sand on a beach not pile up at the mouths of rivers? Where does it go instead? How does it get there?

_____

_____

_____

So,   in addition to eroding the beach (as seen in the first simulation), waves also _____.

Q3: How have waves shaped the coastline of New York City?

A1) To find one answer, go to Source 16. Look at the satellite image titled "SHORELINE CHANGE IN ANNADALE, STATEN ISLAND 1924-2012." This image primarily shows evidence of: a) a shoreline eroded by waves
                                                                                 b) a shoreline extended by waves
                                                                                 c) no change in the shoreline

A2) To find another answer to the question, go to Source 17. This image shows evidence of:
                                                                                 a) a shoreline eroded by waves
                                                                                 b) a shoreline extended by waves
                                                                                 c) no change in the shoreline

A3) Go back to Source 16 and find the map "Water Edge Type." Because of the threat of coastal erosion, many changes have been made to the shoreline in New York City. Bulkheads or vertical walls of wood or steel are built to reduce erosion. Similarly, riprap or structures made of stones or concrete blocks are also designed to reduce erosion.   Most prone to erosion are places with sand beaches along the shore.
So, based on this map, the places most prone to erosion along the coast are: (Circle two)

a) Bronx   b) Manhattan   c) Brooklyn   d) Queens   e) Staten Island

Final question:
Discuss the pros and cons of building bulkheads and adding rip rap to coastal areas. Would you recommend this be done for the beaches most susceptible to erosion? Why or why not?