

**Teaching and Learning Strategies for Middle/High School
From
*“The Making of Milwaukee” Curriculum***

**Math:
Teaching and Learning about Milwaukee through Math**

The following activities are from “The Making of Milwaukee” on-line curriculum:

- **Milwaukeeans by the Numbers** (Data Analysis)
- **Designing Your Own Census Survey** (Designing, Conducting and Representing Survey Data)
- **Average Life Expectancy** (Collecting, Graphing, Analyzing Data)
- **A New Deal For Milwaukee** (Decision-Making on Spending Federal Money)
- **Why has Milwaukee’s Population Decreased?** (Computing, Comparing Data)
- **TV Reigns Supreme** (Surveying and Determining Ratios)

MILWAUKEEANS BY THE NUMBERS

The following table is taken from the 1905 U.S. Census. It lists the number of people born in different foreign countries living in Milwaukee County during this year. The percentages were not part of the census and have been calculated as approximate estimates to offer further insight. When viewing this table, keep in mind that these are the number of people living in Milwaukee County who were born in these foreign countries. Therefore, there would have been more people with ethnic backgrounds from each of these foreign countries (but not necessarily born there) living in Milwaukee County in 1905 than the numbers depicted in the chart.

Country of Origin	Number of Foreign Born in Milwaukee County in 1905	Percentage of Total Foreign Born Living in Milwaukee County
Austria	2,952	2.8%
Belgium	80	0.08%
Bohemia	2,028	1.9%
Canada	2,040	1.9%
Denmark	569	0.54%
England	2,227	2.12%
Finland	96	0.09%
France	272	0.26%
Germany	61,523	58.6%

Greece	413	0.4%
Holland	736	0.7%
Hungary	1,637	1.6%
Ireland	2,662	2.5%
Italy	1,270	1.2%
Norway	2,431	2.3%
Poland	18,527	17.6%
Russia	2,423	2.3%
Scotland	738	0.7%
Sweden	698	0.7%
Denmark	764	0.7%
Wales	317	0.3%

1. Use the statistics from the 1905 Census above to discuss the following questions that are designed to help students explore this source:
 - What do these numbers suggest about the diversity of Milwaukee during this time?
 - Do you think Milwaukee has the same type of diversity today? How is it similar or different?
 - How do you think these numbers were gathered?
 - What evidence is there in Milwaukee today that the city had such ethnic diversity and a large foreign born population at one time?
 - How does this source only provide a limited understanding of Milwaukee's ethnic diversity during this time?

DESIGNING YOUR OWN CENSUS SURVEY

1. Explain to students that a census is taken every 10 years in the United States to gain vital information about our country's population. In addition to counting the number of people in the country and various communities like Milwaukee, census statistics also contain important information like income, family size, and the ethnic and racial composition of our country as displayed in the source from 1905. Over the past few decades, individuals fill out and send in a form from the government to help collect this data. Many years ago, a census taker went door to door to gather this data.
2. Students should imagine that they are a census taker or a designer of a modern day census survey for the city of Milwaukee. They should be given individual time to create between 5 and 10 important questions that they would like to know about the residents of the city of Milwaukee.

3. Students should share these questions with the rest of the class and the teacher should take a vote on the 10 most important questions that they would ask Milwaukee residents and lead a discussion on why students chose these questions. These questions will create the class' census survey or census taker questionnaire.
4. The teacher should have students find 3-5 different adults that they know to take the survey and use the data students collect to engage them in a class discussion comparing it to actual census data for Milwaukee found at (<http://www.census.gov/>).
5. The following questions could serve as a guide to facilitate a discussion comparing students' data to the actual data from the federal government:
 - In what ways is the class' census data similar to the official census data from the U.S. government?
 - In what ways is the class' census data different from the official census data from the U.S. government?
 - Why do you think there were differences?
 - What was the most challenging part of this activity? Why?
 - What was the most enjoyable part of this activity? Why?
 - What does the class data suggest about the way people are categorized in the United States? Include a discussion of the limited perspectives/understandings of Milwaukeeans offered by the students' data and the limited perspectives/understandings of Americans offered by the U.S. government's data.

AVERAGE LIFE EXPECTANCY

The average life expectancy rate for Milwaukee citizens in 1890 was 27.6 years and is a startling statistic for both young and old to comprehend. After viewing Video Chapter 10, *Trouble in Town*, the following learning activity will help students explore why this statistic was so low at the turn of the 20th century and the degree to which and why life expectancy rates have changed over time.

1. Tell students that people who study public health issues have always been interested in life expectancy rates among all people in all places, as well as particular groups of people in particular places. Ask students the following series of questions: Why are public health officials interested in life expectancy rates? Why are public health officials in Milwaukee interested in knowing the average life expectancy rate for our city? Why might public health officials in various states like Wisconsin or Illinois be interested in these rates? Why are public health officials in various countries like the United States, Mexico, China, and the Sudan interested in life expectancy rates? *Life Expectancy Rates depict an*

average number of years particular people in particular places are expected to live.

2. Then, ask students to think about why the life expectancy of Milwaukee citizens was only 27.6 years in 1890.
3. If students don't think about why so many young people died before they were 5 years old, pose this question: "*Why did so many children under 5 die at such a young age at the turn of the 20th century?*"
4. Ask students if they think these statistics are still true? Do you think that 27.6 years of age is still the age that most people die at the beginning of the 21st century? Why or Why not? Ask how long most of their family members live?
5. Have students list the exact or approximate ages of their 5 oldest living family members. *To access exact numbers for a more accurate data set, give this data collection assignment to students a day or two before you actually ask students to engage in the rest of this learning activity.*
6. Ask students to share the ages of their 5 oldest living family members. Post the listing of all ages on the board, a chart, or an overhead so all students can access the data.
7. Based on this data, ask students to compute the mean, mode, and range of the oldest family members in their classroom.
8. At this point you may also want to ask students if they think the mean, mode, and range of ages are different between men and women. Tell students that when they disaggregate data, they are dividing the data into specialized groups in order to provide more specialized information for a data study. Have students compute the mean, mode and range of the oldest males and the oldest females in their families and compare the findings.
9. After sharing their answers with each other, ask students if they believe that the mean they have computed is a realistic comparison to the average life expectancy rates for people (and/or men and women) currently living in the US. (Be sure to caution students about making generalizations from a small data set to a larger population.) Ask these questions:
 - What do you think is the average life expectancy rate for people and/or women and men living in the US?
 - Do you think that the US has the highest life expectancy rate compared to other countries around the world? Why or Why not?
 - What other countries do you think have high life expectancy rates and why?
 - What countries do you think have low life expectancy rates and why?

10. Direct students to go to the following websites to investigate life expectancy rates in the US and around the world:
www.wikipedia.org -- a free on-line encyclopedia
www.who.org -- The World Health Organization website
Students can use the following descriptors to access the information needed on these websites:
Life Expectancy Rates
World Maps Showing Life Expectancy Rates
Map of Life Expectancy Around the World
11. Ask students to collect the life expectancy rates of five countries including the United States. Require that students include data from one country from each of five continents and represent this data in a graph.
12. Have students share their graphs with each other by posting them on the board, by making transparencies of their graphs, or sending each other their graphs as an email attachment. This sharing of data may occur between a small group of 4-6 students or the whole class depending on the number of students in your class.
13. After viewing each other's data, ask students to answer the following questions:
- Based on what we learned about the 1890 life expectancy rate in Milwaukee and assuming that this was fairly typical for the rest of the US at that time, how has the life expectancy rate for the US changed since 1890?
 - What have you learned about the life expectancy rates in various countries?
 - Why do you think certain countries have a much higher life expectancy rate than others?
 - Which continent seems to have the highest life expectancy rates? The lowest life expectancy rates? Why do you think this is so?
 - What questions do you have about these life expectancy rates?
 - If you also had students disaggregate the data along gender lines, ask students: "what have you noticed about life expectancy rates along gender lines and why do you think this happens?"

Follow-up Learning Activities:

- Students can go back to the World Health Organization website, (www.who.org) and collect, represent, and draw conclusions about data on a specified number of countries that currently have the highest and lowest average life expectancies. They can further research why these discrepancies are occurring, what is being done and by whom to address these issues. Students can demonstrate their learning by writing a report, giving a speech, or by taking part in a guided poster session where they must guide others through the information displayed on their poster.
- Teachers can consult with their mathematics colleagues to construct additional learning activities related to collecting, representing, and constructing meaning

from statistical data related to life expectancy rates in the U.S. and other countries along gender, ethnic, and racial categories.

A NEW DEAL FOR MILWAUKEE

*** Note to Teachers: Video Chapter 14 complements this lesson activity.*

During the Great Depression, the city of Milwaukee received millions of dollars from the federal government through Franklin Delano Roosevelt's New Deal programs to employ people and make multiple improvements to the city. As the video and the accompanying book *The Making of Milwaukee* suggest, the New Deal left a powerful imprint on Milwaukee's history. (Examples include Whitnall Park, Parklawn (a low income housing project), and a large doll collection and exhibits for the Public Museum). In this simulation, students will be in charge of spending federal money to improve the city of Milwaukee for as many people as possible. Each group (or individual) will create a plan that explains the project(s) they will include to improve the city and they must justify how they will spend the money they receive. Each group (or individual) will only receive a limited amount of money. The following rules will guide the simulation:

1. Every group (individual) will receive the same amount of money - \$1,000,000.
2. The money must benefit as many people as possible.
3. Students must be able to justify why they spent the money in a particular way and also estimate the number of people who will be employed and benefit from each project.
4. Students can select from the following list of possible items to spend: (Please tell students that these are in no way based on actual Depression-era or present day dollar figures):
 - A small park (one third of square mile)– \$250,000
 - A medium sized park (two-thirds of a square mile)- \$500,000
 - A large park (one square mile) – \$ 750,000
 - 1 Park shelter - \$25,000
 - 1 Stone Bridge for a park - \$50,000
 - 1 Waterfall for a park - \$75,000
 - 1 Park statue - \$25,000
 - A small arts and crafts project (e.g. doll collection) - \$25,000
 - A medium size arts and crafts project (e.g. toy project) - \$50,000
 - A large size art project (e.g. orchestra) – \$100,000
 - A small public works (e.g. a recreation center) building - \$250,000
 - A medium size public works (e.g. a school) building - \$500,000
 - A large public works (e.g. water plant) building - \$750,000
 - A small museum exhibit - \$10,000
 - A medium size museum exhibit - \$25,000

- A large public museum exhibit - \$50,000
 - A public greenhouse for a botanical garden - \$100,000
 - A small housing project (50 units) - \$250,000
 - A medium size housing project (100 units) - \$500,000
 - A large housing project (150 units) - \$750,000
 - A public swimming pool - \$50,000
 - A public golf course - \$150,000
5. Student should keep track of the money they spend and make sure it does not exceed \$1,000,000.
 6. These projects are just a start. The students may create their own projects and should then consult with the teacher on what the cost of the project should be.
 7. Students should present their plan to the rest of the class and explain their justification for the items they included in their plan to improve Milwaukee. The following discussion questions might serve as an effective way to wrap up the activity:
 - Was it better to improve the city with smaller, medium size or large projects? Why?
 - What were / would have been the advantages and disadvantages of including small projects in your plan?
 - What were / would have been the advantages and disadvantages of including medium size projects in your plan?
 - What were / would have been the advantages and disadvantages of including large projects in your plan?
 - How does your plan compare to the actual projects that were completed in Milwaukee as a result of the New Deal? (use information from the video for discussion here)
 - What does Milwaukee need most for improvement today? Why?

Follow-up Learning Activity:

- The teacher might want to have students research the actual cost of the projects during the New Deal completed in Milwaukee. Students could also compare their ideas with the money being currently spent on any similar projects by the city of Milwaukee or Milwaukee County today. Budget information for the city of Milwaukee can be accessed on the city website <http://www.ci.mil.wi.us> and budget information for Milwaukee County can be found on the county's website <http://www.co.milwaukee.wi.us>

WHY HAS MILWAUKEE'S POPULATION DECREASED? WHY IS MILWAUKEE'S POPULATION CONTINUING TO DECREASE?

*** Note to Teachers: Video Chapters 15, 16, & 17 complement this lesson activity.*

1. Direct students' attention to the timeline at the end of this **HOT Links Section** related to Modern Milwaukee and have them think about reasons why Milwaukee's population has decreased from the 1960's to the present. First have students visualize the information in the following manner:
 - Have students specifically look at the years 1960, 1970, 1980, 1990, 2000, and 2004. Have students compute the population declines between decades in terms of number difference and percentage. Have students graph the decline.
 - Have students look up Milwaukee's population during the last century and compute the differences in terms of numbers and percentages. Have students graph the increases and decreases during the past century. This information is readily available on-line through the U.S. Census Data.
2. After investigating and representing specific population data ask students the following questions:
 - Why do you think Milwaukee was the 11th largest city in the U.S. in 1960 and is currently the 22nd largest city in the U.S.?
 - What has happened to the people of Milwaukee? Where have they gone and why?
 - Is a population decrease a negative phenomenon?
3. Further ask students to share any questions they might have about the population decrease.
4. Ask students to think about how they could find out answers to these questions.
5. Arrange for students to interview their Common Council Representatives regarding why they think Milwaukee's population has decreased in the last 45 years.

TV REIGNS SUPREME

*** Note to Teachers: Video Chapters 15, 16, & 17 complement this lesson activity*

1. Draw students' attention to the Timeline that follows related to the Modern Milwaukee era. Have students locate the year Milwaukee's first TV station "Signed On the Air".

2. Then have students note how many TV sets were in Milwaukee during the year 1948.
3. After those numbers are identified on the timeline, ask students to imagine that, by the year 1950, there may have been 15,000 TV's in Milwaukee. Then after locating (on the timeline) how many people were living in Milwaukee in 1950, ask students to compute the ratio of TV sets to people living in Milwaukee at that time.
4. Next ask students to think about how many TV sets might be operating in Milwaukee at the present time. Ask them if they think that the current ratio of TV's to people living in Milwaukee is same as it was in 1950. Do they think the ratio would be the same or would it be a higher or lower ratio? Ask students to justify their reasoning.
5. Then ask students how they might determine the current ratio of TV's to people living in Milwaukee at the current time. Ask them to figure out a reasonable process to determine this ratio. Give small student groups time to deliberate about the best way to determine such a ratio and then have them compute that ratio. Tell students they must be ready to share their problem solving process as well as their rationale for the problem solving process.

(If students struggle with this task, or if your students are not developmentally ready to tackle this learning activity, suggest that they figure out a way to most accurately determine the ratio of TV sets to people in their classroom).

Follow-up Learning Activities:

- After engaging in the mathematical problem solving activity, have students begin to think about why people are so attached to their televisions and if they believe it will always be such a popular form of entertainment. If they don't think it will maintain its popularity, then what forms of entertainment do they believe will take the place of TV and what is their rationale for this belief.
- Based on what students have read, seen on the Making of Milwaukee Video Chapters, heard from their family stories, or seen in family photograph albums, have students create a timeline of popular forms of entertainment in Milwaukee since its very beginnings.
- Have students conduct surveys as well as graph and analyze the findings related to the most popular:
 - TV shows
 - Viewing Times
 - TV Brandnames
 - TV Sizes
 - TV Commercials

Depending on developmental levels, students can represent the entire population they surveyed on their graphs or they can disaggregate the data set according to age groups, gender, etc.

****Timeline Information on Modern Milwaukee**

A more general and interactive timeline of the Modern Milwaukee era with photographs can also be found on The Making of Milwaukee website, www.themakingofmilwaukee.com. Go to the “Milwaukee’s History,” section and then click on “Timeline”. Or, to go directly to the interactive timeline, click here now: <http://www.themakingofmilwaukee.com/history/timeline.cfm>

The information that follows is relevant to the particular time period of Modern Milwaukee as seen in Video Chapters 15, 16, & 17.

- 1945- World War II (WWII) ends.
- 1945- 2% of Milwaukee population is African American.
- 1946- Baby Boom Begins.
- 1946- Housing Boom begins; Cape Cod houses sell for \$5,600.
- 1946- Milwaukee adopts its first freeway plan.
- 1947- Milwaukee’s first TV station (WTMJ-TV) signs on.
- 1948- 10,000 TV sets are operating in Milwaukee.
- 1949- Breweries account for only 2 percent of the area’s employment.
- 1948- Frank Zeidler, a Socialist, succeeds John Bohn as Mayor.
- 1950- Milwaukee becomes the 15th largest city in the U.S.: population 637,392.
- 1950- Modern Household appliances and other conveniences become popular.
 - Transistor Radios
 - Hi-Fi Systems
 - Air Conditioners
 - Refrigerator/Freezers
 - Power Mowers
 - More and Faster Cars
- 1950- 20,000 African Americans live in Milwaukee.
- 1950-1957- Eight new Milwaukee suburbs appear.
- 1951- Milwaukee’s first shopping center, Southgate, opens.
- 1951- Milwaukee County’s industrial output doubles since the end of WWII.
- 1952- Construction begins on freeway.
- 1953- County Stadium is built to entice a professional baseball team.
- 1953- Professional baseball comes to Milwaukee.
 - Boston Braves move to Milwaukee and are renamed the Milwaukee Braves.
- 1956- UWM emerges from the old State Teachers College.
- 1957- Milwaukee Braves win the World Series.
- 1957- Village of Greenfield incorporates.
- 1957- Milwaukee County now has 10 cities and 9 villages.
- 1957- 97% of all households in the area have TV’s.
- 1957- War Memorial Center is completed.
- 1958- Interstate 94 opens first segment in Waukesha County.
- 1958- Last streetcar runs.
- 1958- Milwaukee County Zoo moves to present location with “habitat” enclosures.
- 1959- Mitchell Park Domes construction begins.
- 1960- Milwaukee becomes the 11th largest city in the U.S.: population 741,324.

- 1960- Henry Maier, a Democrat, becomes Milwaukee's mayor.
- 1960- John Doyle becomes Milwaukee's first county executive.
- 1960's- Milwaukee's blights appear.
- Central Milwaukee loses much of its mass due to freeway clearance.
 - Cherished landmarks are destroyed due to freeway clearance.
 - Dutch Elm disease destroys thousands of trees.
 - Alewives, an ocean fish, come through the St. Lawrence seaway and die on Lake Michigan beaches by the 1,000's.
 - Milwaukee Pub. Schools charged with illegal and intentional segregation.
- 1960's- Lloyd Barbee leads charge against Milwaukee Public Schools.
- 1960's- Father Groppi leads a series of demonstrations against segregation and for civil rights.
- 1960's- Numerous non-violent civil rights protests occur.
- 1960's-1970's- White flight becomes a common response when African Americans move into a community.
- 1963- Annual Great Circus Parade begins.
- 1965- Milwaukee Braves' owner moves the team to Atlanta, Georgia.
- 1967- Mitchell Park Domes construction is completed.
- 1867- A local chapter of the National Organization for Women (NOW) is formed.
- 1967- The National Guard is called to duty and the city is shut down when a riot occurs on July 30, 1967.
- 1967- Dan Hoan Bridge, the bridge to nowhere, is connected to surface streets.
- 1968- The freeway system was completed, including the Marquette Interchange.
- 1968- Summerfest begins.
- 1968- The grand old Northwestern Railroad Depot on the lakefront is demolished.
- 1968- Milwaukee Bucks come to town.
- 1969- The Milwaukee 14, five of whom are Catholic priests, are jailed for burning draft records.
- 1970- Milwaukee is the 12th largest U.S. city: population 717, 372.
- 1970- The Marcus Center for the Performing Arts is dedicated.
- 1970- 105,000 African Americans live in Milwaukee.
- 1970's- Milwaukee reconnects with its ethnic, ancestral, and cultural roots and Traditions.
- 1970's Latino community spreads south and west.
- 1970's African-American community spreads north and west.
- 1971- The Seattle Pilots become the Milwaukee Brewers.
- 1971- Milwaukee Bucks win the National Basketball Championship.
- 1978- Festa Italiana becomes the first lakefront ethnic festival.
- Other festivals follow later:
- Mexican
 - German
 - Irish
 - Polish
 - African-American
 - Indian
 - Asian
 - Arabian
- 1979-1983- Milwaukee loses more than a quarter of its industrial jobs in 4 years.

- 1980- Milwaukee is the 16th largest city in the U.S.: population 636, 212.
- 1980's- Milwaukee's manufacturing sector is ripped by a savage recession.
- 1980's- African-American poverty increases sharply.
- 1982- Schlitz brewery closes.
- 1982- Milwaukee Brewers win the American League Pennant.
- 1982- Grand Avenue Mall opens.
- 1987- Allis Chalmers goes bankrupt.
- 1980's-1990's Southeast Asians become fastest-growing ethnic group.
- 1980's-1990's Russian Jews settle in Milwaukee.
- 1980's-1990's Arabs settle in Milwaukee.
- 1990- Milwaukee is the 17th largest city in the U.S.: population, 628,088.
- 1990's- Milwaukee becomes a "majority minority" city.
- 1990's- The gap between the suburban haves and the urban have-nots widen.
- 1990's The Milwaukee economy bounces back and new industries emerge.
 - Quad Graphics
 - GE Marquette Medical
 - Manpower
 - Data processing for banks: Fiserv & Metavante
 - Mutual funds
 - Kohl's
 - Aurora Health Care
- 1990's- Traditional companies prosper and embrace new technologies.
 - Northwestern Mutual
 - Miller Brewing Company
 - Rockwell automation
 - Johnson Controls
 - Harley-Davidson
- 1988- Henry Maier's reign as mayor ends after 28 years.
- 1988- John Norquist elected mayor.
- 1980's- present- Revitalization of Milwaukee's Downtown occurs.
 - Water Street
 - Park East Freeway Demolition
 - 6th Street Bridge
 - Marquette Athletic Field
 - Third and Fifth Wards
 - New theatres
 - Galleries
 - Loft Apartments
 - Restaurants
 - Riverwalk
 - Potawatomi Casino
 - Downtown Housing
 - Library Hill
 - Third Ward
 - Commerce Street
 - Miller Park
 - Midwest Express Center
 - Art Museum's Calatrava addition
- 1989- Milwaukee is 17th largest U.S. city: population 628,088.
- 2000- Milwaukee is 19th largest U.S. city: population 596,974.
- 2003- Harley Davidson celebrates 100 years

- 2004- Milwaukee is 22nd largest U.S. city: population 583,624
- 2004- Tom Barrett elected mayor
- 2008- Harley Davidson opens museum and celebrates 105 years